

Public District School Board Writing Partnership

Course Profile **Communications Technology**

Grade 10

Open

- *for teachers by teachers*

This sample course of study was prepared for teachers to use in meeting local classroom needs, as appropriate. This is not a mandated approach to the teaching of the course. It may be used in its entirety, in part, or adapted.

Course Profiles are professional development materials designed to help teachers implement the new Grade 10 secondary school curriculum. These materials were created by writing partnerships of school boards and subject associations. The development of these resources was funded by the Ontario Ministry of Education. This document reflects the views of the developers and not necessarily those of the Ministry. Permission is given to reproduce these materials for any purpose except profit. Teachers are also encouraged to amend, revise, edit, cut paste, and otherwise adapt this material for educational purposes.

Any references in this document to particular commercial resources, learning materials, equipment, or technology reflect only the opinions of the writers of this sample Course Profile, and do not reflect any official endorsement by the Ministry of Education and training or by the Partnership of School Boards that supported the production of the document.

© Queen's Printer for Ontario, 2000

Acknowledgements

This profile is the result of a collaborative effort between the Simcoe County District School Board and The Institute for Catholic Education. (ICE)

Public School Board Writing Team - Grade 10 Communication Technologies

Lead Board

Simcoe County District School Board
Robert Emptage, Laura Featherstone, Project Managers

Course Profile Writing Team - Public

Joe Mandarino, Peel District School Board, Lead Writer
Joanne Durst, Peel District School Board
Errol Fraser, Peel District School Board
Lawrence Marler, Peel District School Board

Catholic School Board Writing Team - Grade 10 Communications Technologies

Lead Board

Toronto Catholic District School Board
Gino Grieco, Project Manager

Course Profile Writing Team - Catholic

Joe Tadman, Toronto Catholic District School Board, Lead Writer
Gary Hebor, Toronto Catholic District School Board
Anne Martin, Toronto Catholic District School Board
Terry Nolan, Toronto Catholic District School Board

Course Overview

Communications Technology, Open, Grade 10

Identifying Information

Course Title: Communications Technology

Grade: 10

Course Type: Open

Development Date: April 2000

Ministry Course Code: TGJ2O

Credit Value: 1

Secondary School Policy Document: *The Ontario Curriculum, Grades 9 and 10, Technological Education, 1999.*

Description/Rationale

This course introduces students to the concepts and methods of communications technology. Students develop communication ideas in five areas: graphic production, sound and video, computer animation, information displays, and photography. Focussing on fundamental concepts, students use computers, audio-video equipment, and other tools to acquire and demonstrate the knowledge and skills to create, capture, manipulate, edit, arrange, display, and present communication projects. Working through pre-production, production, and post-production processes, students create devices for effective communication with an intended audience. As they explore the diverse technologies within communications, students learn about career opportunities and the impact communications technology has on society.

Unit Titles (Time + Sequence)

Unit 1	Graphic Design and Production	22 hours
Unit 2	Short Audio-Video Production	22 hours
Unit 3	Short Animations	22 hours
Unit 4	Information Displays and Environments	22 hours
Unit 5	Image Production and Processes	22 hours

Unit Descriptions

Unit 1: Graphic Design and Production

This unit introduces students to the technology required to communicate graphically through desktop-publishing systems and software, print production methods, and specialty printing. Students learn and apply design elements and principles by creating thumbnail sketches, rough sketches, comprehensive layouts, and camera-ready artwork to produce printed materials. Safety, print media influences, careers, and educational planning are explored.

Unit 2: Short Audio-Video Production

This unit introduces students to the processes of audio-video pre-production, production, and post-production. Students learn basic shot sizes, camera movements, and special effects to create a storyboard and to script audio-video material. Students compose and capture images, edit audio-video footage, and apply finishing operations before presenting the production to an audience. The safe and careful handling of sensitive equipment is emphasized. Students learn to apply ethical standards and policies in their productions while exploring further education and career opportunities.

Unit 3: Short Animations

This unit introduces students to the fundamental principles of computer-generated animation. Students develop scripts, prepare storyboards, construct or model images, and edit animations and output for different applications. They study and apply composition, 2-D and 3-D modelling, and editing techniques to create animated, short films. Students apply ethical standards and policies in their productions while exploring further education and career opportunities.

Unit 4: Information Displays and Environments

Students plan and produce environments for information displays using a variety of software, hardware, and physical materials. Students create display spaces and employ electronic resources in the production, presentation, and distribution of information. Students apply ethical standards and policies in their productions as they explore further education and career opportunities.

Unit 5: Image Production and Processes

Students apply the elements and principles of photography in developing techniques to capture, manipulate, and edit images. Traditional black and white, 35 mm, pinhole, and colour digital photography are explored. Students learn basic optic principles, technical terminology, lighting techniques, and production processes to safely generate final photographic images. They discover how the camera captures images and how light is controlled in studio and natural settings. Students apply ethical standards and policies in their productions while exploring further education and career opportunities.

Course Notes

In addition to teaching proper equipment usage, Communications Technology provides practical experiences and information about technological systems that enable students to attain a deeper understanding of how effective communications products are conceptualized, planned, produced, distributed, and presented. Student work is expected to contain positive images of people regardless of age, physical appearance, dialect, socio-economic status, disability, race, or gender. Any stereotypes, acts of violence, sexual themes, or use of profanity is unacceptable. In addition to the specific skills that are developed throughout the course, students learn to:

- problem solve through careful analysis, co-operation, and communication;
- develop individual and group skills through student-centred activities;
- develop time-management skills to design and follow organizational plans to complete a range of tasks;
- show commitment to a task by maintaining a level of effort required to complete a product;
- develop the ability to self-monitor progress using record-keeping and tracking procedures such as logs, journals, and project portfolios.

Each unit enables students to focus on specific career options and gain insights into the skills required for a variety of professions. A number of teaching/learning strategies employed in the classroom allow for career orientation including job shadowing, computer research, field trips, and guest speakers.

Teachers address safety/censorship on the Internet by implementing School Board Policies relating to appropriate student use and access to Internet services.

Teaching/Learning Strategies

Brainstorming – group generation of initial ideas expressed without criticism or analysis

Buddy System – links students for peer/cross-age support

Case Study – investigation of real and simulated issues

Collaborative/Co-operative Learning – small group learning providing high levels of student engagement and interdependence

Computer-Assisted Learning – learning of new material or review/reinforce material previously learned

Conferencing/Discussion – student-to-student discussion and teacher-to-student conferencing to encourage confidence and motivation to success in all learners

Design Process – the stages of development of a product or process, including developing a focus, developing a framework, choosing the best solution, implementing a plan, and reflecting on the process and the product

Independent Study – exploration and research of a topic interesting to students

Journal Writing – the practice of expressing ideas, experiences, questions, reflections, personal understanding, or new learning in written form on regular basis

Mind Map – involves representing physical, demographic, numerical data through visual formats and shows relationships among ideas

Problem-Solving Strategies – helps students work through problems

Problem Solving – model for helping students to identify and work through a problem

Report/Presentation – oral, visual, and written presentation of researched topic to class or in community

Research – model of investigation

Socratic Lesson – oral presentation of information by the teacher

Teacher-Directed Class Discussion – students actively participate by taking turns discussing current issues

Assessment/Evaluation Techniques

Paper and Pencil Tests

- Ongoing quiz, self/peer rubric
- Final evaluation (rubric, tests)

Performance Assessment

- Research project
- Assigned exercises
- Log/journal entries
- Presentation
- Finished product
- Project portfolio*

Personal Communication

- Conferencing
- Student-teacher
- Teacher-group
- Self/peer assessment
- Daily log/journal
- Ongoing verbal feedback
- Critique self/peer

Teacher Observation

- Formal/informal

Reflection

- Self/peer assessment
- Log/journal

Assessment Tools

- Checklists
- Marking schemes
- Project specification sheets
- Rubrics
- Anecdotal comments with suggestions for improvement

* Students prepare a portfolio in which they add exemplary work as the course progresses.

Assessment Methods

Diagnostic – occurs at the beginning of a term, a unit of study, or whenever information about prior learning is useful

Formative – provides ongoing feedback to the teacher during learning about the quality of learning and the effectiveness of instruction

Summative – usually carried out at the end of a learning process (may include feedback and/or judgment)

Evaluation

Communications Technology activities are project driven and produce tangible materials. Projects fuel the need for students to acquire specific skills and attain a deeper understanding of communications technology. The skills and knowledge reflect the expectations set by the curriculum. The level of achievement on each expectation measures student achievement.

Evaluation in skill development involves assessing the process and product. Checklists are commonly used to identify the operational steps of the process, whether it's creating personal stationery or producing a short video. Significant aspects of the completed product or service are identified and commonly assessed with rating scales. Checklists and rating scales are effective tools for self-assessment as they establish acceptable standards of competence. These sheets provide the student and teacher with an up-to-date and ongoing means of monitoring the level of achievement attained. Teacher-student conferencing during pre-production, production, and post-production provides clarity and maintains the expected standards. The addition of a peer assessment component especially in a group work situation also helps to identify reasonable expectations.

- Self-assessment helps students to develop a sense of responsibility for their own learning. It encourages students to reflect on their growth and learning, giving them a sense of where they have been, where they are, and where they are going.
- Through modelling and coaching, teachers can help students to provide constructive and supportive feedback to themselves and to one another.

Performance tests are effective for assessing the achievement of knowledge and skills. Evaluation should include a variety of assessment techniques. The vocabulary used in the test questions should reflect those used in the lab situation. The option for oral testing and student demonstrations of acquired skills should also be used. Although students are encouraged to write answers in proper sentence form, diagrammatic answers are effective assessment instruments in technological education. In their planning and implementation of projects, work assignments, and problem-solving activities, students demonstrate their ability to combine skill and knowledge successfully in practical tasks.

Evaluation of Student Achievement

Assessment instruments provide information about student achievement. Learning skills, effort, punctuality, and recorded absences are reported separately and are not considered in the determination of the percentage grade. Assessment instruments may appear in more than one evaluation category. The final grade is determined using the weighting below as a guideline to reflect the student's most consistent performance level. The evaluation is based on testing, product development, application of processes, and product delivery using a variety of media. Factored into this evaluation is the degree to which a student uses independent and collaborative product development strategies.

Final Course Grade

Final Evaluation Formal Exam (theory and practical) and Portfolio	30%	30%
Term Evaluation Knowledge/Understanding <ul style="list-style-type: none">• Unit/activity tests• Quizzes• Activity exercises Thinking/Inquiry <ul style="list-style-type: none">• Assignments/worksheets• Activity projects• Independent study (career)• Activity exercises Communication <ul style="list-style-type: none">• Activity exercises• Presentations Application/Productivity <ul style="list-style-type: none">• Activity projects	10% 15% 10% 35%	70%
TOTAL		100%

Accommodation

Teachers using this course profile are expected to be acquainted with each student's Individual Education Plan (IEP) and unique learning characteristics and to make the necessary accommodations.

Teachers should use a range of teaching/learning strategies to recognize the needs of all students. Special needs students benefit from accommodations in the overall activity criteria, as well as teacher and peer assistance where appropriate. Written tests should be designed to suit students' reading and writing levels. Teachers should modify and expand teaching strategies to accommodate learning styles. These may include:

- modifying approaches to evaluation;
- oral instead of written tests;
- demonstrations of acquired skills instead of written evaluations;
- providing rewrite opportunities as appropriate;
- conferencing/discussion – student-to-student discussion and teacher-to-student conferencing to encourage confidence and motivation;
- small group learning;
- flexible timelines;

-
- adapting handouts;
 - peer tutoring;
 - enrichment and extension activities.

Resources

A number of resources are included in this profile. They include:

- textbooks;
- training manuals;
- magazines;
- web sites;
- multimedia and presentation packages;
- videos;
- career/industry sources.

OSS Policy Applications

The Grade 10 Communications Technology Course is designated as a Technological Education program. All courses offered in Technological Education are open courses comprised of a set of expectations that are appropriate for all students. (See *The Ontario Curriculum, Grades 9 and 10, Program Planning and Assessment, 1999* for a description of the different types of secondary school courses.) Students can use the course as a compulsory credit (1 credit from Science [Grade 11 or Grade 12] or Technological Education [Grades 9–12]) or as an optional credit. This course provides students with a broad educational base that prepares them for their studies in Grades 11 and 12 and for productive participation in society.

Students are introduced to practical aspects of communications technology using electronic, live, and graphic communications methods. The curriculum provides opportunities for students to undertake hands-on practical activities, as well as to conduct research and analysis. There is a range of teaching/learning strategies and accommodation to meet the needs of all students. Anti-discrimination education, equity/social justice issues, career goals/co-operative education, conflict resolution/violence prevention, and community partnerships are addressed in the course. These support many of the Ontario Secondary School Policies. Career exploration throughout all units is made available with *Choices into Action: Guidance and Career Education Program Policy for Elementary and Secondary Schools, 1999*.

Course Evaluation

Teachers may evaluate their course through a variety of methods. Teachers may network with colleagues from other schools, subject associations, and peers at the local school to determine what modifications or new ideas could be incorporated into the units. Since every teacher approaches the units in a unique way, there are ample opportunities for extensions, modifications, and applications. The school and business community may have input on developing aspects of the Communications Technology Course. Visitors, for example, may be asked to comment on a display of student work.

The following should be assessed:

- expectations are met;
- learning styles of all students are met through teaching strategies;
- assessment and evaluation reliably and accurately measure student expectations;
- parents are informed regularly of student performances;
- a variety of assessment/evaluation tools are used;
- a variety of teaching/learning strategies are used;
- students with special needs are accommodated properly.

Coded Expectations, Communications Technology, TGJ20

Theory and Foundation

Overall Expectations

TFV.01G

- identify and describe the techniques used to produce print media;

TFV.02G

- identify and describe the basic techniques required to produce animations and audio-video productions;

TFV.03G

- identify and describe the processes of capturing still images;

TFV.04G

- demonstrate understanding of electronic communication equipment.

Specific Expectations

TF1.01G

- explain the techniques used to produce technical drawings and illustrations;

TF1.02G

- identify basic composition and typographic principles;

TF1.03G

- describe the characteristics of materials used in print production;

TF1.04G

- describe printing and finishing processes;

TF1.05G

- describe various video recording techniques;

TF1.06G

- outline the procedures required to create audio-video, audio, and animated productions;

TF1.07G

- outline the steps used to edit audio-video, audio, and animated productions;

TF1.08G

- identify the types and uses of still photography;

TF1.09G

- identify various cameras and accessories and describe how to test the component parts;

TF1.10G

- explain the process of developing and printing photographic images;

TF1.11G

- identify the elements of lighting and staging.

Skills and Processes

Overall Expectations

SPV.01G

- prepare camera-ready artwork for print and post-production;

SPV.02G

- produce audio-video and/or animated productions;

SPV.03G

- compose, capture, and process still images;

SPV.04G

- use computer graphics software competently.

Specific Expectations

SP1.01G

- produce technical drawings and illustrations for printing;

SP1.02G

- apply composition and typographic principles to produce camera-ready artwork for print production;

SP1.03G

- produce printed copies using a variety of reproduction methods;

SP1.04G

- apply finishing operations to printed products;

SP1.05G

- create various effects using video and digital camera techniques;

SP1.06G

- use basic lighting techniques and props competently to accentuate audio-video productions;

SP1.07G

- create simple animations using video cameras;

SP1.08G

- edit audio-video and/or animated productions;

SP1.09G

- create still images using composition techniques;

SP1.10G

- process and obtain prints from film and/or digital input;

SP1.11G

- enhance or create sets, lighting schemes, and information displays.

Impact and Consequences

Overall Expectations

ICV.01G

- explain the benefits, risks, and ethics associated with communications technology;

ICV.02G

- observe safety rules and regulations;

ICV.03G

- identify career opportunities in the communications field.

Specific Expectations

IC1.01G

- identify strengths and weaknesses of graphic, electronic, and live communications;

IC1.02G

- operate equipment safely;

IC1.03G

- apply health and safety standards when using products and materials;

IC1.04G

- identify career opportunities and develop appropriate education plans;

IC1.05G

- demonstrate knowledge of ethical standards and policies for communications technology.

Unit 1: Graphic Design and Production

Time: 22 hours

Unit Description

This unit introduces students to the technology to communicate graphically through desktop-publishing systems and software, print production methods, and specialty printing. Students learn and apply the elements and principles of design by creating thumbnail sketches, rough sketches, comprehensive layouts, and camera-ready artwork to produce printed materials. Safety, print media influences, careers, and educational planning are explored.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations: TFV.01G, TFV.03G, TFV.04G, SPV.01G, SPV.03G, SPV.04G, ICV.01G, ICV.02G, ICV.03G.

Specific Expectations: TF1.01G, TF1.02G, TF1.03G, TF1.04G, SP1.01G, SP1.02G, SP1.03G, SP1.04G, IC1.01G, IC1.02G, IC1.03G, IC1.04G, IC1.05G.

Activity Titles (Time + Sequence)

Activity 1	Personal Stationery	330 minutes
Activity 2	Community Newsletter	330 minutes
Activity 3	Package Design – Videocassette Case	330 minutes
Activity 4	Specialty Printing Processes	330 minutes

Prior Knowledge Required

All activities in this unit require students to employ a variety of knowledge and skills. Students must demonstrate knowledge of shop safety when using tools and equipment, and handling chemicals and materials. Successful completion of the memo pad activity from the Integrated Technologies, Communications unit is preferred but not required.

Unit Planning Notes

- The activities in this unit require computer graphics knowledge of hardware, peripherals, and software along with the knowledge and skills of operating production equipment.
- The activities depend on the equipment that is available in the school. To ensure that activities are authentic, this unit should be adapted to technology that is available locally.
- Teachers need to be familiar with the communications processes and systems required to produce printed products. Activities explore graphic reproduction methods including desktop publishing, CAD programs, computer graphics, and, where available, offset and specialty printing processes.
- Schools with offset printing capabilities may convert camera-ready copy to printing masters and produce printed copies using offset duplicators.
- Schools without offset printing capability may print using laser and/or colour printers. In addition, local printing establishments may produce the designed work.
- Some designs may require the purchase of pre-printed stationery packages (business cards, envelopes, letterhead, and labels) to attain the desired finished effect.
- Students must observe copyright laws and the correct use of any copyrighted materials.
- Teachers address safety/censorship on the Internet by implementing School Board policies on appropriate student use and access to Internet services while gathering activity-specific resources.

-
- The teacher must stress the correct and safe use of all equipment and materials throughout the activities.
 - The teacher should investigate the availability and accessibility of software at the school or through the board that is suitable for each activity.
 - Teachers require the knowledge and skills needed for the design and production of graphic products.
 - Teachers should investigate potential cross-curricular connections with other subjects and community links for the activities.
 - Each activity enables students to focus on specific career options and provide insights into the skills required for related professions.
 - Teaching/learning strategies that allow for career links in the unit activities should be investigated (e.g., job shadowing, career and education research, field trips, and guest speakers).

Teaching/Learning Strategies

- Graphic design and production combines a variety of academic and applied learning strategies, including independent and group work, problem solving, co-operation, communication, time management, brainstorming new ideas, and presenting.
- Teachers provide their expertise, material, equipment, and resources to complete the task.
- The student-centred, activity-based mode of delivery enables students to develop individual and group skills.
- Throughout all activities, the teacher:
 - monitors and observe all student/group activity;
 - speaks with students/groups regularly to provide help when problems arise;
 - reviews project expectations; and
 - modifies project activities to reflect available equipment.

Assessment and Evaluation

- Assessment is a daily process that may include: daily/weekly log/journal entries, project portfolio, regular practical and theory tests and/or quizzes, activity worksheets and exercises, project assessment criteria, student/group presentations, conferences, self and/or peer critiques, and activity rubrics.

Resources

Computers (with CAD program, *CorelDRAW*[™], and/or computer software capable of manipulating multiple pages, text, and graphics) and peripherals (e.g., digital camera, scanner, laser and/or colour printer).

Schools with printing equipment and darkroom facility require a process camera and/or a direct photographic platemaker, platemaking equipment for surface plates and to expose sensitized screen frames, sheet-fed offset press, and guillotine paper cutter.

Consumable materials include printer toner; bond, cover, and index paper in a variety of colours and sizes; darkroom film and processing chemicals; printing plates and processing chemicals; and pressroom solvents, inks, and supplies. Pressroom solvents should be environmentally friendly.

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Samples of printed stationery, community and marketing newsletters, packages/videocassette cases, and T-shirts

Books

- Barden, Robert and Michael Hacker. *Communication Technology*. Canada: Nelson Canada, 1990. ISBN 0-8273-3225-4
- Braidwood, Barbara and Richard Cropp. *Writing Magazine and Newspaper Articles*. USA: Self Council Press, 1999. ISBN 1-55180-193-0
- Broekhuizen, Richard. *Graphic Communications*. USA: Glencoe Macmillan/McGraw-Hill, 1995. ISBN 0-02-676305-2
- Chambers, Karen. *Print's Best Letterheads & Business Cards 5*. USA: RC Publications, Incorporated, 1998. ISBN 1-883915-05-8
- Gray, Bill and Jane Van Milligen. *Tips On Making Greeting Cards*. New York, NY: Design Press, 1991. ISBN 0-8306-0595-9
- Guptill, W. *Packaging Design*. ISBN 0823065022
- Hine, M. and M. Pietsch. *The Total Package: The Secret History and Hidden Meanings of Boxes, Bottles, Cans, and other Persuasive Containers*. ISBN 0316365467
- Ingram, Roy and Steve Kennedy. *The News*. Toronto: Copp Clark Pitman Ltd., 1989. ISBN 0-7730-4973-8
- Johnson, Charles. *Communication Systems*. USA: Goodheart-Wilcox Co., Inc., 1992. ISBN 0-87006-961-6
- Karsnitz, John. *Graphic Arts Technology*. USA: Delmar Publishers Inc., 1984. ISBN 0-8273-1828-6
- Mayers, H., and M. Lubliner. *The Marketer's Guide to Successful Package Design*. ISBN 0-0844234389
- McCain, Ted D.E. *Designing for Communication: The key to successful desktop publishing*. Eugene, Oregon: ISTE Publications, 1992. ISBN 1-56484-012-3
- Parsons, Bill. *Pagemaker Graphic Design with Pagemaker Version 5.0*. USA: Delmar Publishers Inc., 1994. ISBN 0-8273-6451-2
- Purst, Zeke. *Graphic Communication, The Printed Image*. USA: Goodheart-Wilcox Co., Inc., 1989. ISBN 0-87006-961-6
- Sanders, Mark. *Communication Technology Today and Tomorrow*. Mission Hills, California, USA: Glencoe/McGraw-Hill. ISBN 0-02-677111-X
- Sandmann, Kathy. *T-Shirt Designs*. USA: Sewing Productions, Incorporated, 1994. ISBN 0-93-7679011
- Simone, Luisa. *Publisher By Design*. Redmond Washington, USA: Microsoft Press, 1994. ISBN 98052-6399
- Taylor, Carol. *The Great T-Shirt Book & Kit: Make Your Own Spectacular, One of A Kind Designs*. USA: Sterling Publishing Company, 1992. ISBN 0-80-698798-0
- White, Alex. *How to Spec Type*. USA: Watson-Guptill Publications, 1987. ISBN 0-8230-2473-3
- Woodward, Cheryl. *Starting and Running a Successful Newsletter or Magazine*. USA: 1998. ISBN 0873374614.

Videos

- Step-by-Step Video. *Graphic Design: 1 & 2*. Step-by-Step Video, 1989. 45 min.
- Step-by-Step Video. *Paste-Up: 1 & 2*. Step-by-Step Video, 1988. 45 min.

Web Sites

Corel Corporation web site - Contains information about *CorelDRAW™*

<http://www.corel.com/index.htm>

Desktop publishing - Site contains helpful links to graphic utilities

<http://www.desktoppublishing.com/linkus.html>

Graphic Arts Technical Foundation - Site contains educational information on the graphic arts

<http://www.gatf.org>

A Manager's Guide to Newsletters

www.Managersguide.com/Chap1.htm

Newsletter Publishing

www.NewsletterOnline.com

Company Newsletter tips

www.companynewsletters.com/newsread.htm

Internet tutorials

www.cadsoftware.com

T-shirt Design site

www.haines2u.com

T-shirt Designs and Screenprinting

www.mirrorimage.com

T-shirt Designs

<http://www.t-shirtstudio.com>

T-shirt Designs

www.t-shirtshopper.com

Activity 1: Personal Stationery

Time: 330 minutes

Description

Students apply design, composition, and typographical principles to produce personal stationery products such as business cards, letterhead, envelopes, notepaper, labels, and greeting cards. They learn to prepare camera-ready art for print production using hand and computer graphics techniques. Using a variety of print reproduction methods, students safely achieve the desired finish of their designed work. A variety of printing related careers are identified and explored during the many phases of project completion.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.01G - identify and describe the techniques used to produce print media;

TFV.04G - demonstrate an understanding of electronic communication equipment;

SPV.01G - prepare camera-ready artwork for print and post-production;

SPV.04G - use computer graphics software competently;

ICV.02G - observe safety rules and regulations;

ICV.03G - identify career opportunities in the communications field.

Specific Expectations

TF1.01G - explain the techniques used to produce technical drawings and illustrations;

TF1.02G - identify basic composition and typographic principles;

TF1.03G - describe the characteristics of materials used in print production;

TF1.04G - describe printing and finishing processes;

SP1.01G - produce technical drawings and illustrations for printing;

SP1.02G - apply composition and typographic principles to produce camera-ready artwork for print production;

SP1.03G - produce printed copies using a variety of reproduction methods;

SP1.04G - apply finishing operations to printed products;

IC1.02G - operate equipment safely;

IC1.03G - apply health and safety standards when using products and materials;

IC1.04G - identify career opportunities and develop appropriate education plans.

Planning Notes

- This activity combines computer graphics knowledge and the technical procedures performed to produce printed products.
- Teachers acquire and present a selection of business cards, letterhead, labels, envelopes, notepaper, and greeting cards to demonstrate the appeal and widespread use of personal stationery.
- An introduction and overview of how drawings and layouts use the principles of composition and typography offers a good practical beginning.
- Students must observe copyright laws and the correct use of any copyrighted materials.
- Student work throughout this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Teachers should develop design criteria based on available equipment and resources.
- Schools with pre-press, press, and finishing equipment can convert camera-ready copy to printing masters and produce printed copies using offset presses. Schools without offset printing capability may print using laser and/or colour printers.
- Some designs may require the purchase of pre-printed stationery packages for specific printers (e.g., business cards) to attain the desired finished effect.
- Safety sheets and step-by-step instructions for operating equipment should be reviewed to ensure students know and apply safe operation techniques.

Prior Knowledge Required

- Students should understand the computer operations and the software needed to produce their project.
- Students should be able to use drafting instruments to produce manual layouts and should have mastered text entry and manipulation of images in the appropriate software.
- Students must be aware of general classroom safety and the safe use of hand and machine tools.

Teaching/Learning Strategies

- Teachers introduce samples of personal stationery and discuss how they were designed and finished. Through the examples, teachers help students develop ideas of potential stationery to design.
- Design teams could be formed, e.g., one team designs personal business cards, another designs greeting cards. Each design team then generates the design criteria and specifications for its chosen stationery item.
- Students determine appropriate type style, type size, and the best arrangement of all design elements within the design space from the supplied samples.

-
- Teachers itemize and explain each layout stage a printed product undergoes:
 - a variety of thumbnail sketches;
 - a rough sketch to size;
 - a traced comprehensive layout showing exact position of each printing element;
 - camera-ready mechanical.

Rough sketches and the traced comprehensive may be omitted when generating layouts using computer graphics software.
 - Establish design review group sessions aimed at creating a positive environment for sharing ideas and concepts. Students should be encouraged to critique each other's work. The aim of each session is to gather a variety of views on how to enhance the material being produced, to proof read work to avoid errors, and to ensure that ethical standards and policies of communications technology are met.
 - Determine the reproduction method to be used (colour desktop printer or offset printing).
 - For desktop reproduction, outline the correct page setup, layout, and appropriate colour and/or black and white layout to be used by the student.
 - For offset reproduction (if available), outline the pre-press operations required to convert camera-ready copy to film, stripping the masking sheet, and plate-making.
 - Describe the printing press set-up and safe operation (press paper set-up, mounting the plate, operating the press to produce a print, and making adjustments to print position and quality).
 - Emphasize the safety procedures for every operation from pre-press to finishing. Each technical step requires careful study and preparation of the facility. Printing of the plate requires the careful and safe handling of sensitive equipment.

Assessment/Evaluation Techniques

- Students demonstrate proper use of computers and software effectively (Appendix 1.1b).
- Students produce a minimum of four different ideas in their thumbnail sketches. All thumbnail sketches should meet the criteria and agree with the student's proposals.
- Students' critiques should demonstrate careful thought and offer positive, constructive direction.
- The rough sketch should demonstrate a resemblance to the most promising thumbnail sketch.
- The comprehensive layout should reflect the exact form, style, and size of type and the shape and position of all other printing elements.
- Camera-ready mechanical layouts must be error-free and contain all necessary trim, register, and centrelines. Cover sheet should be attached to protect elements from dirt.
- Students using the desktop reproduction method of production are evaluated on their correct choice and use of layout design, typography, colour, graphics, and design principles.
- Students assemble a project portfolio for submission containing the layout sheets (thumbnail sketches, rough sketch, comprehensive layout, and camera-ready mechanical layout).
- A written technical report outlining the production overview of printed communications and a listing of career opportunities concludes this activity.

Schools with offset printing capability (Appendix 1.1a)

- Produce a line negative from the camera-ready mechanical layout containing minimal pinholes.
- Strip the line film on to a masking sheet and repair film flaws. Film flaws must be repaired with the proper materials. Film must be attached (stripped) in position on the masking sheet to produce a printing plate.
- Expose prepared flat onto a printing plate and carefully process the plate for the printing stage.
- Printing of the plate requires the careful and safe handling of sensitive equipment. Students must observe safety and operating procedures as outlined by the machine manufacturer.
- Printing image must be positioned on the paper as planned on the mechanical layout, all adjustments to be made when the printing press is stopped.

-
- Copies are printed with consistent ink density.
 - Paper waste should be kept to minimum.
 - Printing press is cleaned after use; printed sheets are carefully stored.
 - Printed copies are finished the day after printing (cut, folded, or stapled).
 - Portfolio should also contain the film or the stripped masking sheet and a copy of the finished product.

Accommodations

- Students with special needs are accommodated by using design templates found in most computer graphics programs.
- Students requiring assistance in handling materials and sensitive equipment may benefit from peer assistance.
- All students should be encouraged to share their knowledge and skills as peer mentors for software programs, and supervise and guide other students during complex technical procedures.
- Layout stages of the printed product may be omitted or expanded to accommodate different learners.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Various samples of printed stationery

Books

Barden, Robert and Michael Hacker. *Communication Technology*. Canada: Nelson Canada, 1990. ISBN 0-8273-3225-4

Broekhuizen, Richard. *Graphic Communications*. USA: Glencoe Macmillan/McGraw-Hill, 1995. ISBN 0-02-676305-2

Chambers, Karen. *Print's Best Letterheads & Business Cards 5*. USA: RC Publications, Incorporated, 1998. ISBN 1-883915-05-8

Gray, Bill and Jane Van Milligen. *Tips On Making Greeting Cards*. New York, NY: Design Press, 1991. ISBN 0-8306-0595-9

Johnson, Charles. *Communication Systems*. USA: Goodheart-Wilcox Co., Inc., 1992. ISBN 0-87006-961-6

Karsnitz, John. *Graphic Arts Technology*. USA: Delmar Publishers Inc., 1984. ISBN 0-8273-1828-6

Purst, Zeke. *Graphic Communication, The Printed Image*. USA: Goodheart-Wilcox Co., Inc., 1989. ISBN 0-87006-961-6

White, Alex. *How to spec Type*. USA: Watson-Guptill Publications, 1987. ISBN 0-8230-2473-3

Videos

Step-by-Step Video. *Graphic Design: 1 & 2*. Step-by-Step Video, 1989. 45 min.

Step-by-Step Video. *Paste-Up: 1 & 2*. Step-by-Step Video, 1988. 45 min.

Web Sites

Corel Corporation web site

<http://www.corel.com/index.htm>

Contains information about *CorelDRAW™*

Desktop publishing
<http://www.desktoppublishing.com/linkus.html>
Site contains helpful links to graphic utilities
Graphic Arts Technical Foundation
<http://www.gatf.org>
Site contains educational information on the graphic arts

Activity 2: Community Newsletter

Time: 330 minutes

Description

As an introduction to graphic design and production, students use the design process to produce a newsletter exploring an issue important to their school community. Using layout procedures (thumbnail and rough sketches), students demonstrate an understanding of design principles in the manipulation of graphic and text objects, typography, and colour. Through image editing, drawing, and page layout applications, students develop familiarity with computer hardware and peripherals as well as how computers process text and image files.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.01G – identify and describe the techniques used to produce print media;
TFV.03G – identify and describe the processes of capturing still images;
TFV.04G – demonstrate understanding of electronic communication equipment;
SPV.01G – prepare camera-ready artwork for print and post-production;
SPV.03G – compose, capture, and process still images;
SPV.04G – use computer graphics software competently;
ICV.01G – explain the benefits, risks, and ethics associated with communications technology;
ICV.02G – observe safety rules and regulations;
ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.01G – explain the techniques used to produce technical drawings and illustrations;
TF1.02G – identify basic composition and typographic principles;
TF1.03G – describe the characteristics of materials used in print production;
TF1.04G – describe printing and finishing processes;
SP1.01G – produce technical drawings and illustrations for printing;
SP1.02G – apply composition and typographic principles to produce camera-ready artwork;
SP1.04G – use computer graphics software competently for print production;
SP1.03G – produce printed copies using a variety of reproduction methods;
SP1.04G – apply finishing operations to printed products;
IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communications;
IC1.02G – operate equipment safely;
IC1.04G – identify career opportunities and develop appropriate education plans;
IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- Student work in this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Teachers should have samples of various types of typography and various digital images and clipart to show students.
- Teachers need to show students how typography and graphic images can be used effectively.
- Teachers should have samples of different types of newsletters, including marketing and community newsletters.
- Teachers need to make students aware of copyright laws and correct use of copyrighted materials.
- Teachers need to provide the students with a computer, scanner, digital camera, and software pending availability to produce their newsletter.
- Students should have an understanding of the design process and layout procedures (thumbnail sketches, rough sketches, comprehensive layout, and mechanical layout).
- Cross-curricular connections include Social Science and English.
- Members of the community may provide students with some insights into career opportunities and issues.

Prior Knowledge Required

- An understanding of computer operations and software programs required for production of a newsletter, including how to open, save, cut, paste, and print files and graphic images.
- An understanding of the principles of design and how they may be applied to the project.

Teaching and Learning Strategies

- Teachers explain and demonstrate the fundamental concepts underlying newsletter creation.
- Teachers direct students to research sources when more information is required.
- Teachers review project expectations.
- Students use a case study approach to research the various types of available newsletters.
- Students have class discussion about the issues that might be included in their project.
- Students may get involved in a small group to decide what might be included in the production.
- Students conference with the teacher during project development.
- Teachers review the principles of design appropriate for the project and help students use software.
- Students apply problem solving and the design process to make appropriate decisions on their projects.
- Teachers relate the proper use of handling text and graphics.
- Students work independently to explore and research the topics they want to investigate, including career opportunities.

Assessment/Evaluation Techniques

- Each student is evaluated on each layout stage of this project.
- The selection of appropriate material is evaluated.
- Correct grammar and spelling is checked.
- The correct choice and use of layout, fonts, and graphics is evaluated.
- How well the student conveys the message of the newsletter is examined.
- Students have the opportunity to assess the newsletter and to reflect in a journal some of the positive and negative experiences they had while designing the project.
- Students are given anecdotal comments with suggestions on how they may improve their newsletter.

Accommodations

- Students can use the auto-content wizards to help them produce the newsletter.
- Students with special needs may rewrite their newsletter after being checked by the teacher.
- Peer tutoring is available to those students who may need extra help.
- Student-to-student discussion and teacher-to-student conferencing occurs throughout the project.
- Flexible timelines are given to those who require them.
- Students with special needs are allowed to use more graphics in their projects.

Resources

Samples of community and marketing newsletters

Books

Braidwood, Barbara and Richard Cropp. *Writing Magazine and Newspaper Articles*. USA: Self Council Press, 1999. ISBN 1-55180-193-0

Ingram, Roy and Steve Kennedy. *The News*. Toronto: Copp Clark Pitman Ltd., 1989. ISBN 0-7730-4973-8

McCain, Ted D.E. *Designing for Communication. The key to successful desktop publishing*. Eugene, Oregon: ISTE Publications, 1992. ISBN 1-56484-012-3 (Chapters 1-7)

Parsons, Bill. *Pagemaker Graphic Design with Pagemaker Version 5.0*. USA: Delmar Publishers Inc., 1994. ISBN 0-8273-6451-2 (Units 1, 2, 3)

Sanders, Mark. *Communication Technology Today and Tomorrow*. Mission Hills, California, USA: Glencoe/McGraw-Hill. ISBN 0-02-677111-X (Chapters 1-6 and 13)

Simone, Luisa. *Publisher By Design*. Redmond, Washington, USA: Microsoft Press, 1994. ISBN 98052-6399 (Chapter 20)

Woodward, Cheryl. *Starting and Running a Successful Newsletter or Magazine*. USA: 1998. ISBN -0873374614

Web Sites

A Managers Guide to Newsletters

<http://www.Managersguide.com/Chap1.htm>

Newsletter Publishing

<http://www.NewslettersOnline.com>

Company Newsletter tips

<http://www.companynewsletters.com/newsread.htm>

Activity 3: Package Design/Videocassette Case

Time: 330 minutes

Description

Students investigate the components of package design and fabrication. They apply computer and manual drafting techniques to design and draft a videocassette case complete with folds and tabs. They develop an understanding of drafting techniques including orthographic projection and drawing to scale. Students design suitable graphics for all sides of the case using computer graphics software. The design of the case is an excellent accompanying activity for any of the short audio-video (Unit 2) and short animation (Unit 3) activities.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.04G – demonstrate understanding of electronic communication equipment;

SPV.04G – use computer graphics software competently;

ICV.03G – identify career opportunities in the communication field.

Specific Expectations

TF1.01G – explain the techniques used to produce technical drawings and illustrations;

TF1.02G – identify basic composition and typographic principles;

SP1.01G – produce technical drawings and illustrations for printing;

IC1.04G – identify career opportunities and develop appropriate education plans;

IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- Teachers should prepare quick reference sheets for *CorelDRAW™* and the computer-aided drafting program to be used.
- Teachers need to prepare review handouts on manual technical drawing (e.g., how to use the instruments, object and construction lines, and scale). Teachers start with manual drafting review and techniques (pencil, scale or ruler, paper) to organize the activity and progress to computer-aided drafting and computer graphics (*CorelDRAW™*).

Prior Knowledge Required

- Drafting to scale – Students should be able to draft to scale using pencil and ruler.
- Drafting – Students have mastered some aspects of CAD software in previous activities and in Integrated Technologies.
- Computer Graphics – Students have mastered some aspects of graphics software in previous activities and in Integrated Technology.
- Brainstorming

Teaching/Learning Strategies

- Teachers should introduce samples of design packaging and discuss how the packages were designed and then take the packages apart to show folds, tabs, and glue seams. Show corresponding samples of video-cassette covers and outline the process of how they were developed.
- Introduce the concepts of establishing shape, size, and proportions for package design. Teachers should discuss and review the elements of technical drawing and of development drawings for packaging. Review software use for drafting and computer graphics.
- The teacher introduces the criteria for this activity (Appendix 1.3a).

-
- Students work through packaging exercises and design their videocassette package.
 - Students bring packages into the classroom and try to draw them with all tabs and folds without taking them apart. Packages are taken apart to see how accurately they were sketched (if not, students re-draw the package).
 - Students then take two other three dimensional objects and draw the development drawing of the object (scale 1:1) on cardboard, adding any tabs and glue seams required, and put them together.
 - Upon completion of the packaging exercises, students design, draft (by hand or on computer), and fabricate a videocassette case complete with graphics on all sides.
 - Teacher meets with students throughout to deal with questions and/or problems that arise.
 - Students are encouraged to share their ideas with other students.
 - Teacher-student conferencing leads to final approval of package design.
 - Students lay out, assemble, and add computer graphics.

Assessment/Evaluation Techniques

- Skills students developed on the computer while learning the software is evaluated.
- Summative assessment of equipment worksheets and quizzes.
- Each student is evaluated on the quality of the thumbnail sketches and technical drawings they developed for their design of the videocassette cover.
- Roving conferencing.
- Formative assessment of each student's ability to work co-operatively in group situations.
- Students assess the contribution of the individual group members by completing daily log sheets.
- Self, peer, and group assessment sheets are filled out at the end of the project.
- The final product is assessed in terms of the correct use of principles of design, layout, colour, typography, and graphics (Appendix 1.3b).

Accommodations

- Students may work alone or as a member of a group.
- Students may manually draft packages, hand draw graphics, or use prefabricated cassette covers to add graphics.
- Students should be encouraged to develop more detailed cassette covers with tabs and lock and to add computer graphics (such as GIFs that they have designed as backgrounds and as part of an animation or video project).
- Students should be encouraged to develop other packages on computer and to act as peer mentors for software programs.
- Students with special needs can be given appropriate timelines for completion of this activity.
- Student-to-student discussion and teacher-to-student conferencing should occur throughout the activity.
- Peer tutoring is given to those students who need extra help.

Resources

General

Teacher-developed resources including all handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Various samples of packaging designs

Books

Guptill, W. *Packaging Design*. ISBN 0823065022

Hine, M. and M. Pietsch. *The Total Package: The Secret History and Hidden Meanings of Boxes, Bottles, Cans, and other Persuasive Containers*. ISBN 0316365467

Mayers, H. and M. Lubliner. *The Marketer's Guide to Successful Package Design*. ISBN 0-0844234389

Sanders, M. *Communication Technology- Today and Tomorrow*. Glencoe/McGraw-Hill.
ISBN 0-02-677110-1

Web Site

Internet tutorials

<http://www.cadsoftware.com>

Activity 4: Specialty Printing Processes

Time: 330 minutes

Description

Students design and print garments and items using the photo-direct and/or heat transfer method of screen-printing. They apply typography and design principles to generate designs using hand and computer techniques. Students learn to convert camera-ready copy for the generation of image carrier stencils. Students develop printing techniques to print various garments, T-shirts, sweatshirts, bags, or a mouse pad by using a heat transfer, screen-printing, or computer-controlled cutting machine. Throughout the activity, students observe safety regulations in the safe handling of equipment.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.01G - identify and describe the techniques used to produce print media;

TFV.03G - identify and describe the processes of capturing still images;

TFV.04G - demonstrate understanding of electronic communication equipment;

SPV.01G - prepare camera-ready artwork for print and post-production;

SPV.03G - compose, capture, and process still images;

SPV.04G - use computer graphics software competently;

ICV.01G - explain the benefits, risks, and ethics associated with communications technology;

ICV.02G - observe safety rules and regulations;

ICV.03G - identify career opportunities in the communications field.

Specific Expectations

TF1.01G - explain the techniques used to produce technical drawings and illustrations;

TF1.02G - identify basic composition and typographic principles;

TF1.03G - describe the characteristics of materials used in print production;

TF1.04G - describe printing and finishing processes;

SP1.01G - produce technical drawings and illustrations for printing;

SP1.02G - apply composition and typographic principles to produce camera-ready artwork for print production;

SP1.03G - produce printed copies using a variety of reproduction methods;

SP1.04G - apply finishing operations to printed products;

IC1.01G - identify strengths and weaknesses of graphic, electronic, and live communications;

IC1.02G - operate equipment safely;

IC1.03G - apply health and safety standards when using products and materials;
IC1.04G - identify career opportunities and develop appropriate education plans;
IC1.05G - demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- Student work in this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Teachers should provide students with various sample styles of typography and digital images that might be used. Teachers need to make students aware of the typographical effects available in design software and how they can be applied to a graphic to create a good design.
- Students must observe copyright laws and the correct use of copyrighted materials.
- The equipment and software needed to complete this activity include:
 - heat transfer machines;
 - transfer printer;
 - vinyl cutting machine;
 - digital camera;
 - scanner;
 - colour printer and software;
 - screen frames;
 - textile inks;
 - ink squeegee;
 - the chemistry to work with the photo-direct screen printing method.
- Cross-curricular connections include English, Business Studies, and Visual Arts.
- Students are expected to keep a daily log recording notes of their accomplishments and outlining any future needs that this activity requires.

Prior Knowledge Required

- Students need to understand safe and proper usage of the equipment needed to produce their design.
- Students must be able to use software to create their design.
- Students understand the principles of design and how to apply them.

Teaching and Learning Strategies

- Show students samples of garments, bags, and mouse pad designs.
- Group students who may wish to work together on a common theme.
- Students investigate the existing specialty printing marketplace and discuss with the class, or in small groups, possible design alternatives.
- Teachers promote the use of the design process to create unique layouts.
- Students draw several thumbnail sketches for their specialty printing design.
- Using the Socratic method, teachers provide lessons on the safe and proper use of all the equipment, software, materials, and chemistry required for completion of this activity.
- Students are directed to various software tutorials to develop skills in file and graphic manipulation.
- Through discussion with the teacher, students discuss their design solutions and implement potential design modifications.
- Students explore the possibility of creating a design that reflects such issues as anti-discrimination, equity/social justice issues, conflict resolution/violence prevention, or other issues that make a positive social statement.

-
- Teachers conference with students regularly to critique the design and discuss potential design solutions and problems that may occur with both software and equipment.
 - Students investigate the existing T-shirt marketplace. They may bring in their own T-shirt or look at samples provided by the teacher.

Assessment/Evaluation Techniques

- Students are assessed on how well they used the design process and technology to create their finished design.
- Formative assessment of each student's ability to work co-operatively in group situations:
 - students assess the contribution of individual group members by completing daily log sheets;
 - self, peer, and group assessment sheets are filled out at the end of the project.
- Summative assessment of equipment worksheets, tests, and quizzes.
- Summative assessment of the concepts and techniques used in this activity.
- Each student is evaluated on the thumbnail sketches they develop for their T-shirt design.
- Skills the students develop on the computer while learning the software are evaluated.
- Students are assessed on how well they used and understood the design and print process.
- The final product is evaluated in terms of how well the student was able to accomplish the designed T-shirt. The overall layout design, typography, colour use, safety, and the effective message are evaluated.

Accommodations

- Teachers are expected to be acquainted with the students' Individual Education Plans and unique learning characteristics and make the necessary accommodations.
- Students with special needs may be given appropriate timelines for completion of this activity.
- Peer tutoring is made available to those students who need extra help.
- Student-to-student discussion and teacher-to-student conferencing occurs throughout the project.
- Peer tutors help students with special needs handle equipment.
- For enrichment, students may use this technology to explore an entrepreneurial venture for themselves, someone in the community, for another subject area, or for the school.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Samples of T-shirt designs

Books

Pedersen, Martin. *Graphic T-Shirt Design 2*. USA: Graphics, USA, 1998.

Sanders, Mark. *Communication: Technology Today and Tomorrow*. USA: Glencoe/McGraw-Hill, 1991. ISBN 0-02-677110-1

Sandmann, Kathy. *T-Shirt Designs*. USA: Sewing Productions, Incorporated, 1994. ISBN 0-93-7679011

Taylor, Carol. *The Great T-Shirt Book & Kit: Make Your Own Spectacular, One of A Kind Designs*. USA: Sterling Publishing Company, 1992. ISBN 0-80-698798-0

Web Sites

T-Shirt Design site

<http://www.haines2u.com>

T-shirt Designs and Screenprinting

<http://www.mirrorimage.com>

T-shirt Designs

http: <http://www.t-shirtstudio.com>

T-shirt Designs

<http://www.t-shirtstudio.com>

T-shirt Designs

<http://www.t-shirtshopper.com>

Appendix 1.1a

Offset Printing Assessment/Evaluation Guidelines

Each of these technical steps requires careful study and preparation of the facility.

- Mechanical layouts must be error-free and contain all necessary trim, register, and centrelines.
- Cover sheet should be attached to protect elements from dirt.
- Pre-press image conversion includes the production of a line negative from the camera-ready mechanical, film repairs and stripping the mask, and plate-making.
- Line negatives should be of the proper density and contain minimal pinholes.
- Film flaws must be repaired with the proper materials.
- Film must be attached (stripped) in position on the masking sheet to produce a printing plate.
- Printing of the plate requires the careful and safe handling of sensitive equipment.
- Students must observe safety and operating procedures as outlined by the machine manufacturer.
- Printing image must be positioned on the paper as planned on the mechanical layout; all adjustments are to be made when the printing press is stopped.
- Copies are printed with consistent ink density and minimum waste of paper.
- Printing press is cleaned after use and printed sheets are carefully stored. Printed copies are finished the day after printing (cut, folded, stapled, etc.).
- The film or the stripped masking sheet and a copy of the finished product are to be included in portfolio.

Appendix 1.1b

Personal Stationery Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.01G, TF1.01G, TF1.02G, TF1.03G, TF1.04G Identify and describe the techniques used to produce print media	- is able to identify and describe few of the techniques used to produce print media	- is able to identify and describe some of the techniques used to produce print media	- is able to identify and describe most of the techniques used to produce print media	- is able to identify and describe all of the techniques used to produce print media
Thinking/Inquiry TFV.04G Demonstrate understanding of electronic communication equipment	- demonstrates limited understanding of electronic communication equipment	- demonstrates moderate understanding of electronic communication equipment	- demonstrates considerable understanding of electronic communication equipment	- demonstrates a thorough understanding of electronic communication equipment
ICV.03G, IC1.04G Identify career opportunities and develop appropriate education plans	- identifies career opportunities and develops an appropriate education plan with limited effectiveness	- identifies career opportunities and develops an appropriate education plan with moderate effectiveness	- identifies career opportunities and develops an appropriate education plan with considerable effectiveness	- identifies career opportunities and develops an appropriate education plan with a high degree of effectiveness
Communication SPV.01G Prepare camera-ready artwork for print and post-production	- communicates graphic information with limited clarity	- communicates graphic information with moderate clarity	- communicates graphic information with considerable clarity	- communicates graphic information with a high degree clarity
Application SPV.04G, SP1.01G, SP1.02G, SP1.03G, SP1.04G Use computer graphics software competently	- uses computer graphics software with limited effectiveness	- uses computer graphics software with moderate effectiveness	- uses computer graphics software with considerable effectiveness	- uses computer graphics software with high degree effectiveness
ICV.02G, IC1.02G, IC1.03G Observe safety rules and regulations	- operates equipment safely and correctly only with supervision	- operates equipment safely and correctly only with some supervision	- operates equipment safely and correctly	- demonstrates and promotes safe and correct procedures when operating equipment

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 1.2a

Principles of Design Handout

1. Balance

All elements are placed in a way that gives an impression of steadiness. There are two types of balance:

- *Formal Balance* is achieved when a line drawn through the centre of the design would create two halves that are similar to one another or symmetrical. Formal balance gives a sense of dignity, strength, and security.
- *Informal Balance* is a balance of objects that may look different but have equal weight to the eye. It allows for a more flexible placement of message elements in the layout. The elements are not symmetrically centred, but must be placed so that a state of equilibrium exists.

2. Rhythm

Rhythm is repetition. In graphic design, rhythm occurs when a certain element is repeated. It can add movement to a design. It looks like something is happening and leads the reader's eye in a desired direction. Good rhythm helps the reader maintain interest in the design.

3. Proportion

Proportion is the size relationship of one part to another. By itself, the size of an object has little meaning. Only by comparing it to something else can we say it's too big or too small. In graphic design the *proportions* of one element to another should be correct. Although some elements may be larger or smaller, the effect should be pleasing. To achieve good proportion in a layout, the designer must regulate the space assigned each element. By achieving this, the mathematical relationship that exists between each element is not readily observed by the reader.

4. Contrast

The purpose of contrast in design is to *create interest* in the product. Interest is typically created by change in size, shape, colour, tone, typeface, and direction. Illustrations, photos, and type can individually be varied in size and weight. The use of different text styles (bold, italic, outline, shadow, and underline) and varying font point sizes adds contrast and serves to emphasize areas or words in the message. Shape can be achieved by varying geometric shapes such as squares, rectangles, or triangles. Typically, similar shapes like squares and rectangles are grouped together. Colour affects people in different ways. Blue is the colour for sweetness. Red, yellow, and orange are warm colours. Blue, violet, and green are cool colours associated with water. Brown and green are earthy colours. Reverse image lettering is a very effective means of providing contrast in a printed message.

5. Unity

Unity is the most important principle of design. It is the quality that holds the layout together in harmony. A design that effectively and efficiently communicates the message to the audience has good unity. Unity is most affected by element shape, element position, and type style. Using several different type sizes and styles in a layout causes it to appear confusing and disorganized. To achieve unity, the relationship of one element to another in placement must be considered. Each element needs to be placed on the page in a pleasing relationship with the other elements.

Appendix 1.2a (Continued)

Principles of Design Handout

6. Variety

Variety is difference. Variety in graphic design may add interest and excitement. Good variety should be simple yet creative. One should consider the audience. The design should be appropriate to the subject matter of the printed piece. Age group affects the amount of variety you might use. The younger the audience the more variety you can use while older audiences like a more traditional look.

Whatever design principle you use in your production, good planning is necessary to avoid last-minute problems. It is the designer's responsibility to see that the publication is produced in an acceptable manner. Good design is often the result of trial and error.

The basic guidelines for *Good Design* are:

1. Consider the Audience.
2. Be Consistent.
3. Keep it Simple.
4. Avoid Static Balance.
5. Establish a Dominant Element.
6. Images and Symbols Enhance the Message.
7. Utilize White Space.

Appendix 1.2b

Community Newsletter Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.01G, TF1.02G Identifies and describes the techniques of producing print media	- demonstrates limited knowledge identifying and describing the techniques of producing print media utilizing basic composition and typographic principles	- demonstrates some knowledge identifying and describing the techniques of producing print media utilizing basic composition and typographic principles	- demonstrates considerable knowledge identifying and describing the techniques of producing print media utilizing basic composition and typographic principles	- demonstrates a high ability to identify and describe the techniques used to produce print media utilizing basic composition and typographic principles
Thinking/Inquiry SPV.01G, SPV.04G Applies principles of design and inquiry	- applies few principles of design and inquiry while using the computer and software competently	- applies some principles of design and inquiry while using the computer and software competently	- applies most principles of design and inquiry while using the computer and software competently	- applies all or almost all principles of design and inquiry while using the computer and software competently
Communication IC1.05G Communicates information	- communicates information with a limited degree of clarity and knowledge of the ethical standards and policies used in communications technology	- communicates information with some degree of clarity and knowledge of the ethical standards and policies used in communications technology	- communicates information with a considerable degree of clarity and knowledge of the ethical standards and policies used in communications technology	- communicates information with a high degree of clarity and knowledge of the ethical standards and policies used in communications technology
Application ICV.03G, IC1.01G Recognizes career opportunities in the communications technology field	- demonstrates limited ability to recognize the strengths and weaknesses of career opportunities in the communications technology field	- demonstrates some ability to recognize the strengths and weaknesses of career opportunities in the communications technology field	- demonstrates a considerable ability to recognize the strengths and weaknesses of career opportunities in the communications technology field	- demonstrates a high ability to recognize the strengths and weaknesses of career opportunities in the communications technology field

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 1.3a

Development Drawing Handout

Development Drawing

A development drawing can be described as the true shape of a flat piece of material needed to make a three-dimensional object. They are often referred to as developments.

Videocassette cases come in a variety of formats, including coloured plastic, clear plastic, and cardboard. You will create a cardboard cassette cover for one of your video projects.

Getting Started Exercise:

- Using the packages you brought to class, draw them with all tabs and folds (do not take the packages apart).
- Upon completion of your drawings, take the packages apart to see how accurately they were sketched (if not redraw the package).
- Practise with some of the other (at least two) three-dimensional objects and draw the development drawing of the object (scale 1:1) on cardboard, adding any tabs and glue seams required, and put them together.

Guidelines:

- Measure a videocassette to understand exactly how big your package needs to be.
- Develop some rough drawings of how you would like the package to be shaped and how the cassette is taken out of the case.
- Draft the cassette case development drawing (by hand or on computer), showing all tabs, folds, and glue seams using proper drafting conventions.
- Create thumbnail sketches of the graphics for each side of the cassette case. (You must have graphics on all sides.)
- Create your graphics using computer software. (You may scan them into the computer but they must be original images, not copyrighted material.)

Put It All Together:

- Print out your drafting and graphics.
- Lay out the draft plan on bristol board and cut out with scissors or X-acto knife.
- Fold all tabs neatly (use a ruler) and glue together ensuring that edges are straight.
- Make sure that the videocassette fits into case (if not redo) before adding graphics.
- Glue computer graphics onto cassette cover.

Hand In:

- All drafting and sketching (hand-drawn and computer-generated).
- Your final videocassette cover with graphics on all sides.

Appendix 1.3b

Package Design Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TF1.01G, TFV.01G Produces technical drawings and illustrations	- demonstrates limited ability to identify, describe, and explain the techniques used to produce technical drawings and illustrations	- demonstrates some ability to identify, describe, and explain the techniques used to produce technical drawings and illustrations	- demonstrates considerable ability to identify, describe, and explain the techniques used to produce technical drawings and illustrations	- demonstrates a high ability to identify, describe, and explain the techniques used to produce technical drawings and illustrations
Thinking/Inquiry SPV.01G, SPV.04G Applies principles of design and inquiry	- applies few principles of design and inquiry while using the computer and software competently	- applies some principles of design and inquiry while using the computer and software competently	- applies most principles of design and inquiry while using the computer and software competently	- applies all or almost all principles of design and inquiry while using the computer and software competently
Communication IC1.05G Communicates information	- communicates information with a limited degree of clarity and knowledge of the ethical standards and policies used in communications technology	- communicates information with some degree of clarity and knowledge of the ethical standards and policies used in communications technology	- communicates information with a considerable degree of clarity and knowledge of the ethical standards and policies used in communications technology	- communicates information with a high degree of clarity and knowledge of the ethical standards and policies used in communications technology
Application SP1.01G Produces technical drawings and illustrations	- demonstrates limited ability to produce technical drawings and illustrations for printing	- demonstrates some ability to produce technical drawings and illustrations for printing	- demonstrates a considerable ability to produce technical drawings and illustrations for printing	- demonstrates a high ability to produce technical drawings and illustrations for printing

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Unit 2: Short Audio-Video Productions

Time: 22 hours

Unit Description

This unit introduces students to the processes of audio-video pre-production, production, and post-production. Students learn the basic shot sizes, camera movements, and special effects necessary to create a storyboard and script audio-video material. Students compose and capture images, edit audio-video footage, and apply finishing operations before presenting the production to an audience. The safe and careful handling of sensitive equipment are emphasized. Students apply ethical standards and policies in their audio-video productions while exploring education and career opportunities.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations: TFV.02G, TFV.03G, TFV.04G, SPV.02G, SPV.04G, ICV.01G, ICV.02G, ICV.03G.

Specific Expectations: TF1.05G, TF1.06G, TF1.07G, TF1.11G, SP1.05G, SP1.06G, SP1.08G, IC1.01G, IC1.02G, IC1.03G, IC1.04G, IC1.05G.

Activity Titles (Time + Sequence)

Activity 1	Chase Video	330 minutes
Activity 2	Video Biography with Still Images	330 minutes
Activity 3	Video Yearbook Segment	330 minutes
Activity 4	Infomercial/Public Service Announcement	330 minutes

Prior Knowledge Required

- A basic understanding of computer operations and use of audio-video equipment is beneficial but not necessary to complete the activities.
- Students should have a basic understanding of the principles of design and their application to video productions.
- Students must demonstrate co-operative teamwork skills to share equipment.
- Successful completion of the Integrated Technologies stop-motion activity is beneficial.

Unit Planning Notes

- Activities in this unit explore a variety of audio-video production methods as well as the safe and correct use of related equipment. The activities depend on the equipment that is available in the school. To ensure that activities are authentic, the contents of this unit should be adapted to the technology that is available locally.
- The teacher must ensure a safe work environment for all students and must stress the correct and safe use of all equipment and materials.
- The teacher should investigate the availability and accessibility of software at the school or available through the board that is suitable for each activity.
- Student work throughout this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students must comply with copyright laws and the correct use of any copyrighted materials.
- Teachers address safety/censorship on the Internet by implementing School Board policies on appropriate student use and access to Internet services while gathering activity-specific resources.

-
- Students should be reminded that their portfolios should include video projects. The portfolio, although evaluated throughout, is examined for completeness at the end of the course.
 - Teachers should investigate potential cross-curricular connections with other subjects and community links.
 - Each activity enables students to focus on career options and provides insights into the skills required for related professions.
 - Teaching/learning strategies that allow for career links in the activities should be investigated (e.g., job shadowing, career and education research, field trips, and guest speakers).

Teaching/Learning Strategies

- Throughout the unit, the teacher:
 - monitors and observes all student/group activity;
 - speaks with students/groups regularly to provide help when problems arise;
 - reviews project expectations;
 - modifies project activities to reflect equipment availability.
- Audio-video and multimedia production combines a variety of academic and applied learning strategies, including independent and group work, problem solving, co-operation, communication, time management, brainstorming new ideas, presenting, and report writing. The student-centred, activity-based mode of delivery enables students to develop individual and group skills.

Assessment and Evaluation

- Assessment is an ongoing daily process that may include: daily/weekly log/journal entries, project portfolio, regular practical and theory tests and/or quizzes, activity worksheets and exercises, project assessment criteria, student/group presentations, conferences, self and/or peer critiques, and activity rubrics.

Resources

Resources required to deliver the short audio-video production unit may include: video cameras, lighting equipment, microphones, editing hardware and software, sound mixing equipment, and necessary cabling.

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Books

Andersen, Neil and John J. Punjente, SJ. *Scanning Television: Videos for Media Literacy in Class*. Toronto: Harcourt Brace & Company, 1997. ISBN 0774701730

Hitchcock, Peter. *Videography: The Guide to Making Videos*. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. ISBN 0-9696261-0-X

Hone, Rick and Liz Flynn. *Video in Focus: A Guide to Viewing and Producing Video*. Toronto: Globe/Modern Curriculum Press, 1992. ISBN 0-888996-344-4

Hone, Rick and Liz Flynn. *Video in Focus: A Guide to Viewing and Producing Video, Teacher's Guide*. Toronto: Globe/Modern Curriculum Press, 1992. ISBN 0-888996-281-2

Kyker, Keith and Christopher Curchy. *Television Production: A Classroom Approach*. USA: Libraries Unlimited, 1993. ISBN 1-56308-101-6

Utz, Peter. *Today's Video, Equipment, Setup and Production*. USA: Prentice-Hall, 1992. ISBN 0-13925033-6

Zettl, Herbert. *Video Basics*. Toronto: Nelson Canada, 1995.

Videos

Various samples of instructional videos collected by the individual teacher.

Commercial Mania: Highlights from the Weirdest, Wackiest, Wildest Commercials of the 50's and 60's. California: Rhino Video, 1987. 30 minutes. RNVD 902

Basic Shooting. USA: Videomaker, Inc., 1994. 42 minutes.

Video Editing. USA: Videomaker, Inc., 1994. 47 minutes.

Videography: The Guide to Making Videos. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. Eight 30-minute videos.

Magazines

Digital Imaging. New York: Cygnus Publishing.

Digital Video. USA: Miller Feeman Publications.

New Media.pro. Toronto: Southam Inc.

Video Systems. USA: Interac/Primedia Publication.

VideoMaker. USA: VideoMaker Inc.

Web Sites

Digital Imaging Magazine

<http://www.digitalimagingmag.com>

A good source of digital video/editing online articles, links to user groups, and equipment information.

Digital Video Magazine

<http://www.dv.com>

A good source of digital video/editing online articles, links to user groups, and equipment information.

New Media.pro Magazine

<http://www.newmediapromagazine.com>

A good Canadian source of digital video/editing online articles, links to user groups, and equipment information.

Videomaker Magazine

<http://www.videomaker.com>

A good source of video/editing online articles, links to user groups, and equipment information.

Videonics Systems

<http://www.videonics.com>

Articles on video/editing, links to user groups, industry information, and equipment information.

Video Systems Magazine

<http://www.videosystems.com>

A good source of video/editing online articles, links to user groups, and equipment information

Activity 1: Chase Video

Time: 330 minutes

Description

This unit introduces students to the principles and techniques of video production by shooting chase sequence and creating an original soundtrack. By concentrating on shot composition and pacing, students develop a concept by creating individual shot notes, a treatment, a storyboard, and a cue sheet.

Throughout, students demonstrate co-operative and planning skills, knowledge of video equipment and camera editing, and the ability to manipulate analog and digital audio.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.02G – identify and describe the basic techniques required to produce animations and audio-video productions;

TFV.04G – demonstrate understanding of electronic communication equipment;

SPV.02G – produce audio-video and/or animated productions;

ICV.01G – explain the benefits, risks, and ethics associated with communications technology;

ICV.02G – observe safety rules and regulations;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.05G – describe various video recording techniques;

TF1.06G – outline the procedures required to create audio-video, audio, and animated productions;

TF1.07G – outline the steps used to edit audio-video, audio, and animated productions;

TF1.09G – identify various cameras and accessories and describe how to test the component parts;

SP1.05G – create various effects using video and digital camera techniques;

SP1.06G – use basic lighting techniques and props competently to accentuate audio-video productions;

SP1.08G – edit audio-video and/or animated productions;

IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communications;

IC1.02G – operate equipment safely;

IC1.04G – identify career opportunities and develop appropriate education plans;

IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- It is helpful if teachers do the project beforehand to appreciate the time required to complete various project phases and to anticipate possible difficulties.
- Organize sufficient cameras and computers for groups of three or four students.
- A character generator is used for creating titles and credits, but a computer with NTSC output can be used, as can shots of computer or hand-drawn graphics.
- To complete the soundtrack, sound-editing software is required along with royalty-free music and sound effects.
- Teachers should look on the web for sites from which resources may be downloaded or devise the means for students to record and edit their own sound resources.
- Planning materials offer connections to visual art (storyboard) and literacy (particularly the narrative structure of the treatment).

Prior Knowledge Required

- Students who have taken Integrated Technologies may have used video equipment in an animation activity.
- Others may have used a camcorder or audio equipment at some time, but this activity assumes no prior knowledge of either the concepts or techniques of video and audio production.

Teaching/Learning Strategies

- The Chase Sequence is an exercise in the manipulation of video time. It offers students the opportunity to work individually and co-operatively with the principles of video production within guidelines that promote project planning, teamwork, and skilled use of resources (Appendix 2.1a).
- The project consists of the planning and production of a two-minute video sequence employing techniques designed to lengthen and shorten screen time.
- Audio content is restricted to a dubbed soundtrack constructed from music and sound effects.
- Further restrictions on camera movement promote awareness of shot composition.
- Titles and credits are added depending on available equipment.
- Identify career opportunities as appropriate.

Activity Instructions

Introduction

The project is introduced by explaining its guidelines and objectives. Students meet objectives that include:

- manipulation of video time through the use of cutaways, reverses, and parallel action;
- employment of a design process that includes the formulation of a coherent sequence and its development through shot notes, a treatment, and a storyboard;
- demonstration of knowledge and application of shot composition and camera operations and techniques;
- use of sound editing software to create an appropriate soundtrack using a variety of sources;
- setting up of computer and video hardware to perform an audio dub;
- demonstration of safe and appropriate use of resources.

Project guidelines are structured to develop disciplined and thoughtful use of the medium. The elimination of dialogue helps to keep the stories simple and direct attention to the development of video camera skills. Guidelines include:

- length restriction of two minutes;
- in-camera editing only;
- replacement of sync sound with digitally-produced soundtrack;
- minimum of 20-30 distinct shots (20-30 storyboard frames);
- no camera movements (or zooms) except panning and tilting;
- one example of a fade-in or fade-out;
- effective development of sequence using an establishing shot, a shot to introduce characters, shots of unfolding action, and a concluding shot;
- the addition of title before and credits after the sequence.

Following the initial discussion of objectives and guidelines, examples of the project are shown. Students comment on their impressions of the work, comparing what was achieved to their understanding of the objectives. In this way, students are provided with models that clarify the project and give them a sense of the fun and achievements possible within the guidelines.

Discovering Principles and Techniques (whole class, independent, and group work)

- Students read and respond to questions from written materials covering topics such as recording principles, depth of field, field of view, camera movements, and shot identification and composition.

-
- Concepts and techniques are reviewed and illustrated in whole class discussions and demonstrations. In groups of two or three, students demonstrate their understanding of shot composition and focussing techniques, then use written sources to identify and label camera parts and functions.
 - Significant time is devoted to safe handling and operation of cameras, establishing startup and shutdown regimes, and completing a training checklist.

Pre-production Planning

- In groups of three or four, students develop story ideas. After settling on one, they proceed to break down the sequence into individual shots, identifying content, location, and camera position/angle.
- At the same time, they begin to think about the audio content and its possible contribution to the effect of the sequence. After completing their notes, students use a word processor to produce a one-page treatment describing the program concept.
- The final stage is the creation of a storyboard identifying location, field of view, camera angle, and audio and video content.

Production

- From the approved storyboards students produce their sequence, ensuring clean edits by regular review.
- The teacher monitors production through observation and assistance. When the video component is finished, students review it to create an audio cue sheet. Working from their cue sheet, students use an audio application to create the soundtrack.

Postproduction

- With the soundtrack completed, students set up equipment to perform an audio dub. If a character generator is available, students add titles and credits by dubbing to a blank tape.

Presentation

- Upon completion of the assignment, students show their work to their peers who provide feedback and assessment.

Checking for Learning

- The activity is concluded with a written test in which students demonstrate their understanding of the concepts and techniques employed in the activity.

Assessment/Evaluation Techniques

- Pencil and paper quizzes are employed for theoretical material such as the elements and principles of design, properties of light, camera functions, and each particular process.
- Observations of the student's performance during the production process are recorded on checklists, thus generating a substantial range of formative evaluation (Appendix 2.1b).
- Performance assessment is used to determine the student's ability to meet given criteria.
- The final summative evaluation may include individual student and peer assessments and teacher evaluations of various technical and aesthetic aspects of the video (Appendix 2.1c).
- With a written test, students demonstrate their understanding of the concepts and techniques.

Accommodations

- Project requirements may easily accommodate the needs of all students.
- The length of the video may be altered, the number of shots may be reduced, and an audio dub of a single musical selection may be substituted for the multi-layered sound track.
- Recording of original sound sources and the application of digital video effects may provide enrichment.

Resources

Audio-video production equipment such as video cameras, lighting equipment, microphones, editing hardware and software, sound mixing equipment, and necessary cabling.

Books

Hitchcock, Peter. *Videography: The Guide to Making Videos*. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. ISBN 0-9696261-0-X

Hone, Rick and Liz Flynn. *Video in Focus: A Guide to Viewing and Producing Video*. Toronto: Globe/Modern Curriculum Press, 1992. ISBN 0-888996-344-4

Hone, Rick and Liz Flynn. *Video in Focus: A Guide to Viewing and Producing Video, Teacher's Guide*. Toronto: Globe/Modern Curriculum Press, 1992. ISBN 0-888996-281-2

Utz, Peter. *Today's Video, Equipment, Setup and Production*. USA: Prentice-Hall, 1992. ISBN 0-13925033-6

Zettl, Herbert. *Video Basics*. Toronto: Nelson Canada, 1995.

Videos

Basic Shooting. USA: Videomaker, Inc., 1994. 42 minutes.

Video Editing. USA: Videomaker, Inc., 1994. 47 minutes.

Videography: The Guide to Making Videos. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. Eight 30-minute videos.

Magazines.

Digital Video. USA: Miller Feeman Publications.

New Media.pro. Toronto: Southam Inc.

Video Systems. USA: Interac/Primedia Publication.

VideoMaker. USA: VideoMaker Inc.

Web Sites

Digital Imaging Magazine

<http://www.digitalimagingmag.com>

A good source of digital video/editing online articles, links to user groups, and equipment information.

New Media.pro Magazine

<http://www.newmediapromagazine.com>

A good Canadian source of digital video/editing online articles, links to user groups, and equipment information.

Videomaker Magazine

<http://www.videomaker.com>

A good source of video/editing online articles, links to user groups, and equipment information.

Video Systems Magazine

<http://www.videosystems.com>

A good source of video/editing online articles, links to user groups, and equipment information.

Activity 2: Video Biography with Still Images

Time: 330 minutes

Description

Students explore digital video and audio through the preparation of a biography chronicling the life of a chosen person or group. Using available technology, students create a video of themselves, someone else, a mythical person, sports hero, or an historical figure. An understanding of digital media is developed by capturing video and still images, recording original narration, adding musical clips, preparing graphic content, and assembling all resources in a desktop video or presentation/multimedia software. Students complete the project by exploring methods of electronic distribution (Internet, CDs, etc.). The presentation of individual work at the end of the activity provides each student with insight, respect, and understanding of the history, cultural heritage, and pluralism of contemporary society.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.02G – identify and describe the basic techniques required to produce animations and audio-video productions;

TFV.03G – identify and describe the processes of capturing still images;

TFV.04G – demonstrate understanding of electronic communication equipment;

SPV.02G – produce audio-video and/or animated productions;

SPV.03G – compose, capture, and process still images;

SPV.04G – use computer graphics software competently;

ICV.01G – explain the benefits, risks, and ethics associated with communications technology;

ICV.02G – observe safety rules and regulations;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.05G – describe various video recording techniques;

TF1.06 G – outline the procedures required to create audio-video, audio, and animated productions;

TF1.07 G – outline the steps used to edit audio-video, audio, and animated productions;

TF1.11G – identify the elements of lighting and staging;

SP1.05G – create various effects using video and digital camera techniques;

SP1.06G – use basic lighting techniques and props competently to accentuate audio-video productions;

SP1.07G – create simple animations using video cameras;

SP1.08G – edit audio-video and/or animated productions;

SP1-11G – enhance or create sets, lighting schemes, and information displays;

IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communications;

IC1.02G – operate equipment safely;

IC1.03G – apply health and safety standards when using products and materials;

IC1.04G – identify career opportunities and develop appropriate education plans;

IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- Student work in this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students are expected to keep a daily log recording notes of their accomplishments and outlining any future needs that this activity requires.
- The teacher collects and provides examples of teacher-prepared projects and work created by other students for use in discussion.

-
- Students must comply with copyright laws and correct use of any copyrighted materials.
 - Teachers provide the students with the appropriate equipment required to complete this activity, including:
 - audio-video and editing equipment;
 - computers with video capture and output capabilities;
 - digital cameras and scanners;
 - desktop video and presentation/multimedia software;
 - CD burners, if available.
 - Teachers should investigate cross-curricular connections with other subjects including English, Music, Social Science, and Student Services.
 - Members of the community and/or multicultural agencies may provide students with insights into this activity.

Prior Knowledge Required

- A basic understanding of computer operations and the use of video equipment would be beneficial, but is not necessary to complete this project.
- Previous reflection by the student on family and cultural history may prove helpful, but is not necessary.
- An understanding of the principles of design and how they may be applied to the project.

Teaching/Learning Strategies

- To help students begin, the historical biography format should be discussed as part of a brainstorming session, including research techniques and how information can be gathered. Students (with teacher direction) develop a plan for gathering information.
- Each student develops a focus for the project (themselves, someone else, a mythical person, sports hero, an historical figure, or group such as their family). Each student should do preliminary research on their chosen topic. Other sources of information may arise out of this preliminary research. Interview questions based on the focus are prepared.
- Each student creates a storyboard that diagrams the project frame by frame.
- Teacher demonstrates the basic setup and correct handling procedures for the equipment involved in this activity. Equipment and software are introduced through a series of small group lessons throughout the activity (e.g., cameras and scanners at the start, the CD burner for the final output).
- Students complete a series of short software exercise worksheets and quizzes to learn the safe, correct use of all equipment and software and the basic techniques and options that the equipment and software provide.
- Students gather and compile their resource material.
- Students are now at the editing/authoring stage that includes constructing, collecting, and editing all raw materials (text, photos, sound, and video) to be used in the project.
- Using these materials and desktop video or presentation/multimedia software, the student can create the multimedia project based on a storyboard guide.
- The teacher discusses the output options available for the completed work and students decide on the format best suited to their needs (traditional print to video and other means of electronic distribution – CDs/Internet).
- Students present their projects to the class. A presentation to the larger school community (a school event or in the cafeteria during lunch) should be discussed by the class, and left open as an option.
- Upon completion of the activity and after all student work has been presented, self, peer, and group assessments and teacher evaluation session of the project are completed and discussed by the class.

Assessment/Evaluation Techniques

- Pencil and paper quizzes are used for theoretical material such as the elements and principles of design, properties of light, camera functions, and each particular process.
- Observations of the student's performance during the production process are recorded on checklists, thus generating a substantial range of formative evaluation.
- The final summative evaluation may include individual student and peer assessments and teacher evaluations of various technical and aesthetic aspects of the video.
- Performance assessment is used to determine the student's ability to meet criteria.
- Diagnostic assessment includes students' awareness of video and multimedia concepts.
- Summative assessment is used for completed worksheets (proposal and storyboards).
- Summative assessment of the concepts and techniques is also used.

Accommodations

- Alternate Topic: Students research local person or someone whom they admire who is a scientist, politician, writer, athlete, artist, musician, or author and construct a digital biography of the major events in the person's life.
- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs can be given appropriate timelines for completion of this activity.
- Peer tutoring is given to those students who need extra help.
- Student-to-student discussion and teacher-to-student conferencing should occur throughout.
- Peer tutors help students with special needs handle equipment.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Books

Hitchcock, Peter. *Videography: The Guide to Making Videos*. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. ISBN 0-9696261-0-X

Utz, Peter. *Today's Video, Equipment, Setup and Production*. USA: Prentice-Hall, 1992. ISBN 0-13925033-6

Zettl, Herbert. *Video Basics*. Toronto: Nelson Canada, 1995.

Videos

Basic Shooting. USA: Videomaker, Inc., 1994. 42 minutes.

Video Editing. USA: Videomaker, Inc., 1994. 47 minutes.

Videography: The Guide to Making Videos. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. Eight 30-minute videos.

Magazines

Digital Imaging. New York: Cygnus Publishing.

Digital Video. USA: Miller Feeman Publications.

New Media.pro. Toronto: Southam Inc.

Video Systems. USA: Interac/Primedia Publication.

VideoMaker. USA: VideoMaker Inc.

Web Sites

Digital Imaging Magazine

<http://www.digitalimagingmag.com>

A good source of digital video/editing online articles, links to user groups, and equipment information.

Digital Video Magazine

<http://www.dv.com>

A good source of digital video/editing online articles, links to user groups, and equipment information.

New Media.pro Magazine

<http://www.newmediapromagazine.com>

A good Canadian source of digital video/editing online articles, links to user groups, and equipment information.

Videomaker Magazine

<http://www.videomaker.com>

A good source of video/editing online articles, links to user groups, and equipment information.

Videonics Systems

<http://www.videonics.com>

Articles on video/editing, links to user groups, industry information, and equipment information.

Video Systems Magazine

<http://www.videosystems.com>

A good source of video/editing online articles, links to user groups, and equipment information.

Activity 3: Video Yearbook Segment

Time: 330 minutes

Description

As part of a video yearbook, students design and produce a video introduction to the facilities, services, and programs available to students at their school. They apply audio and video techniques, various titling options, and basic editing procedures to finalize their segment of the yearbook. Students also incorporate basic lighting techniques and props to accentuate their productions.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.02G – identify and describe the basic techniques required to produce animations and audio-video production;

TFV.04G – demonstrate understanding of electronic communication equipment;

SPV.02G – produce audio-video and/or animated productions;

ICV.01G – explain the benefits, risks, and ethics associated with communications technology;

ICV.02G – observe safety rules and regulations;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.05G – describe various video recording techniques;

TF1.06G – outline the procedures required to create audio-video, audio, and animated productions;

TF1.07G – outline the steps used to edit audio-video, audio, and animated productions;

SP1.05G – create various effects using video and digital camera techniques;

SP1.06G – use basic lighting techniques and props competently to accentuate audio-video productions;

SP1.08G – edit audio-video and/or animated productions;

-
- IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communications;
 - IC1.02G – operate equipment safely;
 - IC1.03G – apply health and safety standards when using products and materials;
 - IC1.04G – identify career opportunities and develop appropriate education plans;
 - IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- This activity is completed by groups of three or four students.
- A character generator is used to create titles and credits, but a computer with NTSC output may also be used, or computer or hand-drawn graphics.
- To complete the soundtrack, sound-editing software is required along with royalty-free music and sound effects.
- Teachers need to consult with other teachers in the school to allow students access to film various class activities and school functions.
- If a video yearbook is not part of your school program, this activity is still a valuable resource for new students in the school. A good cross-curricular link is possible with Student Services or Co-operative Education.
- The activity is easily expanded to include special interest of students in other areas of study such as art, music, drama, science, etc. Teachers may wish to contact departments within the school to have students produce specific videos highlighting the activities of that discipline.

Prior Knowledge Required

- Students who have taken Integrated Technologies (Stop Action Animation) are familiar with the operation of the video camera.
- Any experience with video or audio equipment is helpful; however, this activity assumes no prior knowledge of either the concepts or techniques of video and audio production.

Teaching/Learning Strategies

- The video yearbook segment introduces students to basic video production. Students work individually and co-operatively with the principles of video production within guidelines that promote project planning, teamwork, and skilled use of resources.
- Students plan and produce a two-minute video sequence employing techniques designed to introduce the facilities, services, and programs available at their school.
- Audio content consists of an appropriate music selection (without lyrics) and a voiceover narration.
- The final video is completed with or without interviews. Restrictions on camera movement promote awareness of shot composition and reduce visual clutter for the viewer.
- Titles and credits are added depending on available equipment.
- This activity requires whole class lessons, small group lessons, and individual instruction geared to specific problems as the students advance toward the final product.

Introduction

- Students read and respond to questions from written materials covering topics such as recording principles, depth of field, field of view, camera movements, and shot identification and composition.
- Concepts and techniques are reviewed and illustrated in whole class discussions and demonstrations.
- In groups of two or three, students demonstrate their understanding of shot composition and focussing techniques, then use written sources to identify and label camera parts and functions.
- One class is devoted to safe handling and operation of cameras, establishing startup and shutdown regimes, and completing a training checklist.

Pre-production

- In small groups, students explore potential activities and areas of the school community they plan to present in the video.
- After developing a final list of video sequences, they proceed to break each sequence into individual shots, identifying content, location, and camera position/angle. At the same time, they begin to think about the audio content and its possible contribution to the effect of the sequence.
- After completing their notes, students use a word processor to produce a one-page treatment describing the program concept.
- The final stage is the creation of a storyboard identifying location, field of view, camera angle, and audio and video content.

Production

- From final storyboards, students produce each sequence, ensuring clean edits by regular review. The teacher monitors production through observation and assistance.
- When the video component is finished, students review it to create a video log identifying those segments to be used in the final video. In addition, an audio cue sheet is created indicating content and cue times corresponding to the video log.
- Analog or digital video editing techniques are introduced in small group demonstrations. In addition, a concise step-by-step editing instruction sheet appropriate to available equipment is provided to each student.
- The audio recording and editing lesson follows the same format as those listed for video editing. Titles and credits are created using a character generator, computer program, or available equipment.

Post-production

- Students insert the titles and credits on the final video edit. Students then complete post-production by setting up the equipment to perform the final audio edit onto the videotape.

Presentation

- Upon completion of the assignment, and as part of the final summative evaluation, students show their work to their peers who provide feedback and an assessment based on clearly defined objective criteria.

Report

- Each group of students produces a written report on the current job prospects and the educational requirements for professional video production.

Assessment/Evaluation Techniques

- Pencil and paper quizzes are employed for theoretical material such as elements and principles of design, properties of light, cameral functions, and each particular process.
- Observations of the student's performance during the production process are recorded on checklists, thus generating a substantial range of formative evaluation (Appendix 2.3a).
- The final summative evaluation includes individual student and peer assessment, followed by the teacher evaluations of various technical and aesthetic aspects of the video (Appendix 2.3b).
- Performance assessment is used to determine the student's ability to meet the given criteria.
- The activity is concluded with a written test in which students demonstrate their understanding of the concepts and techniques used.

Accommodations

- Students experiencing difficulties benefit from teacher and peer assistance where appropriate.
- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs may be given appropriate timelines for completion of this activity.

- Peer tutoring is given to those students who need extra help.
- Student-to-student discussion and teacher-to-student conferencing should occur throughout the activity.
- Peer tutors help special needs students handle equipment.
- For enrichment, students may use this technology to develop a compilation of yearbook segments.

Resources

Books

Hitchcock, Peter. *Videography: The Guide to Making Videos*. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. ISBN 0-9696261-0-X

Hone, Rick and Liz Flynn. *Video in Focus: A Guide to Viewing and Producing Video*. Toronto: Globe/Modern Curriculum Press, 1992. ISBN 0-888996-344-4

Hone, Rick and Liz Flynn. *Video in Focus: A Guide to Viewing and Producing Video, Teacher's Guide*. Toronto: Globe/Modern Curriculum Press, 1992. ISBN 0-888996-281-2

Zetzl, Herbert. *Video Basics*. Toronto: Nelson Canada, 1995.

Videos

Basic Shooting. USA: Videomaker, Inc., 1994. 42 minutes.

Video Editing. USA: Videomaker, Inc., 1994. 47 minutes.

Videography: The Guide to Making Videos. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. Eight 30-minute videos.

Magazines

Digital Imaging. New York: Cygnus Publishing.

Digital Video. USA: Miller Feeman Publications.

Video Systems. USA: Interac/Primedia Publication.

VideoMaker. USA: VideoMaker Inc.

Web Sites

Digital Imaging Magazine

<http://www.digitalimagingmag.com>

A good source of digital video/editing online articles, links to user groups, and equipment information.

Digital Video Magazine

<http://www.dv.com>

A good source of digital video/editing online articles, links to user groups, and equipment information.

Videomaker Magazine

<http://www.videomaker.com>

A good source of video/editing online articles, links to user groups, and equipment information.

Videonics Systems

<http://www.videonics.com>

Articles on video/editing, links to user groups, industry information, and equipment information.

Video Systems Magazine

<http://www.videosystems.com>

A good source of video/editing online articles, links to user groups, and equipment information.

Activity 4: Infomercial/Public Service Announcement

Time: 330 minutes

Description

Students investigate existing industry standards and requirements for the production and broadcast of commercial messages or Public Service Announcements (PSAs). Groups of students design and produce a short video to promote a school subject or one that touches upon a social justice issue that reflects the needs of their individual school and/or community. Research involves organizations supported in the school community or a subject of their choice. Scriptwriting, storyboards, various camera techniques, lighting schemes, audio set-ups, and editing techniques are explored to enable students to produce a broadcast quality commercial message or Public Service Announcement.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.02G – identify and describe the basic techniques required to produce animations and audio-video productions;

TFV.03G – identify and describe the processes of capturing still images;

TFV.04G – demonstrate understanding of electronic communication equipment;

SPV.02G – produce audio-video and/or animated productions;

SPV.03G – compose, capture, and process still images;

SPV.04G – use computer graphics software competently;

ICV.01G – explain the benefits, risks, and ethics associated with communications technology;

ICV.02G – observe safety rules and regulations;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.05G – describe various video recording techniques;

TF1.06G – outline the procedures required to create audio-video, audio, and animated productions;

TF1.07G – outline the steps used to edit audio-video, audio, and animated productions;

TF1.11G – identify the elements of lighting and staging;

SP1.05G – create various effects using video and digital camera techniques;

SP1.06G – use basic lighting techniques and props competently to accentuate audio-video productions;

SP1.07G – create simple animations using video cameras;

SP1.08G – edit audio-video and/or animated productions;

SP1-11G – enhance or create sets, lighting schemes, and information displays;

IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communications;

IC1.02G – operate equipment safely;

IC1.03G – apply health and safety standards when using products and materials;

IC1.04G – identify career opportunities and develop appropriate education plans;

IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- Student work in this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students are expected to keep a daily log recording notes of their accomplishments and outlining any future needs that this activity requires.

-
- The teacher collects and provides examples of a variety of television commercials/Public Service Announcements that target various groups of people. Some suggestions for video collections are included in Resources, but the teacher is encouraged to collect examples currently running in the community.
 - Students must be made aware of copyright laws and the correct use of any copyrighted materials.
 - Teachers need to familiarize the students with the operation of audio-video, lighting, and editing equipment to produce their project.
 - Computers with video capture/output capabilities and desktop video software may be used for titling and editing if available.
 - Teachers should investigate cross-curricular connections with other subjects including English, Music, and Social Science.
 - Members of the community may be contacted to provide students with insights into issues.

Prior Knowledge Required

- A basic understanding of computer operations and the basic use of video equipment would be beneficial, but is not necessary to complete the project.
- Students should understand the principles of design and how they may be applied to the project.

Teaching/Learning Strategies

- The teacher introduces the unit by showing television commercials/PSAs from different decades (see *Commercial Mania* listed under Resources) and asking students how commercials have changed over the years. Discuss the concept of the target audience and how this applies to commercials/PSAs and the type of television show with which they are often associated.
- The teacher outlines the basic stages of television production (pre-production/planning, setup and rehearsal, production, and post-production) and how they apply to this activity.
- The teacher deconstructs a television commercial/PSA by:
 - analysing the components and involving the students in this analysis through discussion and questioning;
 - noting shot composition, camera, lighting, and editing techniques used to achieve a desired effect or to convey a particular message;
 - outlining the process used to create a commercial/PSA with references to the stages of television production, and providing examples of these stages specific to this activity.
- Students work in groups to demonstrate their understanding of the process by:
 - brainstorming ideas for a television commercial/PSA for a given product/issue (as prescribed by the teacher), keeping in mind their target audience for the product;
 - discussing their initial ideas with the teacher and then mapping out a proposal and treatment for the issue selected by the group;
 - creating a script and a storyboard for a 15- to 30-second commercial/PSA;
 - developing a production and shooting schedule for their project.
- The teacher demonstrates the basic setup and correct handling procedures for the equipment involved in this activity in a series of small group lessons throughout the activity (e.g., cameras at the start, editing equipment at the editing stage).
- Students work through a series of short exercises that reinforce the teachers' demonstrations by:
 - learning the safe and correct use of video, audio, lighting, and editing/titling equipment;
 - learning how to utilize various camera techniques, lighting schemes, audio set-ups, and editing techniques to film and edit their work;
 - learning basic desktop video techniques for titling and editing (should equipment be available);
 - completing equipment exercise worksheets and quizzes (Appendix 2.4a).

-
- Upon completion of all pre-production, setup, and rehearsal work, students move into the production and post-production stages of the activity. They shoot appropriate footage, prepare audio or graphic source material, perform appropriate editing of the source material, and insert all other audio and graphics.
 - Students present their commercials to their classmates by putting themselves in the role of an ad agency and pitching their commercials/PSAs to the client (i.e., the class). They then present their final commercial to their potential clients.
 - Students present their work to the larger school community (a school event or in the cafeteria during lunch) and the social agency/community group that may have been used as a source.
 - Upon completion of the activity and after all student work has been presented, teacher, self, peer, and group assessment sessions of the project are completed and discussed by the class.
 - Where only a limited video setup is available, students may act out their television commercial/PSA during presentation of their script and storyboards. Editing may have to be done in camera and a photo essay may be created, using a digital or instant camera, accompanied by narration and/or music.

Assessment/Evaluation Techniques

- Formative assessment of each student's ability to work co-operatively in group situations:
 - students assess the contribution of the individual group members by completing daily log sheets;
 - self, peer, and group assessment sheets are completed at the end of the project.
- Diagnostic assessment includes students' awareness of video concepts.
- Performance assessment is used to determine the student's ability to meet the criteria.
- Summative assessment of equipment worksheets and quizzes is used.
- Summative assessment of completed worksheets (proposal sheets, scripts, and storyboards) is used.
- Summative assessment of finished commercial/public service announcement is used (Appendix 2.4b).
- Summative assessment of the concepts and techniques is used.

Accommodations

- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs can be given appropriate timelines for completion of this activity.
- Peer tutoring is given to those students who may need extra help.
- Student-to-student discussion and teacher-to-student conferencing should occur throughout the activity.
- Peer tutors help students with special needs handle equipment.
- For enrichment, students may use this technology to develop an entrepreneurial business for the community, another subject area, or for the school.

Resources

Various samples of commercials and public service announcements collected by the teacher

Books

Andersen, Neil and John J. Punjente, SJ. *Scanning Television: Videos for Media Literacy in Class*. Toronto: Harcourt Brace & Company, 1997. ISBN 0774701730

Hitchcock, Peter. *Videography: The Guide to Making Videos*. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. ISBN 0-9696261-0-X

Hone, Rick and Liz Flynn. *Video in Focus: A Guide to Viewing and Producing Video*. Toronto: Globe/Modern Curriculum Press, 1992. ISBN 0-888996-344-4

Hone, Rick and Liz Flynn. *Video in Focus: A Guide to Viewing and Producing Video, Teacher's Guide*. Toronto: Globe/Modern Curriculum Press, 1992. ISBN 0-888996-281-2

Videos

Commercial Mania: Highlights from the Weirdest, Wackiest, Wildest Commercials of the 50's and 60's. California: Rhino Video, 1987. 30 minutes. RNVD 902

Videography: The Guide to Making Videos. Toronto: Peter Hitchcock Productions Inc. and TV Ontario, 1992. Eight 30-minute videos.

Web Sites

Videomaker Magazine

<http://www.videomaker.com>

A good source of video/editing online articles, links to user groups, and equipment information.

Videonics Systems

<http://www.videonics.com>

Articles on video/editing, links to user groups, industry information, and equipment information.

Video Systems Magazine

<http://www.videosystems.com>

A good source of video/editing online articles, links to user groups, and equipment information.

Appendix 2.1a

Chase Video

(The teacher should review the criteria for this activity)

Criteria:

- length restriction of two minutes;
- in-camera editing only;
- replacement of sync sound with digitally-produced soundtrack;
- minimum of 20-30 distinct shots (20-30 storyboard frames);
- no camera movements (or zooms) except panning and tilting;
- one example of a fade-in or fade-out;
- effective development of sequence employing an establishing shot, a shot to introduce characters, shots of unfolding action, and a concluding shot;
- the addition of title before and credits after the sequence.

Steps to follow:

- develop your story idea;
- create a treatment (brief story outline in paragraph form);
- create a shooting script or storyboard that includes shot sizes, locations, camera angles and positions, and a description of the action;
- videotape your chase sequences;
- review your first taping and make the necessary changes;
- videotape your final chase;
- once the videotape is complete, add audio (use the video editor to do an audio dub or use *SoundBlaster* to record your audio).

Hand In:

- the treatment (story outline in paragraph form);
- your storyboards or shooting script;
- your final videotape.

Appendix 2.1b

Chase Video Production Checklist

Production	Y	N
Treatment		
• typed		
• free of spelling errors		
• grammatically correct		
• titled and identified		
Shooting script or storyboard		
• all shots identified		
• all camera positions and angles listed		
• all locations identified		
• all actions noted		
Production video (composition, lighting, and audio)		
• framing is accurate		
• focussing is accurate		
• exposure (white balance) is accurate		
• audio dub is accurate		
Video techniques		
• effective variety of shots		
• effective camera positions		
• effective camera angles		
• effective camera moves		
Video (story logic)		
• shots create sequences		
• sequences develop logically		
• edits are clean		
• audio enhances video image		

Appendix 2.1c

Chase Video Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
<p>Knowledge/ Understanding TFV.02G, TF1.05G, TF1.06G, TF1.07G Identify and describe the basic techniques used to produce animations and audio-video productions</p>	- is able to identify and describe few of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe some of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe most of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe all of the basic techniques used to produce animations and audio-video productions
<p>Thinking/Inquiry TFV.04G, TF1.05G Demonstrates understanding of electronic communication equipment</p>	- demonstrates limited understanding of electronic communication equipment	- demonstrates moderate understanding of electronic communication equipment	- demonstrates understanding of most of the electronic communication equipment	- demonstrates a thorough understanding of electronic communication equipment
<p>ICV.03G, IC1.04G Identify career opportunities and develop appropriate education plans</p>	- identifies career opportunities and develops an appropriate education plan with limited effectiveness	- identifies career opportunities and develops an appropriate education plan with moderate effectiveness	- identifies career opportunities and develops an appropriate education plan with considerable effectiveness	- identifies career opportunities and develops an appropriate education plan with a high degree of effectiveness
<p>Communication ICV.01G, IC1.01G, IC1.05G Explain the benefits, risks, and ethics associated with communications technology</p>	- explains the benefits, risks, and ethics associated with communications technology with limited clarity	- explains the benefits, risks, and ethics associated with communications technology with moderate clarity	- explains the benefits, risks, and ethics associated with communications technology with considerable clarity	- explains the benefits, risks, and ethics associated with communications technology with a high degree of clarity
<p>Application SPV.02G, SP1.05G, SP1.06G, SP1.08G Produce audio-video and/or animated productions</p>	- edits audio-video and/or animated productions with limited effectiveness	- edits audio-video and/or animated productions with moderate effectiveness	- edits audio-video and/or animated productions with considerable effectiveness	- edits audio-video and/or animated productions with a high degree of effectiveness
<p>ICV.02G, IC1.02G, IC1.03G Observe safety rules and regulations</p>	- operates equipment safely and correctly only with supervision	- operates equipment safely and correctly only with some supervision	- operates equipment safely and correctly	- demonstrates and promotes safe and correct procedures when operating equipment

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 2.3a

Video Yearbook Segment Post-production Checklist

Post-production	Y	N
Titles and credits (sources)		
• easy-to-read fonts		
• free of spelling errors		
• colour enhances readability		
• includes all personnel		
Audio (sources)		
• voices are audible		
• tone (treble and bass) are balanced		
• music is audible		
• audio cue sheet is created		
Video editing		
• source tapes for video and audio have time logs		
• leader or colour bars are inserted		
• edits are clean and free of interference		
• colour balance is maintained		
• shots create sequences		
• sequences develop logically		
• sequences condensed effectively		
• visual continuity is maintained (vector use)		
• jump cuts are avoided or used properly		
• effective use of transition (fades or wipes)		
Audio		
• narration is accurately inserted		
• music does not overpower voices		
• environmental sound is mixed effectively		
• sound perspective is maintained		
• audio levels are consistent through out		
• audio track extends over credits		

Components of this checklist may be combined with those for pre-production and production (Appendix 2.1b Chase Video Production Checklist)

Appendix 2.3b

Video Yearbook Segment Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.02G, TF1.05G, TF1.06G, TF1.07G Identify and describe the basic techniques used to produce animations and audio-video productions	- is able to identify and describe few of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe some of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe most of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe all of the basic techniques used to produce animations and audio-video productions
Thinking/Inquiry TFV.04G, TF1.05G Demonstrate understanding of electronic communication equipment	- demonstrates limited understanding of electronic communication equipment	- demonstrates moderate understanding of electronic communication equipment	- demonstrates understanding of most of the electronic communication equipment	- demonstrates a thorough understanding of electronic communication equipment
ICV.03G, IC1.04G Identify career opportunities and develop appropriate education plans	- identifies career opportunities and develops an appropriate education plan with limited effectiveness	- identifies career opportunities and develops an appropriate education plan with moderate effectiveness	- identifies career opportunities and develops an appropriate education plan with considerable effectiveness	- identifies career opportunities and develops an appropriate education plan with a high degree of effectiveness
Communication ICV.01G, IC1.01G, IC1.05G Explain the benefits, risks, and ethics associated with communications technology	- explains the benefits, risks, and ethics associated with communications technology with limited clarity	- explains the benefits, risks, and ethics associated with communications technology with moderate clarity	- explains the benefits, risks, and ethics associated with communications technology with considerable clarity	- explains the benefits, risks, and ethics associated with communications technology with a high degree of clarity
Application SPV.02G, SP1.05G, SP1.06G, SP1.08G Produce audio-video and/or animated productions	- edits audio-video and/or animated productions with limited effectiveness	- edits audio-video and/or animated productions with moderate effectiveness	- edits audio-video and/or animated productions with considerable effectiveness	- edits audio-video and/or animated productions with a high degree of effectiveness
ICV.02G, IC1.02G, IC1.03G Observe safety rules and regulations	- operates equipment safely and correctly only with supervision	- operates equipment safely and correctly only with some supervision	- operates equipment safely and correctly	- demonstrates and promotes safe and correct procedures when operating equipment

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 2.4a

Camera Exercise: Tilt, Pan, and Level

After you become familiar with the operation of the tripod, place the camera onto the tripod. Screw it onto the quick release plate and then lock the plate into place. Hook up the camera to the AC power adapter and the monitor on the A/V cart so that the rest of the group can see your work.

Try these basic exercises. Get another group member to count for you and check off your exercises as you do them.

Levelling the camera.

Place the forward leg of the tripod under the barrel of the lens on the camera. Place a book under one of the "side" legs and, using the bubble level on the tripod, level the camera. (It is easier to level the camera this way than to try and fiddle with all three legs.)

- Done _____

Pan the camera at least 90 degrees to the left and to the right. Notice that your picture may no longer be level when you pan far to either side. How far can you go without losing your level picture? (Use a table or desk to determine what is level in your frame.)

- Done _____

Panning

Do a swish pan, moving the camera rapidly to the left and right. This often is used as an editing transition or to give the illusion of an objective observer quickly moving their point of view from a person or object in the frame, to one far to the left or right, out of frame.

- Done _____

Do a series of slow pans and try to be as smooth as you can all the way through. Count "one Mississauga, two Mississauga", etc., to determine how long your pans are.

Note: To prevent strobing or spray painting, no object in the shot should take less than four seconds to cross the screen when you pan past it. The eyes cannot follow it if your pan is too fast.

Do a 3-sec. pan

- Done _____

Do a 5-sec. pan

- Done _____

Do a 10-sec. pan

- Done _____

Tilting

Tilting is like panning, only in a vertical motion rather than a horizontal one. Try the same series of exercises, moving from an object on the ceiling, down to someone's feet, and back up. Can you "find" the object you started with? Or did you have to search around for it?

Do a 3-sec. tilt down and a 3-sec. tilt up

- Done _____

Do a 5-sec. tilt down and a 3-sec. tilt up

- Done _____

Do a 10-sec. tilt down and a 3-sec. tilt up

- Done _____

Review your work and report to the teacher before starting the next exercise.

Appendix 2.4b

Infomercial/Public Service Announcement Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.02G, SPV.02G, TF1.06G, TF1.07G Identify and describe the techniques and procedures	- demonstrates limited knowledge in identifying and describing the techniques and procedures used for creating/editing audio-video productions	- demonstrates some knowledge in identifying and describing the techniques and procedures used for creating/editing audio-video productions	- demonstrates considerable knowledge in identifying and describing the techniques and procedures used for creating/editing audio-video productions	- demonstrates a high ability to identify and describe the techniques and procedures used for creating/editing audio-video productions
Thinking/Inquiry TFV.02G, SPV.02G, TF1.06G, TF1.07G Design and inquiry skills	- applies few of the design and inquiry skills required for outlining procedures for creating/editing audio-video productions	- applies some of the design and inquiry skills required for outlining procedures for creating/editing audio-video productions	- applies most of the design and inquiry skills required for outlining procedures for creating/editing audio-video productions	- applies all or almost all of the design and inquiry skills required for outlining procedures for creating/editing audio-video productions
Communication ICV.01G, IC1.05G Communicates and explains the benefits, risks, and ethics associated with audio-video productions	- communicates and explains the benefits, risks, and ethics associated with audio-video productions with limited clarity	- communicates and explains the benefits, risks, and ethics associated with audio-video productions with moderate clarity	- communicates and explains the benefits, risks, and ethics associated with audio-video productions with considerable clarity	- communicates and explains the benefits, risks, and ethics associated with audio-video productions with a high degree of clarity and with confidence
Application ICV.03G, IC1.04G Makes connections and identifies career opportunities in the audio-video field	- makes connections and identifies career opportunities in the audio-video field with limited effectiveness	- makes connections and identifies career opportunities in the audio-video field with moderate effectiveness	- makes connections and identifies career opportunities in the audio-video field with moderate effectiveness	- makes connections and identifies career opportunities in the audio-video field with a high degree of effectiveness

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Unit 3: Short Animations

Time: 22 hours

Unit Description

This unit introduces students to the fundamental principles of computer-generated animation. Students develop scripts, prepare storyboards, construct or model images, edit animations, and output for different applications. They study and apply composition, 2-D and/or 3-D modelling, and editing techniques to create animated short films. Students apply ethical standards and policies in their animated productions while exploring education and career opportunities.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations: TFV.02G, TFV.03G, TFV.04G, SPV.02G, SPV.03G, SPV.04G, ICV.01G, ICV.02G, ICV.03G.

Specific Expectations: TF1.01G, TF1.02G, TF1.06G, TF1.07G, SP1.07G, SP1.08G, SP1.09G, IC1.01G, IC1.02G, IC1.03G, IC1.04G, IC1.05G.

Activity Titles (Time + Sequence)

Activity 1	Animated Text	330 minutes
Activity 2	2-D Animation to Music/Poem	330 minutes
Activity 3	2-D Original Story/Cartoon	330 minutes
Activity 4	Web Animations	330 minutes

Prior Knowledge Required

- Students should be familiar with the operation of a computer and be able to save, import, export, and create files.
- Experience with storyboarding and digital audio recording and editing is beneficial.
- Students benefit from skills acquired in the Integrated Technologies Stop Action Animation activity or any other computer-based communications activity.
- Previous experience from Unit 2 with storyboarding and digital audio recording and editing is beneficial.
- Writing skills and creativity are assets.

Unit Planning Notes

- The activities depend on equipment available in the school. To ensure that activities are authentic, the contents of this unit should be adapted to the technology that is available locally.
- The teacher should investigate the software that is accessible and available at the school or through the board that is suitable for each activity.
- The activities require teachers to become familiar with 2-D and 3-D animation.
- Animated cels, optical effects, tweening/morphing, and colour cycling provide the technical foundation for the production of effective animations.
- Teachers need to become well versed with all of the hardware and software used.
- A variety of professional and student productions of each activity promote the desired standard of completion.
- It is essential that teachers establish compatibility for all software programs and external devices to ensure the success of each activity.

-
- Copyright free music on CD or audiocassette and sound effects collections are great assets.
 - Cross-curricular links can be explored with Visual Arts character animations or English media literacy activities.
 - Student work throughout this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
 - Students must adhere to copyright laws and the correct use of any copyrighted materials.
 - Teachers address safety/censorship on the Internet by implementing School Board policies on appropriate student use and access to Internet services while gathering activity-specific resources.
 - The teacher must stress the correct and safe use of all equipment and materials throughout the unit activities.
 - Teachers require the knowledge and skills needed for the design and production of 2-D and 3-D animation projects.
 - Teacher-produced and collected resources and other support materials should be gathered, as well as examples of classical animation techniques (flipbooks, zoetropes, thaumatropes, sample cels), previous student animations, and industry samples.
 - Each activity enables students to focus on career options and provides insights into the skills required for related professions.
 - Teaching/learning strategies that allow for career links in the unit activities should be investigated (job shadowing, career and education research, field trips, and guest speakers).

Teaching/Learning Strategies

- Short animation activities require whole class lessons, small group lessons, and individual instruction geared to specific problems during production.
- Animated productions combine a variety of academic and applied learning strategies, including independent and group work, problem solving, co-operation, communication, time management, brainstorming new ideas, and presenting.
- Teachers provide their expertise and the material, equipment, and resources for completion of the tasks.
- The student-centred, activity-based mode of delivery enables students to develop individual and group skills.
- Throughout all the activities in this unit, the teacher:
 - monitors and observes all student/group activity;
 - speaks with students/groups regularly to provide help when problems arise;
 - reviews project expectations;
 - modifies project activities to reflect equipment availability.

Assessment and Evaluation

Assessment is an ongoing daily process that includes:

- log/journal entries to monitor daily progress and concerns;
- portfolio to maintain exemplar work;
- regular practical and theory tests and/or quizzes to evaluate knowledge gained;
- activity worksheets and exercises to build technical skills and knowledge;
- project evaluation criteria to establish the standard for project submission;
- student/group presentations to enable students to showcase their accomplishments;
- conferences to create a positive environment where students can share ideas and problem solve;
- self and/or peer critiques to hear different points of view;
- activity checklists and rubrics to assess quality of completion.

Resources

Resources required to deliver the short animation unit include computers with software capable of manipulating 2-D and 3-D animations, sound mixing, and editing.

Relevant software manuals and step-by-step procedure lists are needed throughout the activity.

Books

Culhane, S. *Animation from Script to Screen*. ISBN 0312050526

Blair, Preston. *Cartoon Animation*. Laguna Hills, California: Walter Foster Publishing Corporation, 1994. ISBN 1-56010-084-2

Eddy, Sandra E. *GIF Animator's Guide*. 1997. ISBN 155828561X

Hahn, Don. *Animation Magic Book*. New York: H.B. Fenn & Co., 1998. ISBN 0786830727

Jenkins, Patrick. *Flipbook Animation & Other Ways to Make Cartoons Move*. Toronto: Kids Can Press Ltd., 1991. ISBN 1-55074-007-5

Laybourne, Kit. *The Animation Book*. Indianapolis: The Crown Publishing Group, 1998. ISBN 0517886022

Locke, Lafe. *Film Animation Techniques: A Beginner's Guide and Handbook*. USA: Betterway Publications, Inc., 1992. ISBN 1-55870-236-9

McKelvey, Roy. *Hypergraphics*. London: RotoVision. ISBN 2-88046-313-0

Morrison, M. *"Becoming a Computer Animator", Bring Illustrations to Life*. Sams Publishing. ISBN 0-672-30463-5

Parkin, Geo. *Animation Funstation*. Los Angeles, California: Price Stern Sloane, Inc., 1995. ISBN 0-8431-3990-0

Streel, R. *"Computer Animation: A Whole New World." Ground Breaking Work from Today's top Animation Studios*. ISBN 156493772

White, Tony. *The Animator's Workbook: Step-by-Step Techniques of Drawn Animation*. New York: Watson-Guption Publications, 1986. ISBN 0-8230-0229-2

Web Sites

Tutorials

<http://www.AutoDesk.com>

Animation clips and cels

<http://www.animationstand.com/gallery>

Animation clips and cels

<http://www.movingpixco.com>

Digital Imaging Magazine

<http://www.digitalimagingmag.com>

A good source of digital animation

Digital Video Magazine

<http://www.dv.com>

A good source of digital animation

Interactive site that provides tutorials, tips, and articles

<http://www.webmonkey.com>.

Sample animations

http://www.warnerbrothers.com/home_moz3_day.html

Activity 1: Animated Text

Time: 330 minutes

Description

Using the available 2-D or 3-D animation software, students design and construct an animated personal identity text of themselves, someone else, a mythical person, sports hero, or an historical figure. Students apply composition and typographic principles, along with motion paths, lighting, sound, and 2-D or 3-D modelling techniques to accentuate the overall visual effect of the text. Conversions for various end uses, such as computer presentations, video, or web pages, are also explored

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.02G – identify and describe the basic techniques required to produce animations and audio-video productions;

TFV.03G – identify and describe the processes of capturing still images;

SPV.02G – produce audio-video and/or animated productions;

SPV.03G – compose, capture, and process still images;

SPV.04G – use computer graphics software competently;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.02G – identify basic composition and typographic principles;

TF1.06G – outline the procedures required to create audio-video, audio, and animated productions;

TF1.07G – outline the steps used to edit audio-video, audio, and animated productions;

SP1.05G - create various effects using video and digital camera techniques;

SP1.06G - use basic lighting techniques and props competently to accentuate audio-video productions;

SP1.07G – create simple animations using video cameras;

SP1.08G – edit audio-video and/or animated productions;

SP1.09G – create still images using composition techniques;

IC1.04G – identify career opportunities and develop appropriate education plans.

Planning Notes

- A collection of text and object animations from television, video, and film is needed to provide students with finished examples.
- The teacher should establish compatibility for all software programs and external equipment that will be integrated into this activity.
- Copyright free music or CD or audiocassette, and sound effects collections are a great asset.
- Cross-curricular links can be explored with Visual Arts and/or English media literacy activities.

Prior Knowledge Required

- Students should be familiar with the operation of basic computer functions such as creating and saving files, converting files to different formats, as well as importing and exporting files between programs.
- Experience with storyboarding and digital audio recording and editing is helpful. Students benefit from skills acquired in the Integrated Technologies Stop Action Animation activity or any other computer-based communications activity.
- Students should understand animation terms such as frames and storyboards.

Teaching/Learning Strategies

- This activity requires whole class lessons, small group lessons, and individual instruction geared to specific problems during production.
- Each student produces a text animation that can be exported for various purposes, such as web pages, presentations, or videos.
- Great care must be taken so photos in the picture files are kept in the possession of the student. Personal privacy and security must be guaranteed.
- The teacher explains the concepts involved with animation such as frames, key frames, background, character, storyboard, and story line.
- The teacher reviews the principles of graphic design (proximity, alignment, repetition, and contrast) and typography and how typography adds an overall sense of design to the finished product.
- The teacher reviews primary and complementary colours and explains how colour enhances the overall effectiveness of each graphic element in the activity.
- The whole class views the collected samples and discusses the practical application of typographic elements, colour, and design principles.

Pre-production Planning

- The teacher emphasizes the need for a storyboard before the production begins. The storyboard reflects the proposed typeface, a general indication of text colour and size, a proposed lighting plan, motion paths for text and objects, and their approximate running times.
- In addition, the storyboard indicates all audio sources used in the soundtrack. Text/object motion paths and their run times determine the length of the overall animation. Storyboards are evaluated for clarity, creativity, and attention to various details.

Background – Creating Digital Images

- Students use a digital camera (or video camera attached to a computer) to capture a self-portrait. They save it in a picture file to be used as a background in the final animation.
- Students manipulate the image in a point program such as *Corel Photo Paint* and save the image in a format compatible to the animation software being used.
- The teacher introduces elements of 2-D or 3-D text (face, side, bevels, and back).
- The teacher discusses primary and complementary colours and reviews what works well and what does not.
- Led by the teacher's example, students discover that changing one or more text elements changes the overall appearance and effectiveness of the animation.

Lighting

- The teacher introduces lighting concepts (ambient light, highlighting, front, side, top, and bottom lighting), defines basic lighting terms, and demonstrates how an overall lighting design affects the text.
- Students need time to explore the possibilities and limitations of a chosen lighting plan and its impact on their text.

Motion Paths for Text

- The teacher introduces motion paths for text by entering the screen, spins, turns, bounces, rolls, holding positions, dropouts, and blowaways. For the student to employ effective text animation and balanced use of screen space, the teacher demonstrates grouping and ungrouping of letters to create individual text units (first and last names) that are positioned as the student wishes.
- Students discover that co-ordinated motion paths add readability and interest to the animation.
- The teacher discusses the dangers of overusing motion paths and the resulting distractions that often detract from the overall design of the animation.

Sound

- The teacher introduces the use of sound by recording a soundtrack with voice-over.
- The student records a music track that is equal in time to the animation. A voice-over track identifying the student or containing more information about the student is recorded. The music and voice-over tracks are mixed to create a final soundtrack.
- Students save this computer file and export it to the animation software.

Creating the Final AVI File

- After inserting the soundtrack into the animation file, the student creates a final, appropriate video file (AVI) and exports it to other computer applications, to a web page, or prints it to videotape. Settings for creating the final video file, resolution, compression, dithering, and frame rate depend on the proposed use of the file. If necessary, different video file formats are created for different purposes.

Assessment/Evaluation Techniques

- Pencil and paper quizzes can be used for theoretical material such as composition and typographic principles.
- Design principles, typographic elements and colour use are evaluated in an assignment that requires recognition and labelling of elements from samples and/or a written quiz.
- Observations of the production process recorded on checklists generate a formative assessment.
- The final summative assessment is allocated to the individual student, peer, and teacher (Appendix 3.1a).
- Various technical and aesthetic categories should be considered as part of the final mark depending on the final use of the animation.
- Observation checklists and student conferences, relevant to the available equipment, are used to evaluate the processes of image capture.
- To assess the lighting portion of the activity, observations of particular skills are recorded on checklists.
- Diagnostic assessment includes students' awareness of animation concepts.
- Summative assessments of completed lists and the finished product are used.
- Summative assessment of students' knowledge with a unit test.

Accommodations

- Students with special needs are accommodated in this activity by changing the requirements of the animation or by altering the steps of the production process. For example, as skill building activities, students are provided pre-determined storyboards to complete or they are given existing animations to alter.
- Students with special artistic abilities may wish to add original drawings, music, or other media to the final animation.
- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs can be given appropriate timelines for completion of this activity.
- Students work with a partner or in small groups.
- Peer tutoring is given to those students who need extra help.
- Peer tutors help students with special needs handle equipment.

Resources

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software tutorials and manuals

Books

Animator Pro reference manuals

Culhane, S. *Animation from Script to Screen*. ISBN 0312050526

Morrison, M. "*Becoming a Computer Animator*", *Bring Illustrations to Life*. Sams Publishing. ISBN 0-672-30463-5

Streel, R. *Computer Animation: A Whole New World: Ground Breaking Work from Today's Top Animation Studios*. ISBN 156493772

Web Sites

Digital Imaging Magazine

<http://www.digitalimagingmag.com>

A good source of digital animation

Digital Video Magazine

<http://www.dv.com>

A good source of digital animation

Interactive site that provides tutorials, tips, and articles

<http://www.webmonkey.com>.

Activity 2: 2-D Animation to Music/Poem

Time: 330 minutes

Description

Students select and analyse a literary passage, poem, nursery rhyme, or short piece of music to appreciate the underlying literary or musical theme of the work. Students investigate how visual images interact with audio signals to create a cohesive final animated audio-visual production. To begin, students prepare a storyboard that incorporates visual images with sound to produce an animated short film. They learn to use available 2-D animation software to create a short animated sequence that reflects the literary or musical theme.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.02G – identify and describe the basic techniques required to produce animations and audio-video productions;

SPV.02G – produce audio-video and/or animated productions;

SPV.03G – compose, capture, and process still images;

ICV.03G – identify career opportunities in the communication field.

Specific Expectations

TF1.01G – explain the techniques used to produce technical drawings and illustrations;

TF1.05G – describe various video recording techniques;

TF1.07G – outline the procedures required to create audio-video, audio, and animated productions;

SP1.07G – create simple animations using video cameras;

SP1.08G – edit audio-video and/or animated productions.

Planning Notes

- Student work in this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students are expected to keep a daily log recording notes of their accomplishments and outlining any future needs that this activity requires.
- Students must comply with copyright laws and the correct use of any copyrighted materials.
- Cross-curricular connections can be made to English, Music, and Visual Arts.
- The teacher collects samples of poems, nursery rhymes, short pieces of music, and samples of flipbooks, cartoons, and zoetropes.
- Create handout with the basics of animation. (Ideally, the teacher creates a short animation to outline the basics of animation and serve as an example.)
- Students choose music from various categories and cultures.
- Students choose a collection of poems reflecting a variety of poets, styles, and poetic forms.

Prior Knowledge Required

- Students should understand basic animation terms such as frames and storyboards.

Teaching/Learning Strategies

- The teacher reviews with the class the concepts involved with animation (frames, key frames, background, character, storyboard, story line, etc.).
- As a class, students discuss the various jobs available in the field of animation.
- While listening to several songs, students compose a list of feelings, images, and colours they would associate with the sounds. (Note: If using a poem, students read a sample supplied by the teacher. Students circle all adjectives, adverbs and words that convey feelings).
- Students use a thesaurus to generate a list of antonyms and synonyms for the words found in their original list to help generate imagery suitable to the lyrics. Using the generated list, students create a short story to accompany the music and words.
- Students then take their story line and create a storyboard for their animation. Remind students that their story line and storyboard should reflect the music they have selected.
- The teacher demonstrates the basic tools of 2-D animation software using a computer projection system.
- Students use their story line and storyboard to create a short animation.
- The teacher demonstrates for students the various means for assembling animation and audio (traditional print to video and audio dubbing; desktop video or multimedia package; and other means of electronic distribution, e.g., CDs).
- Students add music to their completed animation.
- Students share finished animations.

Assessment/Evaluation Techniques

- Pencil and paper quizzes can be employed for theoretical material such as how visual images interact with audio signals to create cohesive final animations.
- Observations of the production process are recorded on checklists.

-
- The final summative assessment is allocated to the individual student, peer, and teacher.
 - Various technical and aesthetic categories should be considered as part of the final mark depending on the final use of the animation.
 - Observation checklists and student conferences, relevant to the available equipment, are used to evaluate the processes of image capture.
 - Diagnostic assessment includes students' awareness of animation concepts.
 - Summative assessments of completed lists and of the finished product are used.
 - Summative assessment of students' knowledge with a unit test.

Accommodations

- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs can be given longer timelines for completion of this activity.
- Students create a semantic web to categorize the feelings, images, and colours they associate with the selected poem or song.
- Students work with a partner or in small groups.
- Students create a flipbook.
- Students compose and record their own music to add to the animation.
- Peer tutoring is given to those students who need extra help.
- Student-to-student discussion and teacher-to-student conferencing should occur throughout.
- Peer tutors assist students with special needs with the handling of equipment.

Resources

Books

Hahn, Don. *Animation Magic Book*. New York: H.B. Fenn & Co., 1998. ISBN 0786830727

Laybourne, Kit. *The Animation Book*. Indianapolis: The Crown Publishing Group, 1998. ISBN 0517886022

Web Sites

Tutorials

<http://www.AutoDesk.com>

Animation clips and cels

<http://www.animationstand.com/gallery>

Animation clips and cels

<http://www.movingpixco.com>

Digital Imaging Magazine

<http://www.digitalimagingmag.com>

A good source of digital animation.

Digital Video Magazine

<http://www.dv.com>

A good source of digital animation.

Interactive site that provides tutorials, tips, and articles

<http://www.webmonkey.com>.

Sample animations

http://www.warnerbrothers.com/home_moz3_day.html

Activity 3: 2-D Original Story/Cartoon

Time: 330 minutes

Description

Individually or in groups, students research a variety of short stories and cartoons to develop an understanding of how a short piece of work is developed. They are encouraged to improve their literacy skills by writing a short story or a children's cartoon. Students investigate how visual images are created to emphasize the story and how visual images interact with audio signals to create final animated films. Using storyboards, students develop the story line with titles and image sequences, then create the story using animation software. They transfer the computer file to video and add sounds effects, voice, and music in order to construct a short animated film.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.03G - identify and describe the basic techniques required to produce animations and audio-video production;

SPV.02G – produce audio-video, and/or animated productions.

Specific Expectations

TF1.06G - outline the procedures required to create audio-video, audio, and animated productions;

TF1.07G - outline the steps used to edit audio-video, audio, and animated productions;

SP1.07G - create simple animations using video cameras;

SP1.08G - edit audio-video and/or animated productions;

IC1.01G - identify strengths and weaknesses of graphic, electronic, and live communications;

IC1.05G - demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- Teachers should discuss acceptable content with students prior to beginning the activity.
- Respect for each student's individuality and creativity should be stressed.
- Teachers should prepare quick reference sheets for animation software, storyboarding (if students have not done video production), and video editing with audio dubs.
- Cross-curricular learning should be stressed with a link to English writing and Visual Arts.
- Discuss with students, prior to viewing finished animated films, the importance of respecting others and their work. Watching the films should be entertaining and students should not be critical of work done by others.
- A projector or large screen television are preferred for viewing the films.
- Students are to observe copyright laws and the correct use of any copyrighted materials.

Prior Knowledge Required

- Computer animation software – Students should have mastered some aspects of animation software in previous activities and in Integrated Technologies.
- Computer Graphics – Students should have mastered some aspects of *CorelDRAW*TM in previous activities and in Integrated Technologies.
- Brainstorming
- Writing skills

Teaching/Learning Strategies

(Whole group)

- Teachers should introduce samples of animated short films based on other short stories, show corresponding samples of student work, and outline the process by which they arrived at the final animation.
- Teachers should then introduce the concepts of establishing plot, story line, character development, and how interest is developed in an animated film.
- Discuss and review the elements of writing a short story (this may be done as a cross-curricular activity with English).
- Teachers should review software use of *Autodesk Animator* and *CorelDRAW™*, then introduce (or review) the use of video editing equipment and adding audio to computer-generated images.
- The teacher reviews the criteria for this activity with the students (Appendix 3.3a).

(Individual)

- Students investigate new tools in the animation software by working through tutorials (moving objects with paths, tweening, clipping, magnet, titling, and using GIF files). As students become comfortable with the software, they may begin to formulate their final story.
- Students develop a storyboard complete with audio and transfer or develop the story with animation software.
- Once the animation is complete students add sound effects, voice over, and music (on computer or in video edit suite).

(Whole group)

- The class watches the final animations together. The teacher stresses that this is a positive, entertaining activity and respect for the work of others is important.
- After watching the videos a discussion of the positive aspects of the project should be held, as well as a discussion about what students would change if they had more time.

Assessment/Evaluation Techniques

- Paper and pencil test- terms, definitions, and procedures
- Roving conferencing
- Diagnostic assessment includes students' awareness of animation concepts
- Summative assessment of completion of worksheets and tutorial exercises
- Summative assessment of finished animation
- Summative assessment of students' knowledge with a unit test

Accommodations

- Students should be encouraged to develop more detailed stories and to add computer graphics (such as GIFs they designed as backgrounds and as part of the final animation).
- Students may act as peer mentors for software programs.
- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs can be given appropriate timelines for completion of this activity.
- Students may be given finished short stories to work with if necessary.
- Students work with a partner or in small groups.
- Vary the lengths of the animation.
- Students may create a flipbook instead.

-
- For enhancement, students compose and record their own music to add to the animation.
 - Peer tutoring is given to those students who need extra help.
 - Student-to-student discussion and teacher-to-student conferencing should occur throughout.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software tutorials and manuals

Books

Culhane, S. *Animation from Script to Screen*. ISBN 0312050526

Morrison, M. *"Becoming a Computer Animator", Bring Illustrations to Life*. Sams Publishing. ISBN 0-672-30463-5

Streel, R. *"Computer Animation: A Whole New World: Ground Breaking Work from Today's Top Animation Studios"*. ISBN 156493772

Web Sites

Tutorials

<http://www.AutoDesk.com>

Animation clips and cels

<http://animationstand.com/gallery>

Animation clips and cels

<http://movingpixco.com>

Activity 4: Web Animations

Time: 330 minutes

Description

Students produce two-dimensional animations that can be viewed on the web. Using student artwork, scanned images, paint and illustration software, and digitally captured images, students develop graphic resources. Using web animation software, students import and animate their resources. Completed animations are inserted into existing web pages. New knowledge is developed in resource management and data transfer.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.02G – identify and describe the basic techniques required to produce animations and audio-video productions;

SPV.02G – produce audio-video and/or animated productions;

SPV.03G – compose, capture, and process still images;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

- TF1.01G – explain the techniques used to produce technical drawings and illustrations;
- TF1.05G – describe various video recording techniques;
- TF1.07G – outline the procedures required to create audio-video, audio, and animated productions;
- SP1.07G – create simple animations using video cameras;
- SP1.08G – edit audio-video and/or animated productions;
- IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- All student work must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students are expected to keep a daily log sheet recording brief notes of their accomplishments each day and outlining any future needs that this activity requires.
- Students are to be made aware of copyright laws and correct use of any copyrighted materials.
- Cross-curricular link to Visual Arts, Business, and English Media.
- Links made to Unit 4: Information Displays and Environments.
- The teacher creates web page for students to insert animations and a file of web animations.

Prior Knowledge Required

- An understanding of capturing and manipulating still images
- An understanding of the principles of design
- Basic computer skills

Teaching/Learning Strategies

- The teacher shows examples of web animations.
- Students analyse the samples of animations on the web and discuss, as a class, the merits and shortcomings of each.
- The teacher demonstrates the basic tools of the web animation software using a computer projection system.
- Students select/create and digitize an image to animate.
- Students animate the selected image and insert the animation into an existing web page.

Assessment/Evaluation Techniques

- Pencil and paper quizzes can be employed for theoretical material like composition and typographic principles.
- Observations of the production process recorded on checklists generate a substantial amount of formative evaluation.
- The final summative assessment is allocated to the individual student, peer, and teacher.
- Various technical and aesthetic categories should be considered as part of the final mark depending on the final use of the animation.
- Observation checklists and student conferences, relevant to available equipment, are used to evaluate the processes of image capture.
- Diagnostic assessment includes students' awareness of animation concepts.
- Summative assessment of finished product (animated GIF).

Accommodations

- For enhancement, students should be encouraged to develop more detailed animations and add computer graphics (such as GIFs they designed as backgrounds and as part of the final animation).
- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs can be given appropriate timelines for completion of this activity.
- Students work with a partner or in small groups.
- Peer tutoring is given to those students who need extra help.
- Student-to-student discussion and teacher-to-student conferencing should occur throughout.
- Students have opportunities to script and program animations.
- The teacher reviews and/or introduces technical skills if required.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software tutorials and manuals

Books

Culhane, S. *Animation from Script to Screen*. ISBN 0312050526

Eddy, Sandra E. *GIF Animator's Guide*. 1997. ISBN 155828561X

McKelvey, Roy. *Hypergraphics*. London: RotoVision. ISBN: 2-88046-313-0

Morrison, M. *"Becoming a Computer Animator", Bring Illustrations to Life*. Sams Publishing. ISBN 0-672-30463-5

Streel, R. *"Computer Animation: A Whole New World:" Ground Breaking Work from Today's Top Animation Studios*. ISBN 156493772

Web Sites

Tutorials

<http://www.AutoDesk.com>

Animation clips and cels

<http://animationstand.com/gallery>

Animation clips and cels

<http://movingpixco.com>

Interactive site that provides tutorials, tips, and articles

<http://www.webmonkey.com>.

Sample animations

http://www.warnerbrothers.com/home_moz3_day.html

Appendix 3.1a

Animated Title Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.02G, TF1.06G Identify and describe the basic techniques used to produce animations and audio-video productions	- is able to identify and describe few of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe some of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe most of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe all of the basic techniques used to produce animations and audio-video productions
TFV.03G, TF1.08G Identify and describe the processes of capturing still images	- is able to identify and describe few of the processes of capturing still images	- is able to identify and describe some of the processes of capturing still images	- is able to identify and describe most of the processes of capturing still images	- is able to identify and describe all of the processes of capturing still images
Thinking/Inquiry SPV.02G, SP1.08G, TF1.07G Produce audio-video and/or animated productions	- edits audio-video and/or animated productions with limited effectiveness	- edits audio-video and/or animated productions with moderate effectiveness	- edits audio-video and/or animated productions with considerable effectiveness	- edits audio-video and/or animated productions with a high degree of effectiveness
Communication ICV.03G, IC1.04G Identify career opportunities and develop appropriate education plans	- identifies career opportunities and develops an appropriate education plan with limited effectiveness	- identifies career opportunities and develops an appropriate education plan with moderate effectiveness	- identifies career opportunities and develops an appropriate education plan with considerable effectiveness	- identifies career opportunities and develops an appropriate education plan with a high degree of effectiveness
Application SPV.02G, SP1.07G, SP1.08G Produce audio-video and/or animated productions	- edits audio-video and/or animated productions with limited effectiveness	- edits audio-video and/or animated productions with moderate effectiveness	- edits audio-video and/or animated productions with considerable effectiveness	- edits audio-video and/or animated productions with a high degree of effectiveness
Application SPV.03G, SPV.04G, SP1.05G, SP1.06G, SP1.09G Use computer graphics software	- generates animation using computer software with limited effectiveness	- generates animation using computer software with moderate effectiveness	- generates animation using computer software with considerable effectiveness	- generates animation using computer software with a high degree of effectiveness

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 3.3a

Original Story/Cartoon Project Criteria

Computer animation is fast becoming an acceptable form for depicting stories both serious and funny. An animated story and a cartoon are very different.

- A cartoon is a drawing depicting a humorous situation. The cartoon may be one drawing with a caption, a comic strip, or an animated cartoon. Cartoons may be humorous or satirical (satire uses irony and wit to expose wickedness) but are often thought of as the Saturday morning cartoons that young children enjoy.
- A story narrates an event. A story may be humorous, sad, or serious.

Cartoons and stories must be interesting. Both should have a plot with interesting characters. Brainstorm ideas and discuss them with your classmates and teachers

Steps

- Write the story or cartoon – how will you keep the interest of the viewer.
- Develop your story into a storyboard.
- Include all of the sound effects and music in the audio portion of the storyboard.
- Make sure to include the title and credits in the storyboard.
- Develop your animation in *Animator Pro*.
- Once the animation is complete, add audio (use the video editor to do an audio dub or use *SoundBlaster* to record your audio).
- Put final video on videotape.

Animation Requirements

Your final animation must include the following:

- titling;
- a minimum of one GIF imported from *CorelDRAW™* or other software;
- movement using optics – track, paths, or clocked;
- credits (thank everyone who helped you);
- audio (may be music only but must enhance the story).

Submission Requirements

- Title Page – include graphics from your animation, your name and date
- Your storyboards
- Your final animation

Appendix 3.3b

Original Story/Cartoon Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.02G, TF1.06G Identify and describe the basic techniques used to produce animations and audio-video productions	- is able to identify and describe few of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe some of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe most of the basic techniques used to produce animations and audio-video productions	- is able to identify and describe all of the basic techniques used to produce animations and audio-video productions
TFV.03G, TF1.08G Identify and describe the processes of capturing still images	- is able to identify and describe few of the processes of capturing still images	- is able to identify and describe some of the processes of capturing still images	- is able to identify and describe most of the processes of capturing still images	- is able to identify and describe all of the processes of capturing still images
Thinking/Inquiry SPV.02G, SP1.08G, TF1.07G Produce audio-video and/or animated productions	- edits audio-video and/or animated productions with limited effectiveness	- edits audio-video and/or animated productions with moderate effectiveness	- edits audio-video and/or animated productions with considerable effectiveness	- edits audio-video and/or animated productions with a high degree of effectiveness
Communication ICV.03G, IC1.04G Identify career opportunities and develop appropriate education plans	- identifies career opportunities and develops an appropriate education plan with limited effectiveness	- identifies career opportunities and develops an appropriate education plan with moderate effectiveness	- identifies career opportunities and develops an appropriate education plan with considerable effectiveness	- identifies career opportunities and develops an appropriate education plan with a high degree of effectiveness
Application SPV.02G, SP1.07G, SP1.08G Produce audio-video and/or animated productions	- edits audio-video and/or animated productions with limited effectiveness	- edits audio-video and/or animated productions with moderate effectiveness	- edits audio-video and/or animated productions with considerable effectiveness	- edits audio-video and/or animated productions with a high degree of effectiveness
SPV.03G, SPV.04G SP1.05G, SP1.06G, SP1.09G Use computer graphics software	- generates animation using computer software with limited effectiveness	- generates animation using computer software with moderate effectiveness	- generates animation using computer software with considerable effectiveness	- generates animation using computer software with a high degree of effectiveness

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Unit 4: Information Displays and Environments

Time: 22 hours

Unit Description

Students plan and produce environments for information displays using a variety of software, hardware, and physical materials. Students create spaces and employ electronic resources in the production, presentation, and distribution of information. Students apply ethical standards and policies in their productions as they explore further education and career opportunities in this field.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations: TFV.01G, TFV.02G, TFV.03G, TFV.04G, SPV.01G, SPV.02G, SPV.03G, SPV.04G, ICV.01G, ICV.02G, ICV.03G.

Specific Expectations: TF1.01G, TF1.02G, TF1.06G, TF1.07G, TF1.11G, SP1.01G, SP1.05G, SP1.06G, SP1.07G, SP1.08G, SP1.09G, SP1.11G, IC1.01G, IC1.02G, IC1.03G, IC1.04G, IC1.05G.

Activity Titles (Time + Sequence)

Activity 1	Interactive Presentation	330 minutes
Activity 2	Graphical Displays	330 minutes
Activity 3	Web Page Design with Streaming Audio Visuals	330 minutes
Activity 4	Computer Math Game	330 minutes

Prior Knowledge Required

- Students should be familiar with the operation of a computer and be able to save, import, export, and create files. Experience with digital audio recording and editing is also beneficial.
- Students benefit from skills acquired in the Integrated Technologies Stop Action Animation activity and Computer Game activities or any other computer-based communications activity. Writing skills and creativity are an asset.
- Understanding of composing and capturing still images
- English skills
- A basic knowledge of sketching and prototype drawings

Unit Planning Notes

- The activities in this unit require teachers to become familiar with the broad range of digital technologies required to capture and manipulate still and moving images.
- Activities in this unit explore a variety of information display and environment methods as well as the safe and correct use of related equipment.
- Computer literacy and fundamental knowledge of web authoring and design (HTML) and web browser skills are essential to conduct the activities.
- Teachers need to become well versed with all of the hardware and software used in each activity.
- A variety of professional and student productions promote the desired standard of completion.
- It is essential that all software programs and external devices are compatible to ensure success.
- Cross-curricular links can be explored with Fine Arts character animations or English media literacy activities.
- All student work must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.

-
- Teachers address safety/censorship on the Internet by implementing School Board policies on appropriate student use and access to Internet services while gathering activity-specific resources.
 - The activities depend on the equipment that is available in the school. In order to ensure that activities are authentic, the contents of this unit should be adapted to the technology that is available locally.
 - The teacher should investigate the software that is accessible and available at the school site or available through the board system.
 - The teacher must stress the correct and safe use of all equipment and materials throughout the activities.
 - Appropriate teacher-produced and collected resources and other support materials should be gathered, including previous student project work (multimedia presentations, games, web sites, etc.) and industry samples.
 - Each activity provides the opportunity for students to focus on specific career options and provide insights into the skills required for a variety of related professions.
 - Teaching/learning strategies that allow for career links in the unit activities should be investigated (e.g., job shadowing, career and education research, field trips, and guest speakers).
 - Students must observe copyright laws and the correct use of any copyrighted materials.

Teaching/Learning Strategies

- The activities in this unit require whole class lessons, small group lessons, and individual instruction geared to specific problems during the production.
- Information displays combine a variety of academic and applied learning strategies, including independent and group work, problem solving, co-operation, communication, time management, brainstorming new ideas, and presenting. The student-centred, activity-based mode of delivery provides students opportunities to develop individual and group skills.
- Throughout this unit the teacher:
 - monitors and observes all student activity;
 - speaks with students regularly to provide help when problems arise;
 - reviews project expectations;
 - modifies project activities to reflect equipment availability.

Assessment and Evaluation

- Assessment is an ongoing daily process that may include: daily/weekly log, regular practical and theory tests and/or quizzes, project evaluation criteria, participation in discussions, conferences, self and/or peer critiques, and activity rubrics.
- Assessment and evaluation are based on testing, product development, and product delivery, using a variety of media, and include both diagnostic and summative methods.

Resources

Resources required to deliver this unit include computers with Internet access and software capable of manipulating text and images (still and moving), sound mixing, and editing. Relevant software manuals and step-by-step procedure lists need to be available throughout the unit.

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals
Software manuals and tutorial exercises
Various samples of activity project work

Books

- Botto, Francis. *PC Multimedia: An Introduction to Authoring Applications*. Butterworth Heinemann, 1994. ISBN 0750620838
- Dean, Damon. *FrontPage 2000 for Dummies Quick Reference*. New York: IDG Books Worldwide, 1999. ISBN 0764504991
- Fisher, Scott. *CD Rom Guide to Multimedia Authoring*. ASIN 0122575679
- Get Going with Power Point 97 for Windows*. New York: Technical Learning Resources, Incorporated, 1997. ISBN 1887391177
- Gredler, Margaret. *Designing & Evaluating Games & Simulations*. Connecticut: Gulf Publishing Company, 1994. ISBN 0884151573
- Hunt, Wayne and Gerry Rosentsweig. *Designing & Planning Environmental Graphics*. New York: Madison Square Press, 1995. ISBN 0942604350
- Hyman, Michael. *Dynamic Html for Dummies*, 2nd ed. Toronto: Harper Collins Canada, 1998. ISBN 0764504673
- Lowe, Doug. *Powerpoint 97 For Windows For Dummies*. New York: IDG Books Worldwide. ISBN 0764500511
- Levine Young, Margaret, John Levine, and Carol Baroudi. *The Internet for Dummies*. New York: IDG Books Worldwide, 1998. ISBN 0764505068
- Maran Graphics. *Creating Web Pages with HTML Simplified*. 2nd ed. Foster City: IDG Books Worldwide, Inc. ISBN: 0-7645-6065-7-0
- No Author. *Creating Dynamic Websites: A Webmaster's Guide*. Addison Wesley Publishing Co., 1997. ISBN 0201442078
- No Author. *Interactive Multimedia Authoring and Publishing*. Prentice-Hall, 1998. ISBN 0131318632
- Rockport Publishers Editorial Staff. *Computer Graphics 2: More of the Best of Computer Art & Design*. London: Rockport Publishers, 1994. ISBN 1564960900
- Shepherd, John C. and David Colaizzi. *Authoring Authorware: A Practical Guide*. Prentice Hall, 1988. ISBN 0136602266
- Szeto, Gong, ed., Matthew Butterick, Jeanne Mekirchy-Spencer, and David Karam. *Designing Interactive Websites*. Hayden Books, 1997. ISBN 1568303114
- Weadock, Glenn. *Intranet Publishing for Dummies*. New York: IDG Books Worldwide, 1997. ISBN 0764502220
- White, John. *Designing 3D Graphics: How to Create Real-Time 3D Models for Games* (with CD ROM). Toronto: John Wiley & Sons Canada, Limited. ISBN 0471149268
- Wilhelm, Jeffrey D., Paul Friedmann, and Julie Erickson. *Hyperlearning: Where Projects, Inquiry, and Technology Meet*. Stenhouse Publishing, 1998. ISBN 1571100547
- Wolfgram, Douglas E. *Creating Multimedia Presentations*. Que Corporation, 1994. ISBN 1565296672

Web Sites

<http://www.staffs.ac.uk/cital/>

This site covers everything related to the use of communications and information technology in the teaching and learning processes, and includes recommended online journals, software, links to computer assisted learning, as well as information on computer-mediated communication.

<http://collections.ic.gc.ca/curriculum/gdesign/gdesign.htm>

This site provides a teaching unit on graphic design including the aims, objectives, descriptions, and length of time of the unit.

<http://www.webmonkey.com>

An interactive site that provides tutorials, tips, and articles on authoring, multimedia, design, e-business, programming, backend, and jobs. Individuals are introduced to the basics of HTML and Java Script on site.

<http://www.graphic-design.com>

The Design and Graphic Center focusses on visual communications design. It has tips and frequently asked questions about web design, typography, graphics, writing, printing, and publication.

<http://www.cudenver.edu/~pantone/pofd/tldd001.htm>

A slide presentation designed by Phil Antonelli at the University of Colorado, Denver

<http://creativity.syr.edu/cgr332/WWWDesign/Principles.html>

A slide presentation by Bonnie Mitchell at the University of Syracuse. This site presents the principles of design and layout as they pertain to paper versus the World Wide Web.

<http://www.howstuffworks.com>

A detailed site by Marshall Brain that provides information on the workings of several commonly found items in our world.

<http://www.learningspace.org/tech/tech.html>

This web site provides directions and tutorials on various technology skills as well as how to create classroom or school web pages.

<http://www.chesworth.com/pv/games/index.html>

This site provides the basics and steps for game design as well as C++ programming.

<http://www.schoolnet.ca/aboriginal/lessons/>

A lengthy list of web sites related to the Internet and the teaching of Technology

<http://home.multiweb.net/~pwijdeven/vb/webring.html>

<http://members.aol.com/Metfrk/vbmain.html>

<http://www.geocities.com/SiliconValley/Horizon/3950>

<http://www.geocities.com/SiliconValley/Vista/7187/vbtutor.htm>

<http://www.mvps.org/vbnet>

<http://www.programmingtutorial.com>

<http://www.raindata.com>

<http://www.vbexplorer.com>

<http://www.vbi.org/library>

<http://www.vbworld.net/beginning>

<http://www.windx.com>

Activity 1: Interactive Presentation

Time: 330 minutes

Description

Working in an authoring environment (e.g., *Hyperstudio*, *Flash*), students develop an interactive presentation on an approved topic. Following a design process that includes research and storyboarding, students assemble resources (video, audio, graphics, and text) in an interface that employs user controls. Working with a partner, students demonstrate co-operative management skills in addition to knowledge of web- and/or computer-based presentations.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.03G – identify and describe the processes of capturing still images;

TFV.04G – demonstrate understanding of electronic communications equipment;

SPV.02G – produce audio-video and/or animated productions;

SPV.03G – compose, capture, and process still images;

SPV.04G – use computer graphics software competently;

ICV.01G – explain the benefits, risks, and ethics associated with communications technology;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.02G – identify basic composition and typographic principles;

TF1.06G – outline the procedures required to create audio-video, audio, and animated productions;

TF1.07G – outline the steps used to edit audio-video, audio, and animated productions;

SP1.05G – create various effects using video and digital camera techniques;

SP1.08G – edit audio-video and/or animated productions;

SP1.09G – create still images using composition techniques;

SP1.10G – process and obtain prints and film and/or digital output;

IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communications;

IC1.02G – operate equipment safely;

IC1.04G – identify career opportunities and develop appropriate education plans;

IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- This activity is an exploration of multimedia authoring. In contrast to the inclusion of multiple media in a presentation, multimedia implies technologies that allow users to control the flow of information. For that reason, this activity cannot be constructed within applications that are serial in nature. As distinct from a slide show, which is designed for a passive receiver, the interactive presentation requires an active user who determines the flow of information through click events. Consequently, in addition to a sufficient number of multimedia computers for a class to work in pairs, the most important resource is an authoring tool.
- This activity has been successfully constructed with *Hyperstudio*, but any technology that allows for the integration of text, sound, and video and use of objects to initiate events will do.
- Tools include any web page development application capable of handling video and audio. Other necessary tools include: applications for image and video editing; a capture card for motion and still video capture; a scanner and digital camera to digitize images; a computer lab on a school or peer-to-peer network capable of storing and accessing large video and image files.

Prior Knowledge Required

- Students should be familiar with storyboarding, principles of graphic design, and image, sound, and video editing.
- Familiarity with web page design and development tools is useful if the medium of presentation is to be the web.

Teaching/Learning Strategies

- Students are asked to design and produce an interactive presentation on a topic of their choice.
- Using a projection device, the teacher presents past student work, discusses strengths and weaknesses, and then provides a period of discussion for students to identify interests and find partners.
- Project guidelines are then presented. These include preparation of two screens or pages, each demonstrating or including the following:
 - good graphic and multimedia design;
 - use of a graphic background image;
 - consistent navigation tools;
 - a load event, such as a sound, video, or animation;
 - text and graphics;
 - feedback mechanisms on click;
 - an active area (launching sound or video clip, or calling text);
 - inclusion on last screen/page of author credits and bibliographical citations.

Steps in Activity

Learning to Use the Authoring Tool

- In pairs, students complete exercises or tutorials in which the authoring program is explored. The tutorial should be a self-paced activity that results in the creation of a presentation similar to that which the students have been asked to create.
- Upon completion students should have used as many of the commands and procedures as are necessary to complete their own presentation.
- Students save their tutorial work for evaluation on their ability to complete the instructions fully.

Principles of Multimedia Design

- Individually, students explore the design principles of multimedia authorship through printed or online resources. Possible topics include basic layout, providing feedback, interface button design, and resource management. A written question sheet may be completed for evaluation.

Research Phase

- Having chosen a topic and received approval, partners begin to assemble materials needed for their presentation, including sounds, video clips, photos, and textual information. Students should keep track of sources on a prepared form to be added to their submission portfolio.
- In addition to Internet and library resources, students may be encouraged to use personal materials such as photos and letters if the topic permits. Textual content of the project should be completed to a first draft stage before proceeding.

Design Phase

- Using a sheet of letter-size paper, students plan each screen of their presentation. Separate sheets allow each partner to take responsibility for the planning of one screen.
- Like a storyboard, the plan should provide a visual approximation of the screen, noting images, arrangement, typography, interactive controls, and events launched on click.
- Textual content moves through draft to final form; final selections of sounds and images are made.

Production

- Construction of the presentation requires the preparation of backgrounds and controls, editing of images, sound, and video, and creation of text objects.
- Each partner should be responsible for creating the screen they designed so that each is able to demonstrate mastery of the required skills.
- The precise manner in which the interface is built varies with the application used, but should not proceed without a documented plan of attack. This may be added to the project portfolio as evidence of application of a design process.

Presentation and Peer Assessment

As the project requires the input of a user, the activity concludes with students engaging with one another's presentations, providing commentary and assessment by means of questionnaires located at each workstation.

- Students individually complete Communication in Our World worksheet (Appendix 4.1a) and write a paragraph on the role of communication in our world today.
- As a class, students discuss the importance of interactive presentations in communicating information today.

Assessment/Evaluation Techniques

- Assessment and evaluation are based on testing, product development, and product delivery using a variety of media, using both diagnostic and summative methods.
- Assessment is an ongoing daily process that will include: log and/or journal entries, portfolios, regular practical and theory tests and/or quizzes, activity worksheets and exercises, project evaluation criteria, student and/or group presentations, conferences, self and/or peer critiques, and activity checklists and rubrics (Appendix 4.1b).

Accommodations

- Project requirements may accommodate needs of students by providing partially completed project blanks, which students fill in with their own work, or by eliminating some technical requirements, such as the video component.
- Students with special needs can be given appropriate timelines for completion of this activity.
- Simplified screens that use colours instead of images, or images rather than words, can make the activity accessible to a wide range of abilities.
- Requiring more than two screens or an exploration of different authoring technologies may provide enrichment.
- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Peer tutors assist students with special needs with the handling of equipment.
- Students may choose to add music to their interactive presentation.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Books

Botto, Francis. *PC Multimedia: An Introduction to Authoring Applications*. Butterworth Heinemann, 1994. ISBN 0750620838

Fisher, Scott. *CD Rom Guide to Multimedia Authoring*. ASIN 0122575679

No Author. *Creating Dynamic Websites: A Webmaster's Guide*. Addison Wesley Publishing Co., 1997. ISBN 0201442078

No Author. *Interactive Multimedia Authoring and Publishing*. Prentice-Hall, 1998. ISBN 0131318632

Shepherd, John C. and David Colaizzi. *Authoring Authorware: A Practical Guide*. Prentice Hall, 1988. ISBN 0136602266

Szeto, Gong, ed., Matthew Butterick, Jeanne Mekirchy-Spencer, and David Karam. *Designing Interactive Websites*. Hayden Books, 1997. ISBN 1568303114

Wilhelm, Jeffrey D., Paul Friedmann, and Julie Erickson. *Hyperlearning: Where Projects, Inquiry, and Technology Meet*. Stenhouse Publishing, 1998. ISBN 1571100547

Wolfgram, Douglas E. *Creating Multimedia Presentations*. Que Corporation, 1994. ISBN 1565296672

Web Sites

<http://www.mcli.dist.maricopa.edu/authoring>

A comprehensive web site dealing with authoring principles and tools can be found at

<http://www.staffs.ac.uk/cital/>

This site covers everything related to the use of communications and information technology in the teaching and learning processes, and includes recommended online journals, software, links to computer-assisted learning, as well as information on computer-mediated communication.

<http://collections.ic.gc.ca/curriculum/gdesign/gdesign.htm>

This site provides a teaching unit on graphic design including the aims, objectives, descriptions, and length of time of the unit.

<http://www.webmonkey.com>

An interactive site that provides tutorials, tips, and articles on authoring, multimedia, design, e-business, programming, backend, and jobs. Individuals are introduced to the basics of HTML and Java Script on site.

Activity 2: Graphical Display

Time: 330 minutes

Description

Students research a variety of information and advertising graphical displays. They analyse the success of a variety of display types and explore the possibilities of using 2-D surface design to create 3-D displays. They develop a graphical display to be used for a specific purpose (event/promotion). They develop rough sketches and final scale prototype drawings and fabricate the final display using available resources.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.01G – identify and describe the techniques used to produce print media;

TFV.04G – demonstrate understanding of electronic communication equipment;

SPV.01G – prepare camera-ready artwork for print and post-production;

SPV.03G – compose, capture, and process still images;

SPV.04G – use computer graphics software competently;
ICV.01G – explain the benefits, risks, and ethics associated with communications technology.

Specific Expectations

TF1.01G – explain the technique used to produce technical drawings and illustrations;
TF1.02G – identify basic composition and typographic principles;
SP1.11G – enhance or create sets, lighting schemes, and information displays;
IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communication;
IC1.02G – operate equipment safely;
IC1.05G – demonstrate knowledge of ethical standards and policies for communication technology.

Planning Notes

- All student work must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students are expected to keep a daily log sheet recording brief notes of their accomplishments each day and outlining any future needs that this activity requires.
- Students are to be made aware of copyright laws and the correct use of any copyrighted materials.
- Create overhead with Basic Principles of Design (Appendix 4.2a).
- Collect current popular magazines and newspapers to assist with layout design.
- Assemble materials required for learning centres such as newspaper and/or magazine articles, government and/or national organization material, and current music.
- The teacher generates handouts for Strategy 3 and obtains a list of up-coming school events (e.g., Parents' Night, Halloween Dance, team try-outs, music concert).

Prior Knowledge Required

- An introductory understanding of desktop-publishing software
- An introductory understanding of composing and capturing still images

Teaching/Learning Strategies

- Students brainstorm various elements that contribute to the visual appeal of a graphical display. Teacher records responses on the board.
- As a class, students discuss the principles of layout. Students copy Basic Principles of Design from the overhead.
- In pairs, students evaluate a layout chosen by the teacher. Students complete the Assessing Good Design worksheet.
- Students select a school event from the list provided by the teacher. Using a desktop-publishing program, students individually design a flyer/pamphlet/newsletter to advertise the upcoming event.
- After reviewing the principles of design, students work in groups of three or four to design a graphical display to be used for future school events.
- Students explore ways in which the 2-D surface design can be used to create 3-D displays.
- Students develop rough sketches and final scale prototype drawings of their display.
- Students fabricate the final display using available materials. Finished displays are mounted throughout the school.

Assessment/Evaluation Techniques

- Diagnostic assessment includes students' awareness of design principles.
- Summative assessment of completed worksheets.
- Summative assessment of finished product (flyer/brochure).
- Summative assessment of students' knowledge with a unit test.
- Summative assessment of finished display (Appendix 4.2b).

Accommodations

- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs can be given appropriate timelines for completion of this activity.
- Peer tutoring is offered to students who need extra help.
- Student-to-student discussion and teacher-to-student conferencing should occur throughout.
- Peer tutors assist students with special needs with the handling of equipment.
- For enrichment, students may use this technology to develop an entrepreneurial venture for another subject area or for the school.
- Student works with a partner to create a flyer/pamphlet instead of a display.

Resources

Books

Hunt, Wayne and Gerry Rosentsweig. *Designing & Planning Environmental Graphics*. New York: Madison Square Press, 1995. ISBN 0942604350

Lowe, Doug. *Powerpoint 97 For Windows For Dummies*. New York: IDG Books Worldwide. ISBN 0764500511

Rockport Publishers Editorial Staff. *Computer Graphics 2: More of the Best of Computer Art & Design*. London: Rockport Publishers, 1994. ISBN 1564960900

Web Sites

<http://www.graphic-design.com>

The Design and Graphic Center focusses on visual communications design. It has tips and frequently asked questions about web design, typography, graphics, writing, printing, and publication.

<http://www.cudenver.edu/~pantone/pofd/tldd001.htm>

A slide presentation designed by Phil Antonelli at the University of Colorado, Denver

<http://www.creativity.syr.edu/cgr332/wwwDesign/Principles.html>

A slide presentation by Bonnie Mitchell at the University of Syracuse. This site presents the principles of design and layout as they pertain to paper versus the World Wide Web.

Activity 3: Web Page with Technologies

Time: 330 minutes

Description

Students explore the principles of electronic data transmission by designing a web page for streaming audio and video. After preparing the text, graphic, and A/V resources of their web page, students experiment with different compression schemes to facilitate real-time playing over the Internet. As well as learning to manage resources requiring high transfer rates, students develop understanding of digital audio and video editing.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.02G – identify and describe the basic techniques required to produce animations and audio-video productions;

TFV.04G – demonstrate understanding of electronic communication equipment;

SPV.02G – produce audio-video and/or animated productions;

ICV.01G – explain the benefits, risks, and ethics associated with communications technology.

Specific Expectations

TF1.06G – outline the procedures required to create audio-video, audio, and animated productions;

TF1.07G – outline the steps used to edit audio-video, audio, and animated productions;

SP1.05G – create various effects using video and digital camera techniques;

SP1.08G – edit audio-video and/or animated productions;

IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communication.

Planning Notes

- All student work must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students are expected to keep a daily log sheet recording brief notes of their accomplishments each day and outlining any future needs that this activity requires.
- Students are to observe copyright laws and the correct use of any copyrighted materials.
- Create overhead/handout of the Basics of Web Authoring and Design (HTML) and a list of web tutorials available on the World Wide Web.

Prior Knowledge Required

- A working knowledge of HTML
- Computer literacy skills
- Understanding of desktop-publishing software
- Understanding of composing and capturing still images
- Web browser skills/inquiry skills
- Co-operative skills
- Organizational skills

Teaching/Learning Strategies

- The teacher introduces the multimedia software designed to assist in the streaming of audio and video and provides students with handout summarizing features and steps of the software.
- Students work through exercises designed to familiarize them with the process of streaming video and audio.

-
- Working in pairs, students select one organization to design a web site for and research the selected organization.
 - Students use the collected information and create a web site. They conference with teacher to brainstorm suggestions for improving their site.
 - Students implement suggestions and stream video and music for the site.

Assessment/Evaluation Techniques

- Assessment and evaluation are based on testing, product development, and product delivery using a variety of media, using both diagnostic and summative methods.
- Assessment is an ongoing daily process that will include: log/journal entries, portfolios, regular practical and theory tests and/or quizzes, activity worksheets and exercises, project evaluation criteria, student/group presentations, conferences, self and/or peer critiques, and activity checklists and rubrics.

Accommodations

- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs can be given appropriate timelines for completion of this activity.
- Peer tutoring is given to those students who need extra help.
- Student-to-student discussion and teacher-to-student conferencing should occur throughout.
- Peer tutors assist students with special needs with the handling of equipment.
- Students incorporate both official languages in their web site.
- Students produce a web site with animated GIFs using the Wizard feature in web animation software.
- For enrichment, students may use this technology to develop an entrepreneurial business for the community, another subject area, or for the school.

Resources

Books

Dean, Damon. *FrontPage 2000 for Dummies Quick Reference*. New York: IDG Books Worldwide, 1999. ISBN 0764504991

Hyman, Michael. *Dynamic Html for Dummies*, 2nd ed. Toronto: Harper Collins Canada, 1998. ISBN 0764504673

Levine Young, Margaret, John Levine, and Carol Baroudi. *The Internet for Dummies*. New York: IDG Books Worldwide, 1998. ISBN 0764505068

Maran Graphics. *Creating Web Pages with HTML Simplified*, 2nd ed. Foster City: IDG Books Worldwide, Inc. ISBN 0-7645-6065-7-0

Weadock, Glenn. *Intranet Publishing for Dummies*. New York: IDG Books Worldwide, 1997. ISBN 0764502220

Web Site

<http://www.howstuffworks.com>

A detailed site by Marshall Brain that provides information on the workings of several commonly found items in our world.

<http://www.webmonkey.com>

An interactive site that provides tutorials, tips, and articles on authoring, multimedia, design, e-business, programming, backend, and jobs. Individuals are introduced to the basics of HTML and Java Script on site.

<http://www.learningspace.org/tech/tech.html>

This web site provides directions and tutorials on various technology skills as well as how to create classroom or school web pages.

<http://www.schoolnet.ca/aboriginal/lessons/>

A lengthy list of web sites related to the Internet and the teaching of Technology.

Activity 4: Computer Math Game

Time: 330 minutes

Description

Students apply design and programming principles to develop and package a simple computer game using an object-oriented language such as Visual Basic. They create and manipulate objects to produce an application appropriate for the development of math skills in children aged five to seven. Students combine computer programming with image generation in the creation of a learning tool that provides practice and monitors performance.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.03G - identify and describe the processes of capturing still images;

TFV.04G - demonstrate understanding of electronic communication equipment;

SPV.03G - compose, capture, and process still images;

SPV.04G - use computer graphics software competently;

ICV.01G - explain the benefits, risks, and ethics associated with communications technology;

ICV.03G - identify career opportunities in the communications field.

Specific Expectations

TF1.02G - identify basic composition and typographic principles;

SP1.09G - create still images using composition techniques;

SP1.11G - enhance or create sets, lighting schemes, and information displays;

IC1.01G - identify strengths and weaknesses of graphic, electronic, and live communications;

IC1.02G - operate equipment safely;

IC1.03G - apply health and safety standards when using products and materials;

IC1.04G - identify career opportunities and develop appropriate education plans;

IC1.05G - demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- The Computer Math Game requires some experience in computer programming.
- It is advisable to do the activity several times with different levels of complexity to provide both models and templates for students (beginner, intermediate, advanced). Teachers provide students with templates appropriate to their level of skill.
- The teacher generates reference sheets for the programming language.

Prior Knowledge Required

- This activity assumes that students are experienced computer users (experienced in a variety of computer applications) and have completed activities in which they have created and edited vector and bitmapped images.

-
- Although no prior knowledge of programming is required, students who have taken Integrated Technologies may have completed a programming activity and be familiar with principles and routines.
 - The dimensions of the activity depend upon the students' level of experience; it is therefore vital to arrive at an understanding of the students' capabilities before finalizing the written requirements, expectations, evaluations, etc.
 - The teacher reviews process for creating and editing vector and bitmapped images.

Teaching/Learning Strategies

- This activity combines previously developed knowledge of computer imaging and typography with a programming language to create a means of displaying information about a user's performance in a repeated task.
- Students produce a math game that requires a user to type the response to either an addition or subtraction problem. A correct response causes a congratulatory image to appear; an incorrect response produces a consolatory one.
- Users must choose between operations (addition or subtraction), between two levels (numbers 1 to 10 or 1 to 100), and decide whether they want the results of attempts tallied and displayed.
- Depending on student interest and experience, the teacher may emphasize one or more aspects of the activity (interface design, programming, or educational uses of technology) and make an exploration of the career opportunities of these aspects part of a summative report.
- Students should work individually on this activity with a template (the activity in varying degrees of completion) adapted by the teacher to their level of programming experience. By making three different templates available (beginner, intermediate, and expert levels), varying abilities can be accommodated and students can be made to feel confident of success.
- The activity proceeds through a series of steps, each of which includes a lesson or demonstration (from the teacher) of skills and knowledge required, followed by time for students to complete the step for their own project.
- Instructions in paper or electronic form are useful for student reference.
- Enlisting senior students as tutors is helpful in keeping students productive.

Activity Steps

Introduction

- The activity begins with a discussion of three completed applications and their code, one each from beginner, intermediate, and expert levels.
- The teacher explains the steps in the development of the application and emphasizes that, although each example differs in level of complexity, each is a significant advance from the producer's starting point and a significant achievement in its own right.
- With a handout, students are provided details about the objectives and requirements of the activity. The teacher checks for understanding by having students write a draft of the Project Specifications section of the Technological Report with which the activity concludes.

Planning

There are two planning phases:

- First, the teacher introduces purposes and symbolic language of a programming flowchart, which students then construct for their own work.
- Having checked and marked the flowchart, the teacher leads students through design of the interface, noting necessary controls and GUI conventions, and reviewing the principles of design introduced in other activities. Students hand in a flowchart and thumbnail sketch of their interface for evaluation.

Preparing Resources

- Students use an image editing and a drawing program to create the graphic files included in their application. They create a background; a banner for the title; plus, minus, and equal signs; and two images for congratulations/consolation messages.
- These resources are evaluated based on effective use of software, planning, and creativity.

Constructing the Application

- The teacher introduces the concept of object-oriented, event-driven programming and provides instruction in the use of the application/language used in the activity.
- After students have made a form with a background in place, the teacher reviews the creation and naming of controls. Students add controls (or paste in controls from supplied template).
- Instruction in selection structure and changing object properties is given, then the code required for the objects and events is reviewed.
- For some students, creating code may be a matter of cut and paste. Other students write their own from written instructions.

Finishing and Packaging the Application

- Creating an executable file and packaging it with necessary resources on a floppy disk finishes the application.
- Among the resources is a Read-Me file that, in addition to providing usage instructions, serves as the platform for their technological report.
- To conclude, students prepare a thumbnail sketch of a disk label design, ensuring its consistency with the design treatment of the program interface. They may use graphics programs and a colour ink-jet printer to produce the labels.
- The teacher provides students with handout outlining objectives and requirements (see Appendix 4-4a).

Assessment/Evaluation Techniques

- Assessment and evaluation are based on testing, product development, and product delivery using a variety of media, using both diagnostic and summative methods.
- Assessment is an ongoing daily process that will include: log and/or journal entries, portfolios, regular practical and theory tests and/or quizzes, activity worksheets and exercises, project evaluation criteria, student and/or group presentations, conferences, self and/or peer critiques, and activity checklists and rubrics (Appendix 4.4b).

Accommodations

- This activity is adaptable to differing levels of experience and to needs of all students.
- Students with special needs may be accommodated with modified requirements, prepared resources, or assistance from senior students.
- An online, self-marking, multiple-choice quiz, written in JavaScript and viewable in any web browser, may provide a simplified alternative, or an alternative in the absence of a programming application. Many web sites offer downloadable scripts and code.
- Requiring the inclusion of sound events, a splash screen, or message boxes in the applications provides enrichment.

Resources

Visual Basic users may find assistance in their schools, textbooks, or on the web.

Physical resources include: workstations for each student equipped with licensed copies of a programming tool; ink-jet printer and self-adhesive labels; scanner; image editing and drawing programs; tutors familiar with the programming language.

Books

Gredler, Margaret. *Designing & Evaluating Games & Simulations*. Connecticut: Gulf Publishing Company, 1994. ISBN 0884151573

Lamothe, Andre. *Windows Game Programming for Dummies*. IDG Books Worldwide, 1998. ISBN 0764503375

Palmer, Scott. *Build Your Own PC Game in 7 Easy Steps Using Visual Basic*. Addison-Wesley, 1996. ISBN 020148911-2

Sprague, Michael. *Using Visual Basic* (Second Edition). South-Western Educational Publishing, 1998. ISBN 0538678860

White, John. *Designing 3D Graphics: How to Create Real-Time 3D Models for Games* (with CD ROM). Toronto: John Wiley & Sons Canada, Limited. ISBN 0471149268

Zak, Diane. *Programming With Microsoft Visual Basic 6.0*. Course Technology, 1999. ISBN 0760010714

Web Sites

<http://home.multiweb.net/~pwijdeven/vb/webring.html>

<http://members.aol.com/Metfrk/vbmain.html>

<http://www.geocities.com/SiliconValley/Horizon/3950>

<http://www.geocities.com/SiliconValley/Vista/7187/vbtutor.htm>

<http://www.mvps.org/vbnet>

<http://www.programmingtutorial.com>

<http://www.raindata.com>

<http://www.vbexplorer.com>

<http://www.vbi.org/library>

<http://www.vbworld.net/beginning>

<http://www.windx.com>

<http://www.chesworth.com/pv/games/index.html>

This site provides the basics and steps for game design as well as C++ programming.

Appendix 4.1a

Interactive Presentation Student Worksheet

Communication in Our World

Here are some key questions to think about:

What is communication?

List different kinds of communication.

In what ways can a painting be a form of communication?

In what ways can music be a form of communication?

How do animals communicate?

What is language?

Why do you need language to communicate?

Is mathematics a form of communication?

In a brief paragraph explain the importance of communication in our world today.

Appendix 4.1c

Interactive Presentation Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.03G, TF1.02G, TF1.06G, TF1.07G Identify and describe the techniques and procedures used to produce interactive presentations	- identifies and describes few of the techniques and procedures used to produce interactive presentations	- identifies and describes some of the techniques and procedures used to produce interactive presentations	- identifies and describes most of the techniques and procedures used to produce interactive presentations	- identifies and describes all of the techniques and procedures used to produce interactive presentations
Thinking/Inquiry TFV.04G Demonstrate understanding of communication hardware and software	- demonstrates limited understanding of communication hardware and software	- demonstrates moderate understanding of communication hardware and software	- demonstrates considerable understanding of communication hardware and software	- demonstrates a thorough understanding of communication hardware and software
ICV.01G, ICV.03G, IC1.01G, IC1.04G Identify career opportunities and develop appropriate education plans	- identifies career opportunities and develops an appropriate education plan with limited effectiveness	- identifies career opportunities and develops an appropriate education plan with moderate effectiveness	- identifies career opportunities and develops an appropriate education plan with considerable effectiveness	- identifies career opportunities and develops an appropriate education plan with a high degree of effectiveness
Communication SPV.04G Use text, sound, and images to communicate information	- uses text, sound, and images to communicate information with limited clarity	- uses text, sound, and images to communicate information with moderate clarity	- uses text, sound, and images to communicate information with considerable clarity	- uses text, sound, and images to communicate information with a high degree of clarity
Application SPV.02G, SPV.03G, SP1.08G, SP1.09G, SP1.10G Use appropriate procedures and equipment to prepare an interactive presentation for web or computer delivery	- uses appropriate procedures and equipment to prepare an interactive presentation for web or computer delivery with limited effectiveness	- uses appropriate procedures and equipment to prepare an interactive presentation for web or computer delivery with moderate effectiveness	- uses appropriate procedures and equipment to prepare an interactive presentation for web or computer delivery with considerable effectiveness	- uses appropriate procedures and equipment to prepare an interactive presentation for web or computer delivery with a high degree of effectiveness
IC1.02G, IC1.05G Observe safety rules and regulations	- operates equipment safely and correctly only with supervision	- operates equipment safely and correctly only with some supervision	- operates equipment safely and correctly	- demonstrates and promotes the safe and correct procedures when operating equipment

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 4.2a

Graphical Displays Student Handout BASIC PRINCIPLES OF DESIGN

What Are Principles of Design?

1. Guidelines used to organize visual elements
2. Tools used to help solve visual problems.
3. Broken all the time

The Six Principles of Design

Rhythm

- Uses repetition to create movement
- Can be created by a pattern
- The individual unit of a pattern is called a "motif"

Balance

- Strives for equality among visual elements
- Two types of Balance: Formal and Informal
- *Formal Balance* – arranges elements symmetrically around the central axis
- *Informal Balance* – is difficult because it is asymmetrical

Proportion

- Deals with size relationship
- Consider:
 - *Scale* – objects that are large appear closer to the reader
 - *Rule of Thirds* – images are more interesting when divided into three parts
 - *Placement* – objects near the bottom of a composition appear closer
 - *Overlapping Shapes* – elements are seen to be behind objects that overlap them

Variety

- This principle is concerned with difference
- If all elements are the same in an image the results can be boring
- However, too much variety can be chaotic
- Think in terms of contrast (size, shape, colour)
- When using type in a design, limit the number of fonts, the styles, the size, the alignments, and the colour.

Emphasis

- Helps define the visual "centre of interest"
- Convergence - diagonal lines lead the eye to the dominant area
- Radial lines also draw attention

Unity (sometimes called Harmony)

- Totality of the image created; the relationships among visual elements
- The Principles of Design used in creating the image

Breaking the Rules: Principles are guidelines not laws – Don't be afraid to break them.

Appendix 4.2b

Graphical Display Activity Specific Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.04G, TFV.01G Knowledge in identifying and describing the techniques of producing print media	- demonstrates limited knowledge in identifying and describing the techniques of producing print media	- demonstrates some knowledge in identifying and describing the techniques of producing print media	- demonstrates considerable knowledge in identifying and describing the techniques of producing print media	- demonstrates high level of knowledge in identifying and describing the techniques of producing print media
Knowledge of electronic communication equipment	- demonstrates limited knowledge of electronic communication equipment	- demonstrates some knowledge of electronic communication equipment	- demonstrates considerable knowledge of electronic communication equipment	- demonstrates high level of knowledge of electronic communication equipment
Thinking/Inquiry SPV.01G, SPV.03G, SPV.04G Composing, capturing, and processing still images	- exhibits limited level of composing, capturing, and processing still images	- exhibits some level of composing, capturing, and processing still images	- exhibits considerable level of composing, capturing, and processing still images	- exhibits high level of composing, capturing, and processing still images
	- shows limited knowledge of graphics software	- shows some knowledge of graphics software	- shows considerable knowledge of graphics software	- shows high level of graphics software
	- shows limited ability to prepare camera-ready artwork	- shows some ability to prepare camera-ready artwork	- shows considerable ability to prepare camera-ready artwork	- shows high level of ability to prepare camera- ready artwork
Communication IC1.05G Communicates information	- communicates information with limited degree of clarity	- communicates information with some degree of clarity	- communicates information with a considerable degree of clarity	- communicates information with a high level of clarity

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Application IC1.01G, IC1.02G, IC1.05G Recognize strengths and weaknesses of graphic, electronic, and live communication	- demonstrates limited ability to recognize strengths and weaknesses of graphic, electronic, and live communication	- demonstrates some ability to recognize strengths and weaknesses of graphic, electronic, and live communication	- demonstrates considerable ability to recognize strengths and weaknesses of graphic, electronic, and live communication	- demonstrates a high level of ability to recognize strengths and weaknesses of graphic, electronic, and live communication
	- demonstrates limited ability to operate equipment safely	- demonstrates some ability to operate equipment safely	- demonstrates considerable ability to operate equipment safely	- demonstrates a high level of ability to operate equipment safely
Apply ethical standards and policies for communications technology	- demonstrates limited ability to apply ethical standards and policies for communications technology	- demonstrates some ability to apply ethical standards and policies for communications technology	- demonstrates considerable ability to apply ethical standards and policies for communications technology	- demonstrates high level of ability to apply ethical standards and policies for communications technology

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 4.4a

Designing a Game Assignment Sheet

PART A

Bill Gates has asked you to design a game that requires a user to type the response to a question. The game should help students in one of the following areas. (These games may be used by one of the subject departments or in the Special Needs department in your school.)

- Math – Addition
- Math – Subtraction
- Math – Multiplication and Division
- English – Punctuation
- English – Spelling
- English – Adjectives and Adverbs
- History – The Beginnings of a Country: Canadian History

PART B

In addition to design principles already studied, keep in mind the following design considerations:

1. A correct response should prompt a congratulatory image to appear; an incorrect response should produce a consolatory one.
2. Users must choose between operations: between two levels (Beginner or Expert), and decide whether they want the results of their attempts tallied and displayed.
3. Use the template provided by the teacher to help complete the project.

Appendix 4.4b

Computer Game Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.03G, TFV.04G, IC1.05G	- demonstrates limited knowledge of facts, technical terminology, procedures, and standards	- demonstrates some knowledge of facts, technical terminology, procedures, and standards	- demonstrates considerable knowledge of facts, technical terminology, procedures, and standards	- demonstrates thorough knowledge of facts, technical terminology, procedures, and standards
TF1.02G	- demonstrates limited understanding of concepts	- demonstrates some understanding of concepts	- demonstrates considerable understanding of concepts	- demonstrates thorough and insightful understanding of concepts
Thinking/Inquiry TFV.03G, TFV.04G, IC1.05G, TF1.02G	- uses thinking skills with limited effectiveness	- uses thinking skills with moderate effectiveness	- uses thinking skills with considerable effectiveness	- uses thinking skills with a high degree of effectiveness
Communication ICV.01G, ICV.03G, IC1.01G, IC1.02G, IC1.03G, IC1.04G	- communicates information with limited clarity	- communicates information with moderate clarity	- communicates information with considerable clarity	- communicates information with a high degree of clarity and with confidence
Application SP1.09G, SP1.11G	- uses procedures, equipment, and technology safely and correctly only with supervision	- uses procedures, equipment, and technology safely and correctly with some supervision	- uses procedures, equipment, and technology safely and correctly	- demonstrates and promotes safe and correct use of procedures, equipment, and technology
SPV.03G, SPV.04G	- applies ideas and skills in familiar contexts with limited effectiveness	- applies ideas and skills in familiar contexts with moderate effectiveness	- applies ideas and skills in familiar contexts with considerable effectiveness	- applies ideas and skills in familiar contexts with a high degree of effectiveness

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Unit 5: Image Production and Processes

Time: 22 hours

Unit Description

Following the elements and principles of photography, students develop a variety of techniques to capture, manipulate, and edit images. Traditional black and white, 35 mm, pinhole, and colour digital photography are explored. Students learn basic optic principles, technical terminology, lighting techniques, and production processes necessary to safely generate their final photographic images. They discover how the camera captures images and how light is controlled in studio and external settings. Students apply ethical standards and policies in their photographs while exploring further education and careers.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations: TFV.01G, TFV.03G, TFV.04G, SPV.01G, SPV.03G, SPV.04G, ICV.01G, ICV.02G, ICV.03G.

Specific Expectations: TF1.08G, TF1.09G, TF1.10G, TF1.11G, SP1.02G, SP1.03G, SP1.05G, SP1.09G, SP1.10G, SP1.11G, IC1.01G, IC1.02G, IC1.03G, IC1.04G, IC1.05G.

Activity Titles (Time + Sequence)

Activity 1	Pinhole Camera	330 minutes
Activity 2	Studio Shooting	330 minutes
Activity 3	Photo Collage for Yearbook	330 minutes
Activity 4	Personal Photo Album	330 minutes

Prior Knowledge Required

- Students should be familiar with the safe and proper use of photographic materials and equipment.
- A fundamental understanding of image composition and lighting are recommended but not essential.
- Basic computer knowledge.
- Co-operative teamwork skills are beneficial.

Unit Planning Notes

- Activities in this unit explore a variety of image production and processing methods as well as the safe and correct use of related equipment. The teacher must stress and insist on the correct and safe use of all equipment and materials throughout the unit activities.
- Darkroom processes and safety, safe handling of chemicals, and use of personal protection equipment must be emphasized.
- Appropriate teacher-produced and collected resources and other support materials should be gathered, including samples of previous student work, commercial samples, and lighting samples.
- Student work must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students must adhere to copyright laws and the correct use of any copyrighted materials.
- Teachers address safety/censorship on the Internet by implementing their school board's policies on appropriate student use and access to Internet services while gathering activity-specific resources.
- The activities depend on equipment that is available in the school. To ensure that activities are authentic, the contents of this unit should be adapted to the technology that is available locally.

-
- The teacher must ensure that a safe work environment for all students exists.
 - The teacher should investigate the software that is accessible and available at the school or through the board that is suitable for each activity.
 - The teacher should become familiar with all activities so that they can implement each activity better.
 - The teacher should investigate potential cross-curricular connections with other subjects and community links.
 - Each activity enables students to focus on career options and provides insights into the skills required for related professions. Teaching/learning strategies that allow for career links in the activities should be investigated such as job shadowing, career and education research, field trips and guest speakers.

Teaching/Learning Strategies

- Throughout this unit the teacher:
 - monitors and observes all student activity;
 - speaks with students regularly to provide help when problems arise;
 - reviews project expectations; and
 - modifies project activities to reflect equipment availability.
- Image Production and Processing combine a variety of academic and applied learning strategies, including independent and group work, problem solving, co-operation, communication, time management, brainstorming new ideas, presenting, and report writing. The student-centred, activity-based mode of delivery enables students to develop individual and group skills.

Assessment and Evaluation

- Assessment and evaluation are based on testing, product development, and product delivery using a variety of media, and include diagnostic and summative methods.
- Assessment is an ongoing daily process that includes: log/journal entries, portfolios, regular practical and theory tests and/or quizzes, activity worksheets and exercises, project evaluation criteria, student/group presentations, conferences, self and/or peer critiques, and activity checklists and rubrics.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Various samples of activity project work

Books

Bernhard, J. *Mastering Black-and White Photography*. New York: Allworth Press, 1995.

ISBN 1-880559-23-4

Brenner, E. *Pinhole Photography, Rediscovering a Historic Technique*. Focal Press, 1995.

ISBN 0-240-80237-3

Davenport, Alma. *The History of Photography – an Overview*. Boston: Focal Print, 1991.

Freeman, Paterson. *Photography and the Art of Seeing*. Toronto: VanNostrand Reinhold Ltd., 1979.

Gilmore, Steven. *Electronic Workshop – Photography*. England: RotoVision, 2000. ISBN 2-88046-422-6

Hedgecoe, John. *The Photographer's Handbook*. Toronto: Random House of Canada, 1999.

ISBN 0-679-74204-2

Hicks, Roger and Frances Schultz. *Pro Lighting, Portraits – A Guide to Professional Lighting Techniques*. Switzerland: RotoVision, 1996. ISBN 2-88046-273-8.

Sanders, Mark. *Communication Technology Today and Tomorrow*. Mission Hills, CA: Glencoe/McGraw-Hill, 1991. ISBN 0-02-677110-1

Swedlund, Charles. *Photography*. Orlando: Saunders College Publishing, 1981.

Weinman, Elaine and Peter Lourekas. *Photoshop for Windows & Macintosh*. Berkeley: Peachpit Press, 1998. ISBN 0-201-35352-0.

Web Sites

Lesson plans

<http://www.kodak.com/lesson>

Internet samples

<http://www.pinhole.com/resources/mirror/>

Lesson plans

<http://www.kodak.com/global/en/consumer/education/lesson/plans/pinholecamera/>

Pinhole Visions

<http://www.amazon.com>

Activity 1: Pinhole Camera

Time: 330 minutes

Description

This unit introduces students to the history of still photography and imaging. The principles of the camera obscura (pinhole camera) and drawing with light are emphasized. Students design and fabricate a pinhole camera and take still images of their surroundings. They learn how images are captured with a camera and how prints are exposed onto film paper. They develop darkroom skills and an understanding of the chemical processes by producing negatives and final positive prints of their images. The safe handling of chemicals and the use of personal protection equipment are emphasized.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.03G - identify and describe the processes of capturing still images;

SPV.03G - compose, capture, and process still images;

ICV.01G - explain the benefits, risks, and ethics associated with communications technology;

ICV.02G - observe the safety rules and regulations;

ICV.03G - apply health and safety standard when using products and materials.

Specific Expectations

TF1.08G - identify the types and uses of still photography;

TF1.10G - explain the process of developing and printing photographic images;

SP1.09G - create still images using composition techniques;

SP1.10G - process and obtain prints and film and/or digital output;

IC1.02G - operate equipment safely;

IC1.03G - apply health and safety standards when using products and materials;

IC1.05G - demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- Student work in this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- The teacher should be able to explain the principles of photography. The theory of focal length (see Appendix 5.1a) impacts on the type of cameras constructed and the final images produced.
- The best setup for success is to create a studio layout with lighting so that lighting remains constant throughout. Using daylight is unreliable, as cloud cover from day to day causes great changes in exposure times.
- Students should be encouraged to create cameras that have adjustable lenses so that they can take a variety of shots that include wide angle, normal, and telephoto.
- The teacher must be aware of darkroom processes and safety issues and must stress darkroom safety and the importance of safe chemical handling.
- The teacher should compile samples of previously built cameras and images they produce if possible.
- The teacher should provide a project report sample outlining the process and showing final prints.
- The teacher should provide a pinhole camera assignment and theory notes.

Prior Knowledge Required

- Students should have problem-solving capabilities in mathematics.
- Students are able to draft and measure accurately.
- Students are aware of safety procedures when working in a technological facility.

Teaching/Learning Strategies

- The teacher introduces the concept of early pinhole optics and the wave theory of light.
- The teacher shows the class samples of previously built cameras and images they produce and discusses how the shape of the camera determines whether the picture is a wide angle or telephoto shot.
- The teacher hands out Pinhole Camera Assignment and Theory Notes (see Appendix 5.1a), reviews the criteria for the activity, and outlines the procedure of designing and fabricating the camera.
- Students work on assignment in groups of two. They research camera types to develop designs.
- The teacher reviews basic drafting techniques.
- Students design and build a prototype model and study it to make sure the design works.
- The teacher reviews darkroom techniques and safety procedures.
- Students take and develop negatives and positives of their photographic images.
- Students build the final product while keeping a daily journal of events (problems and solutions) and a photo shoot log to log pictures taken and the results.
- Students create a final report of the results.

Assessment/Evaluation Techniques

- Assessment and evaluation are based on testing, product development, and product delivery using a variety of media, and include diagnostic and summative methods.
- Assessment is an ongoing daily process that includes: log/journal entries, portfolios, regular practical and theory tests and/or quizzes, activity worksheets and exercises, project assessment criteria, student/group presentations, conferences, self and/or peer critiques, and activity checklists and rubrics (Appendix 5.1b).

Accommodations

- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Where necessary, arrange groups of three to enable students to participate in group work.
- Photography is a complex process; therefore, the teacher must be aware that some students need time to repeat the processes involved.
- Students with special needs benefit from necessary accommodations in the overall activity criteria, as well as teacher and peer assistance where appropriate. For example, students may be permitted to use film developed by peers, develop a limited number of prints, or use pre-developed pictures from various sources.
- As an additional activity, if time permits, reprint negatives and positives to make improvements.
- Vary the options and levels of difficulty in camera construction.
- Option for oral testing

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Books

Brenner, E. *Pinhole Photography, Rediscovering a Historic Technique*. Focal Press, 1995.

ISBN 0-240-80237-3

Sanders, M. *Communication Technology Today and Tomorrow*. Glencoe/McGraw-Hill.

ISBN 0-02-677110-1

Web Sites

Lesson plans

<http://www.kodak.com/lesson>

Internet samples

<http://www.pinhole.com/resources/mirror/>

Lesson plans

<http://www.kodak.com/global/en/consumer/education/lesson/plans/pinholecamera/>

Pinhole Visions

<http://www.amazon.com>

Activity 2: Studio Shooting/Lighting

Time: 330 minutes

Description

Students capture still images, figures, and objects in a studio setting. They learn image composition techniques by using direct and indirect light. They design and build simple backdrops and arrange a variety of lighting schemes using a single light source, two light sources, and three light sources to take traditional 35 mm or digital pictures.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.03G – identify and describe the processes of capturing still images;

SPV.01G – prepare camera-ready artwork for print and post-production;

SPV.03G – compose, capture, and process still images;

ICV.01G – explain the benefits, risks, and ethics associated with communications technology;

ICV.02 G – observe safety rules and regulations;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.03G – describe the characteristics of materials used in print production;

TF1.04G – describe printing and finishing processes;

TF1.08G – identify the types and uses of still photography;

TF1.09G – identify various cameras and accessories and describe how to test the component parts;

TF1.11G – identify the elements of lighting and staging;

SP1.03G – produce printed copies using a variety of reproduction methods;

SP1.04G – apply finishing operations to printed products;

SP1.09G – create still images using composition techniques;

SP1.10G – process and obtain prints and film and/or digital output;

SP1-11G – enhance or create sets, lighting schemes, and information displays;

IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communications;

IC1.02G – operate equipment safely;

IC1.03G – apply health and safety standards when using products and materials;

IC1.04G – identify career opportunities and develop appropriate education plans;

IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- Student work in this activity must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students are expected to keep a daily log recording notes of their accomplishments and outlining any future needs that this activity requires.
- Students must adhere to copyright laws and the correct use of any copyrighted material.
- The teacher reviews photographic composition by choosing and presenting a few commercial examples to the class.
- The teacher introduces studio lighting and backdrops. Depending on available resources, students may be able to design custom backdrops for their photo shoot.
- The teacher provides samples of objects for shooting such as sporting goods, consumer products, dry flowers, and stuffed animals.
- The teacher may invite a professional photographer to speak about work experiences.

Prior Knowledge Required

- Students know the safe and proper use of 35mm camera and/or digital camera.
- Students know safe and proper techniques for developing and printing 35mm and/or digital pictures.
- Students have co-operative teamwork skills.

Teaching/Learning Strategies

- Students discuss the concept of inner beauty and character versus physical beauty and image stereotypes of both genders.
- The teacher uses a slide projector to show portraits that demonstrate how lighting and composition are essential to communicating the mood and character of the inner person. These images are contrasted against typical examples of lighting mistakes.
- The teacher uses a slide projector to show object/product shots that demonstrate how lighting, composition and backdrops are essential to communicating the mood and character of the person that might use these objects. Students briefly discuss the power of the image and the ethics of advertising.
- The teacher sets up a video camera on a tripod connected to a monitor in the studio and demonstrates various lighting techniques using volunteer students and classroom objects as subject matter. Light types and safe handling of lights are discussed.
- The teacher distributes photo assignment and instructional aid sheets to students and reviews the various lighting setups.
- Students work on photo assignments in groups (maximum three to four students per group).
- Students create three images:
 - traditional portrait pose using a classic three-point lighting system;
 - portrait using lighting scheme and pose of individual student's choice that communicates the mood and character of the student;
 - an object of the student's choice that reflects the student's character shot with backdrop and lighting scheme of student's choice.
- Students discuss the rationale for choice of lighting scheme, pose, and backdrop with respect to communicating their personal inner characteristics.
- Students discuss career implications.

Assessment/Evaluation Techniques

- Assessment and evaluation are based on testing, product development, and product delivery using a variety of media, and include diagnostic and summative methods.
- Assessment is an ongoing daily process that includes: log/journal entries, portfolios, regular practical and theory tests and/or quizzes, activity worksheets and exercises, project evaluation criteria, student/group presentations, conferences, self and/or peer critiques, and activity checklists and rubrics.
- Formative assessment is used to determine a student's ability to work co-operatively in groups.
- Students assess the contribution of individual group members by completing daily log sheets.
- Summative assessment of lighting quiz (Appendix 5.2c).
- Summative assessment of portrait lighting and shooting assignment (Appendix 5.2a, 5.2b).

Accommodations

- Teachers are expected to be acquainted with the student's Individual Education Plan and unique learning characteristics and should make the necessary accommodations.
- Students with special needs are given appropriate timelines for completion of this activity.
- For enrichment, students may use this technology to propose an entrepreneurial venture for another subject area or for the school.

-
- Students may work in groups.
 - More sophisticated lighting techniques may be experimented for enrichment.
 - Compositions of multiple subjects rather than single subjects.
 - Students may have the option of oral testing.
 - Students demonstrate acquired skills.
 - Peer tutors help special needs students handle equipment.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Books

Davenport, Alma. *The History of Photography – An Overview*. Boston: Focal Print, 1991.

Hicks, Roger and Frances Schultz. *Pro Lighting, Portraits – A Guide to Professional Lighting Techniques*. Switzerland: RotoVision, 1996. ISBN 2-88046-273-8.

Swedlund, Charles. *Photography*. Orlando: Saunders College Publishing, 1981.

Activity 3: Photo Collage

Time: 330 minutes

Description

Students explore the processes and techniques of digital imaging by preparing a photographic collage. Employing masks, paths, layers, filters, channels, text, contrast, and colour balance, students manipulate their own original images. End uses include the school yearbook, web site, theme week posters, or projections during grade assemblies or other school/community events.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.01G – identify and describe the techniques used to produce print media;

TFV.03G – identify and describe the processes of capturing still images;

TFV.04G – demonstrate understanding of electronic communication equipment;

SPV.01G – prepare camera-ready artwork for print and post-production;

SPV.03G – compose, capture, and process still images;

SPV.04G – use computer graphics software competently;

ICV.01G – explain the benefits, risks, and ethics associated with communications technology;

ICV.02G – observe safety rules and regulations;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.02G – identify basic composition and typographic principles;

TF1.03G – describe the characteristics of materials used in print production;

TF1.04G – describe printing and finishing processes;

TF1.08G – identify the types and uses of still photography;

TF1.09G – identify various cameras and accessories and describe how to test the component parts;

TF1.10G – explain the process of developing and printing photographic images;
SP1.02G – apply composition and typographic principles to produce camera-ready artwork for print production;
SP1.03G – produce printed copies using a variety of reproduction methods;
SP1.04G – apply finishing operations to printed products;
SP1.05G – create various effects using video and digital camera techniques;
SP1.09G – create still images using composition techniques;
SP1.10G – process and obtain prints and film and/or digital output;
SP1.11G – enhance or create sets, lighting schemes, and information displays;
IC1.01G – identify strengths and weaknesses of graphic, electronic, and live communications;
IC1.02G – operate equipment safely;
IC1.03G – apply health and safety standards when using products and materials;
IC1.04G – identify career opportunities and develop appropriate education plans;
IC1.05G – demonstrate knowledge of ethical standards and policies for communications technology.

Planning Notes

- Student work must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.
- Students must adhere to copyright laws and the correct use of any copyrighted materials.
- This activity depends on equipment availability in the school.
- The teacher must ensure that a safe work environment exists.
- The teacher should investigate that software is accessible and available at the school or through the board.
- Appropriate resources and other support materials should be gathered including samples of previous student work and lighting samples.
- Teachers may investigate potential cross-curricular connections with Visual Arts.
- This activity enables students to focus on career options and provides insights into the skills required for related professions. Teaching/learning strategies that allow for career links should be investigated such as job shadowing, career and education research, field trips, and guest speakers.

Prior Knowledge Required

- Students should be familiar with the safe and proper use of photographic materials and equipment.
- A fundamental understanding of image composition and lighting are recommended but not essential.
- Basic computer knowledge.
- Co-operative teamwork skills are beneficial.

Teaching/Learning Strategies

- In groups of four or less, students are asked to brainstorm a list of activities that take place in the school community that could help communicate a particular message to a group of people unfamiliar with the school. (This could include feeder schools, parents, visiting delegates from another country, and community partnerships). In pairs, students select one activity from the list.
- The teacher gives an electronic slide presentation of examples of collages.
- The teacher demonstrates the basic tools of photo editing/composition software on a single image using a computer projection system.
- In pairs, students experiment manipulating stock images with the software.
- While students are experimenting, the teacher demonstrates to a small group of students (maximum of six), how to use and download images from a digital camera to a computer. This demonstration is repeated.

-
- The teacher demonstrates various techniques for assembling several images in the photo editing/composition software using a computer projection system. It is suggested that the teacher demonstrates the complete process of creating a photo collage.
 - Students share the use of the digital cameras and capture still images that communicate the essence of their selected object while the rest of the class practise assembling techniques using stock images.
 - The teacher gives quick tip lessons at the beginning of the remaining classes.
 - Students print out and display their completed collage at the end of the activity.

Assessment/Evaluation Techniques

- Assessment and evaluation are based on testing, product development, and product delivery with a variety of media.
- Assessment is an ongoing daily process that includes: log and/or journal entries, portfolios, regular practical and theory tests and/or quizzes, activity worksheets and exercises, project evaluation criteria, student and/or group presentations, conferences, self and/or peer critiques, and activity checklists and rubrics (Appendix 5.3).
- Formative assessment is used to determine a student's ability to work co-operatively in groups.
- Students assess the contribution of individual group members by completing daily log sheets.
- Summative assessment of lighting quiz (Appendix 5.2c).
- Summative assessment of portrait lighting and shooting assignment (Appendix 5.2a, 5.2b).

Accommodations

- Teachers are expected to be acquainted with the student's Individual Education Plan and their unique learning characteristics and should make the necessary accommodations.
- Students with special needs may be given appropriate timelines for completion of this activity.
- For enrichment, students may use this technology to develop an entrepreneurial venture for another subject area or for the school.
- Students may work as partners or in groups.
- More advanced techniques and tools not demonstrated by the teacher are available for use by all students.
- Students have an option for oral testing.
- Students demonstrate acquired skills.
- Peer tutors help students with special needs handle equipment.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Books

Gilmore, Steven. *Electronic Workshop – Photography*. England: RotoVision, 2000. ISBN 2-88046-422-6

Weinman, Elaine and Peter Lourekas. *Photoshop for Windows & Macintosh*. Berkeley: Peachpit Press, 1998. ISBN 0-201-35352-0

Activity 4: Personal Photo Album

Time: 330 minutes

Description

Students produce a personal photo album by exploring the basic processes of 35 mm black and white photography. Students identify various cameras and camera accessories. Using available equipment, students create still images utilizing composition techniques. They shoot, process, and obtain final prints from 35 mm black and white film. The safe handling of equipment and materials is a central component of this activity.

Strand(s) and Expectations

Strand(s): Theory and Foundation, Skills and Processes, Impact and Consequences

Overall Expectations

TFV.03G – identify and describe the processes of capturing still images;

SPV.03G – compose, capture, and process still images;

ICV.02G – observe safety rules and regulations;

ICV.03G – identify career opportunities in the communications field.

Specific Expectations

TF1.02G – identify basic composition and typographic principles;

TF1.08G – identify the types and uses of still photography;

TF1.09G – identify various cameras and accessories and describe how to test the component parts;

TF1.10G – explain the process of developing and printing photographic images;

SP1.09G – create still images using composition techniques;

SP1.10G – process and obtain prints from film and digital input;

IC1.02G – operate equipment safely;

IC1.03G – apply health and safety standards when using products and materials;

IC1.04G – identify career opportunities and develop appropriate education plans.

Planning Notes

- The teacher collects photographic images from different sources to show as examples of professional finished photographs.
- If possible, provide information on a variety of 35 mm cameras (SLR and Rangefinder) and collect various types of cameras for display and identification.
- A complete inventory of film, development equipment, chemicals, and papers is essential.
- Handouts and well-placed wall signs remind students of step-by-step procedures.
- Opportunities for cross-curricular involvement should be considered as an enrichment activity (e.g., English media, The Arts, or Social Sciences).
- Student work must contain positive images of race, gender, and religion. Any stereotypes, acts of violence, sexual themes, or use of profanity in their work is unacceptable.

Prior Knowledge Required

- Knowledge of design and/or composition principles enhance students' work.
- Students should be familiar with safe and proper use of photographic materials and equipment.
- A fundamental understanding of image composition and lighting are recommended but not essential.
- Co-operative teamwork skills are beneficial.

Teaching/Learning Strategies

- This activity requires whole class lessons, small group lessons, and individual instruction geared to specific problems as the student advances toward the final product.
- Each student assembles a collection of photographs to create a personal photo album. Since this is a technical activity which culminates in a final visual product, the student is introduced to the fundamental elements and principles of visual design; as well, an introduction to the properties of light with respect to the creation of black and white images should be examined.

Introduction to Composition

- The class views the collected samples of photographs and discusses the elements and principles of design employed in each image, and the emotional impact that each photograph conveys.
- Students collect photographs from magazines or newspapers and clearly indicate the use of the elements and principles of design. This assignment is evaluated with a checklist.

Light

- Students are introduced to the concept of light as an energy form. The teacher then moves on to the properties of light waves – frequency, amplitude, length, speed, and direction. These concepts enable the students to understand the reaction that occurs when light travels through the camera lens and interacts with the film. A written quiz is used to test this knowledge.

Camera Functions and Controls

- In groups of three or four, students research, through manuals, textbooks, and the Internet, controls and functions (external and internal) for the types of cameras used.
- The teacher hands out a diagram-labeling sheet and reviews the camera controls and functions.
- The teacher introduces the concept of film speed and how camera controls (aperture and shutter speed) alter the amount of light that hits the film. Focal length and field of view are explored to enable students to manipulate all the variables that the camera and film have to offer.
- The teacher demonstrates camera handling techniques and composition rules.
- Students write a review quiz before beginning the assignment.

Shooting the Film

- Students shoot a roll of film.
- Students expose their film in school surroundings or on a special trip away from the school. Field trips allow for more diversity in the selection of subject matter.

Film Processing

- The teacher demonstrates the developing process to small groups of students stressing the importance of the safe handling of all chemicals.
- Students follow clear instructions to complete the seven steps necessary to develop the exposed film: loading the film tank; developing the film within the tank; stopping the developing process; fixing the images on the film; washing the film; wetting the film; and drying the film.

Making Prints

- The teacher demonstrates the procedure for making a simple contact sheet stressing darkroom safety.
- Students make contact sheets of their negatives.
- The teacher demonstrates cleaning the negative; setting up the enlarger; exposing the step test or test strip; processing the step test print; printing the photograph, including techniques such as using filters on the enlarger, burning-in, and dodging; and drying the photographic print.
- Students create test strips and print their images.

Displaying the Prints

- The teacher demonstrates techniques for mounting and displaying prints including mat boards, frames, dry mounting, and album creation.
- Students mount, display, and present their prints.

Review and Report

- The class critiques the images with respect to technique, composition, and theme.
- Students produce a written report on current job prospects and required education for professional photographers. The report includes a review of changes in a photographer's job as a result of new digital technologies.

(Note: All teacher demonstrations should be given to small groups of students – approximately six to eight students per group)

Assessment/Evaluation Techniques

- Pencil and paper quizzes are used for theoretical material such as elements and principles of design, properties of light, camera functions, and each particular process.
- Observations of student performance during the production process are recorded on checklists, thus generating a substantial range of formative assessment.
- The final summative assessment is allocated to the individual student, peer, and teacher evaluations of various technical and aesthetic aspects of the activity (Appendix 5.4a, 5.4b).

Accommodations

- Photography is a complex process; the teacher must be aware that some students need time to repeat any one of the processes involved.
- Students with special needs benefit from necessary accommodations in the overall activity criteria, as well as teacher and peer assistance where appropriate. For example, students may be permitted to use film developed by peers, develop a limited number of prints, or use pre-developed pictures from various sources.

Resources

General

Teacher-developed resources including handouts, worksheets, and activity sheets

Samples of student work

Manufacturer's equipment manuals

Software manuals and tutorial exercises

Books

Bernhard, J. *Mastering Black-and White Photography*. New York: Allworth Press, 1995.

ISBN 1-880559-23-4

Freeman, Paterson. *Photography and the Art of Seeing*. Toronto: VanNostrand Reinhold Ltd., 1979.

Hedgecoe, John. *The Photographer's Handbook*. Toronto: Random House of Canada, 1999.

ISBN 0-679-74204-2

Sanders, Mark. *Communication Technology Today and Tomorrow*. Mission Hills, CA:

Glencoe/McGraw-Hill, 1991. ISBN 0-02-677110-1

Web Sites

Lesson plans

<http://www.kodak.com/lesson>

Appendix 5.1a

Pinhole Camera Assignment and Theory Notes

Guidelines:

The assignment allows you to design and make your own camera and to create your own photographs with the camera. You research pinhole camera designs and then create your own. Research and design keeping the following points in mind:

- the shape of your camera determines whether the picture is a wide angle or telephoto shot (the longer the camera the greater its telephoto capabilities);
- the camera must be light tight to operate properly (paint the inside black);
- a shutter system that can be opened and closed at your discretion to control the amount and time of light;
- your design must allow you to open the camera to load photographic paper and hold the paper firmly;
- you create design blueprints using pencil and scale ruler. Your blueprint must be submitted before you begin construction; and
- the quality of the pinhole is of paramount importance. To optimize the picture quality the size of the pinhole should be 0.007 inches in diameter.

Prototype:

Once your research and blueprints are complete, build a prototype of your camera. This allows you to test the shape and focal length of the camera and ensure that it operates properly.

Final Camera:

- Build your final camera and take it into the darkroom to ensure that it is light proof (tape or paint over).
- As a group (two to three groups together), set up lights and objects you wish to photograph.
- Do a number of test shots and print them to find out what timed exposure works well.
- Take the final good photograph of your setup and develop. This will be your negative.
- Make test strips of your positive. Then print out your final positive.

Final Report:

The final report should include all research materials, blueprints, test prints, final prints, and an analysis of the process. Also include what went right and what went wrong and conclude by stating any improvements or changes you might have made to your camera.

Additional Activity:

If there are improvements that could be made make them and develop new negatives and positives.

Focal Length

The 35 mm film used by most single lens reflex cameras produces a negative, 24 mm high by 36mm wide. The total film height is 35 mm. Normal focal length is usually considered to be roughly equal to the diagonal dimension of the negative, or slightly more.

The normal focal length for a pinhole camera would be:

$$F.L. = \sqrt{24^2 + 36^2}$$

$$F.L. = 43.6 \text{ mm}$$

To calculate the focal length of pinhole camera with a negative size of 4" x 5". The diagonal dimension or focal length would be calculated as:

$$F.L. = \sqrt{4^2 + 5^2}$$

$$F.L. = 6.4 \text{ inches}$$

As focal length increases, image size increases, but due to the Inverse Square Law, brightness decreases.

Appendix 5.1b

Pinhole Camera Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.03G, TF1.02G, TF1.08G Identify and describe the processes of capturing still images	- is able to identify and describe few of the processes of capturing still images	- is able to identify and describe some of the processes of capturing still images	- is able to identify and describe most of the processes of capturing still images	- is able to identify and describe all of the processes of capturing still images
Thinking/Inquiry SP1.09G Create still images using composition techniques	- limited ability to create still images using composition techniques	- moderate ability to create still images using composition techniques	- considerable ability to create still images using composition techniques	- high degree of ability to create still images using composition techniques
Communication TF1.10G Explain the process of developing and printing photographic images	- explains the process of developing and printing photographic images with limited clarity	- explains the process of developing and printing photographic images with moderate clarity	- explains the process of developing and printing photographic images with considerable clarity	- explains the process of developing and printing photographic images with a high degree of clarity
Application SPV.03G, SP1.09G, SP1.10G Compose, capture, and process still images	- composes, captures, and processes still images with limited effectiveness	- composes, captures, and processes still images with moderate effectiveness	- composes, captures, and processes still images with considerable effectiveness	- composes, captures, and processes still images with a high degree of effectiveness
Application ICV.02G, IC1.02G, IC1.03G Observe safety rules and regulations	- operates equipment safely and correctly only with supervision	- operates equipment safely and correctly only with some supervision	- operates equipment safely and correctly	- demonstrates and promotes safe and correct procedures when operating equipment

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 5.2a

Studio Shooting/Lighting Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TF1.11G, IC1.02G Identifying the elements of lighting and staging	- demonstrates limited knowledge in identifying the elements of lighting and staging and operating them safely	- demonstrates some knowledge in identifying the elements of lighting and staging and operating them safely	- demonstrates considerable knowledge in identifying the elements of lighting and staging and operating them safely	- demonstrates a high degree of knowledge in identifying the elements of lighting and staging and operating them safely
Thinking/Inquiry SPV.03G, SP1.09G, SP1.11G Design and inquiry principles	- applies few of the design and inquiry principles while composing still images and creating sets and lighting schemes	- applies some of the design and inquiry principles while composing still images and creating sets and lighting schemes	- applies most of the design and inquiry principles while composing still images and creating sets and lighting schemes	- applies all of the design and inquiry principles while composing still images and creating sets and lighting schemes
Communication TFV.03G Describes the process of capturing still images	- describes the process of capturing still images with a limited degree of clarity	- describes the process of capturing still images with some degree of clarity	- describes the process of capturing still images with a considerable degree of clarity	- describes the process of capturing still images with a high degree of clarity
Application ICV.03G, IC1.04G Identify career opportunities in professions related to lighting, staging, and imaging	- demonstrates limited ability to identify career opportunities in professions related to lighting, staging, and imaging and to develop appropriate education plans	- demonstrates some ability to identify career opportunities in professions related to lighting, staging, and imaging and to develop appropriate education plans	- demonstrates a considerable ability to identify career opportunities in professions related to lighting, staging, and imaging and to develop appropriate education plans	- demonstrates a high degree of ability to identify career opportunities in professions related to lighting, staging, and imaging and to develop appropriate education plans

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 5.2b

Studio Shooting/Lighting Task Specific Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Lighting Setup Place the Key light, Fill light, and Back light in relationship to the camera and subject	- demonstrates limited ability to place the Key light, Fill light, and Back light in relationship to the camera and subject	- demonstrates some ability to place the Key light, Fill light, and Back light in relationship to the camera and subject	- demonstrates considerable ability to place the Key light, Fill light, and Back light in relationship to the camera and subject	- demonstrates a high degree of ability to place the Key light, Fill light, and Back light in relationship to the camera and subject
Subject/Object Presentation and Setup Correctly pose subjects and setup objects for studio shooting	- demonstrates limited ability to correctly pose subjects and setup objects for studio shooting	- demonstrates some ability to correctly pose subjects and setup objects for studio shooting	- demonstrates considerable ability to correctly pose subjects and setup objects for studio shooting	- demonstrates a high degree of ability to correctly pose subjects and setup objects for studio shooting
Creativity Originality with choice of lighting, choice of object/subject, and choice of backdrop	- demonstrates limited originality with choice of lighting, object/subject, and backdrop	- demonstrates some originality with choice of lighting, object/subject, and backdrop	- demonstrates considerable originality with choice of lighting, object/subject, and backdrop	- demonstrates a high degree of originality with choice of lighting, object/subject, and backdrop
Quality of Communicated Information/ Ideas Communicate personality and character through captured still images	- demonstrates limited ability to communicate personality and character through captured still images	- demonstrates some ability to communicate personality and character through captured still images	- demonstrates considerable ability to communicate personality and character through captured still images	- demonstrates a high degree of ability to communicate personality and character through captured still images
Safety and Handling of Equipment Lab safety rules when handling lighting equipment	- follows some lab safety rules when handling lighting equipment	- follows most lab safety rules when handling lighting equipment	- follows all lab safety rules when handling lighting equipment	- reminds other students of safety rules and proper handling of lighting equipment when they are not being followed

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 5.2c

Lighting Quiz

Lighting Quiz /35

Name:

Answer questions in the space provided:

1. List six basic single light lighting directions and describe how each affects the rendition of a subject. (12 marks)
2. List and describe five lighting arrangements/techniques for lighting an object. (5 marks)
3. In the space provided below, neatly sketch a plan view of a traditional three-point lighting system for portraiture. Include the camera, subject, backdrop, name of each light, and note the angle of each light relative to the subject. (10 marks)
4. Sunlight is both specular and diffused. Describe this phenomenon. Include definitions of specular and diffused light in your answer. (4 marks)
5. Define four of the following (inverse square law, barn doors, snoot, floodlight, spotlight.). (4 marks)

Appendix 5.3

Photo Collage Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TF1.08G, TF1.09G	- demonstrates limited knowledge in identifying various cameras and accessories and the uses of still photography	- demonstrates some knowledge in identifying various cameras and accessories and the uses of still photography	- demonstrates considerable knowledge in identifying various cameras and accessories and the uses of still photography	- demonstrates a high degree of knowledge in identifying various cameras and accessories and the uses of still photography
Thinking/Inquiry SPV.03G, SPV.04G, SP1.09G, SP1.10G	- applies few of the design and inquiry principles while composing still images and using computer graphics software	- applies some of the design and inquiry principles while composing still images and using computer graphics software	- applies most of the design and inquiry principles while composing still images and using computer graphics software	- applies all of the design and inquiry principles while composing still images and using computer graphics software
Communication TFV.03G	- describes the process of capturing still images with a limited degree of clarity	- describes the process of capturing still images with some degree of clarity	- describes the process of capturing still images with a considerable degree of clarity	- describes the process of capturing still images with a high degree of clarity
Application ICV.03G, IC1.04G	- demonstrates limited ability to identify career opportunities in professions related to photography and digital imaging and to develop education plans	- demonstrates some ability to identify career opportunities in professions related to photography and digital imaging and to develop education plans	- demonstrates a considerable ability to identify career opportunities in professions related to photography and digital imaging and to develop education plans	- demonstrates a high degree of ability to identify career opportunities in professions related to photography and digital imaging and to develop education plans

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 5.4a

Personal Photo Album Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/Understanding TFV.03G, TF1.02G, TF1.08G Identify and describe the processes of capturing still images	- is able to identify and describe few of the processes of capturing still images	- is able to identify and describe some of the processes of capturing still images	- is able to identify and describe most of the processes of capturing still images	- is able to identify and describe all of the processes of capturing still images
Thinking/Inquiry ICV.03G, IC1.04G Identify career opportunities in the communications field and develop appropriate education plans	- identifies career opportunities in the communications field and develops an appropriate education plan with limited effectiveness	- identifies career opportunities in the communications field and develops an appropriate education plan with moderate effectiveness	- identifies career opportunities in the communications field and develops an appropriate education plan with considerable effectiveness	- identifies career opportunities in the communications field and develops an appropriate education plan with a high degree of effectiveness
Communication TF1.09G Identify various cameras and accessories and describe how to test the component parts	- identifies various cameras and accessories and describes how to test the component parts with limited clarity	- identifies various cameras and accessories and describes how to test the component parts with moderate clarity	- identifies various cameras and accessories and describes how to test the component parts with considerable clarity	- identifies various cameras and accessories and describes how to test the component parts with a high degree of clarity
TF1.10G Explain the process of developing and printing photographic images	- explains the process of developing and printing photographic images with limited clarity	- explains the process of developing and printing photographic images with moderate clarity	- explains the process of developing and printing photographic images with considerable clarity	- explains the process of developing and printing photographic images with a high degree of clarity
Application SPV.03G, SP1.09G, SP1.010G Compose, capture, and process still images	- composes, captures, and processes still images with limited effectiveness	- composes, captures, and processes still images with moderate effectiveness	- composes, captures, and processes still images with considerable effectiveness	- composes, captures, and processes still images with a high degree of effectiveness
ICV.02G, IC1.02G, IC1.03G Observe safety rules and regulations	- operates equipment safely and correctly only with supervision	- operates equipment safely and correctly only with some supervision	- operates equipment safely and correctly	- demonstrates and promotes safe and correct procedures when operating equipment

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.

Appendix 5.4b

Personal Photo Album Achievement Chart Rubric

Criteria	Level 1 (50–59%)	Level 2 (60–69%)	Level 3 (70–79%)	Level 4 (80–100%)
Knowledge/ Understanding TFV.03G, TF1.08G, TF1.10G, TF1.11G	- demonstrates limited knowledge of facts, technical terminology, procedures, and standards	- demonstrates some knowledge of facts, technical terminology, procedures, and standards	- demonstrates considerable knowledge of facts, technical terminology, procedures, and standards	- demonstrates thorough knowledge of facts, technical terminology, procedures, and standards
Thinking/Inquiry TFV.03G	- uses thinking skills with limited effectiveness	- uses thinking skills with moderate effectiveness	- uses thinking skills with considerable effectiveness	- uses thinking skills with a high degree of effectiveness
TF1.09G	- applies few of the skills involved in an inquiry/design process	- applies some of the skills involved in an inquiry/design process	- applies most of the skills involved in an inquiry/design process	- applies all or almost all of the skills involved in an inquiry/design process
Communication TF1.10G	- communicates information with limited clarity	- communicates information with moderate clarity	- communicates information with considerable clarity	- communicates information with a high degree of clarity and with confidence
Application SP1.09G, SP1.10G	- applies ideas and skills in familiar contexts with limited effectiveness	- applies ideas and skills in familiar contexts with moderate effectiveness	- applies ideas and skills in familiar contexts with considerable effectiveness	- applies ideas and skills in familiar contexts with a high degree of effectiveness
SP1.11G	- transfers concepts, skills, and procedures to new contexts with limited effectiveness	- transfers concepts, skills, and procedures to new contexts with moderate effectiveness	- transfers concepts, skills, and procedures to new contexts with considerable effectiveness	- transfers concepts, skills, and procedures to new contexts with a high degree of effectiveness
ICV.02G, IC1.02G, IC1.03, SPV.03G	- uses procedures, equipment, and technology safely and correctly only with supervision	- uses procedures, equipment, and technology safely and correctly with some supervision	- uses procedures, equipment, and technology safely and correctly	- demonstrates and promotes the safe and correct use of procedures, equipment, and technology
IC1.04G, ICV.03G, IC1.05G	- makes connections with limited effectiveness	- makes connections with moderate effectiveness	- makes connections with considerable effectiveness	- makes connections with a high degree of effectiveness

Note: A student whose achievement is below level 1 (50%) has not met the expectations for this assignment or activity.