

Selected Snapshots

Technology/Media-Based Applications



The Catholic School graduate is expected to be:

... a self-directed, responsible, lifelong learner who applies effective communication, decision-making, problem-solving, time and resource management skills. (OCSGE: 4f)

Planner



Technology and media-based applications are vital aspects of the learning environment of our students in this information-based society. It is, therefore, important that students learn the strategies and tools to use technology effectively and wisely in their learning: for productivity; *e.g.*, databases, spreadsheets, graphic applications; research *e.g.*, the Internet and online public access catalogues; and communication *e.g.*, email, Internet and Multimedia.

The Ontario Curriculum: Program Planning and Assessment, 2000 (p.9-10) identifies the role of technology in the curriculum as:

- developing information literacy skills;
- assisting students to become familiar with a wide range of software applications;
- developing the ability to critically evaluate information; and
- ensuring students use technology safely, effectively, confidently, and ethically;

To use technology effectively teachers need to collaborate within and across disciplines to plan integration of computers and information technologies into the learning process.

Technology facilitates the transfer of learning through presentation of learning, the synthesis of information and the production of new knowledge. Students require the skills to choose appropriate formats for presenting their culminating products and to use the appropriate technological tools to do so.

Principles of evaluation and discernment apply equally to the use of information accessed electronically as they do to media images and text. Students must be encouraged to develop the habits of mind that are essential for dealing with technology. These include commitment to accuracy, precision and integrity in observation, experimentation and reporting, respect for evidence, concern for safety procedures, and respect for the environment and its living things. (*The Ontario Curriculum: Science and Technology, 1998, p.9*)

Multimedia Applications

Description

Multimedia applications are computer software programs that integrate a variety of elements such as sound, animation, text and graphics into a presentation format.

Multimedia applications allow students to practice their skills in a variety of technologies by creating a multimedia production. Such applications are non-linear and allow students to compose, communicate and create new knowledge in innovative ways. The use of multimedia applications for personalizing learning and demonstrating understanding is highly motivating for students.

Teaching/Learning Strategies

Multimedia authoring software enables the creation and editing of multimedia documents for presentation and publication to a variety of audiences; *e.g.*, classroom, Internet. Hypermedia is multimedia that provides hypertext links between computer text and audio-visual material.

Method

The teacher:

- models the use of multimedia applications by creating classroom presentations;
- provides a relevant framework and purpose for using multimedia applications;
- creates a forum where work can be presented and analyzed;
- provides students with guidance on the self-evaluation of process and product in the creation of multimedia presentations;
- provides access and time to use the tools required for multimedia presentation; and
- provides guidance in the use of multimedia applications to ensure inclusion and analysis of content versus the use of effects for *show*.

Considerations

Multimedia applications:

- require extra memory and processing power in the computers used;
- are not necessarily tied to one particular platform or program;
- require additional time outside of class to create meaningful presentations; and
- require a rigorous selection process to ensure quality, relevancy, and value.

Illustrations

Elementary

- *identify Canadians who have contributed to space science and technology (6s119)*

Students, working in small groups, create a multimedia presentation highlighting one Canadian who has made a significant contribution to space science and technology. Students can use images in the public domain and original audio taped information for the presentation.

Secondary

- *demonstrate understanding of the importance of managing an ergonomically correct work environment (IM3.01X)*

Students use different information technologies to create a multimedia presentation demonstrating the various aspects of an ergonomically correct workplace.

Demonstrations of sound ergonomic practices might be captured on video and played the various aspects of an ergonomically correct workplace. Demonstrations of sound ergonomic practices might be captured on video and played for the audience or the principles can be outlined with text and graphics through a slide presentation program.



Selected Snapshots

Technology/Applications: Multimedia Applications

Teaching Notes

The teacher should be familiar with the multimedia applications that the students will be using, in order to model their use and guide the students as they prepare their projects. Multimedia presentations are an effective and exciting way to integrate computers into a content area such as **Social Studies** and at the same time encourage project-based learning. Students should have already been introduced to the topic through classroom activities, so that they can select appropriate aspects to investigate in more detail.

Experience in searching websites should be provided. For example, Grade 4 students could use the Internet to explore aspects of *Medieval Society*, following guidelines for the task established beforehand.

Students are able to share their expertise when they present to their peers. Students could use a presentation application such as Powerpoint or Corel Presentations to display their understanding. Other options might include video or audio components and an accompanying oral explanation of learning.

Accommodations/modifications

- ◆ Multimedia formats allow students to be creative in ways that draw upon diverse personal strengths, especially if they are collaborating in small groups.
- ◆ Students may need to be partnered according to skills in browsing the Internet and using computer software, so that learning in these areas can also occur.
- ◆ A variety of programs can be used to create or manage graphics, tables, charts, graphs, maps, text, etc. Links to websites can be incorporated.
- ◆ The expectations and parameters of the task should be clear from the start, while still allowing for variations in format and style.

Assessment

- ◆ Three way (self, peer, teacher) assessment is possible and desirable in using this teaching/learning strategy.
- ◆ Criteria for content, scope, organization, impact on audience, etc should be established beforehand with clear rubric descriptors for each level.
- ◆ An example of a rubric is included on the next page.

Teaching/Learning Strategies

WEB RESEARCH PRESENTATION EVALUATION

Criteria	Level 1	Level 2	Level 3	Level 4
Visual appeal	Slide show included very limited (or no) use of colour, background and graphics	Slide show included some use of colour, background and graphics	Slide show included appropriate use of colour, background and graphics	Slide show included inventive or complex use of colour, background and graphics
Web research included in slide show (reasoning)	Information not consistently or closely related to topic chosen	Information generally related to topic with some redundant or unrelated items	Information sufficient, useful and appropriately related to topic	Information detailed and extremely helpful for understanding of the topic
Slide show content (organization, communication)	Few required slides were included (number, graphics, animations, transitions, clear content)	Most required slides were included (number, graphics, animations, transitions, clear content)	Required slides were included (number, graphics, animations, transitions, clear content)	Required slides were included (number, graphics, animations, transitions, clear content) - worthwhile additional slides provided
Oral presentation (communication)	Presentation did not hold interest of audience- lacked preparation	Most items were interesting or somewhat interesting- evidence of preparation	Presentation was interesting and well prepared	Presentation was captivating and carefully prepared



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Thinking Skill Strategies



The Catholic School graduate is expected to be:

... a reflective and creative thinker who thinks reflectively and creatively to evaluate situations and solve problems;

Thinking skill strategies develop critical thinking, questioning skills, analytical skills and reflective practices in students' approaches to learning. These strategies are also designed to foster creative and independent thinking and learning.

The rapidly changing world facing our students today demands creative and flexible thinkers who can evaluate information, generate new solutions and make thoughtful and ethical decisions. Developing critical, creative and effective thinkers is an important goal for educators.

A vital component of the thinking process involves self-reflection where students are taught to think about their own thinking processes, monitor and evaluate their own thinking and learning and modify their learning accordingly. Students are, thereby, able to understand their own learning styles, develop the habits of mind that result in commitment to tasks and goal-setting, and accept responsibility for their learning and their personal attitudes toward that learning.

Thinking skill strategies involve:

- organizational frameworks such as concept maps and mind maps that extend the thinking processes;
- representational strategies such as graphs, maps, charts and visual organizers that facilitate communication and transfer of learning to other situations; and
- evaluative processes such as experimenting, fair test and inquiry-based research that test assumptions and hypotheses for new learning.

Through consistent exposure and practice in thinking skills strategies, students can develop their own understanding and ability to deal with new situations, make complex decisions and meet their individual and community needs for now and the future.

Mind Map

Description

A mind map is a visual note-making strategy that allows students to sketch a central idea or to see the big picture of their topic and then create tree-like branches of additional information surrounding the central one. Mind maps can display key concepts and relationships, but differ from concept maps in that they are much more global in their approach. Mind maps can generate ideas or test prior knowledge, allow the free flow of ideas, and organize ideas in clusters on a page for understanding. The central element or focus is at the centre of the page, key words represent ideas and are connected to the central focus with lines. Colours and symbols may be used to make associations and provide mnemonic signals for recall.

Teaching/Learning Strategies

Method

The teacher:

- models the use of mind maps on a regular basis to access prior knowledge, or to generate new ideas about a topic
- provides an environment that allows for risk taking and the free flow of thoughts and ideas;
- uses mind maps as a preparation strategy for writing, planning for and evaluating projects;
- uses a mind map to create a record of a meeting with input from all participants;
- demonstrates how mind maps allow students to piggy back on others' ideas;
- understands that mind maps are particularly useful for visual learners and stimulate much creative input; and
- helps student see how mind maps can be used to synthesize information in a visual format; *e.g.*, after reading a novel, create a mind map of important aspects for a report.

Considerations

Mind maps:

- may be used for whole class, small group or individual work;
- may be used to demonstrate that the separate parts of the visual display are united into a whole around a central theme or idea; and
- enables all ideas to be represented initially, with accuracy and appropriateness reserved for later renditions.

Illustrations

Elementary

- *recognize and name the warm and cool colours and describe their emotional impact* (3a26)

Students are asked to create a web identifying the various uses of colour in their daily lives and how they relate warm and cool colours to their moods and feelings.

Secondary

- *organize, record, and analyse the information gathered* (BY2.05)

Students, working in groups, complete a mind map to demonstrate their familiarity with the topic of water.



Selected Snapshots

Thinking Skills Strategies: *Mind Maps*

Teaching Notes

The wonderful advantage to this thinking tool is that it can be used to help memory, review facts, general note-taking, planning and communication. Many students have found mind mapping to be an invaluable tool to help them through tests and exams.

Accommodations/modifications

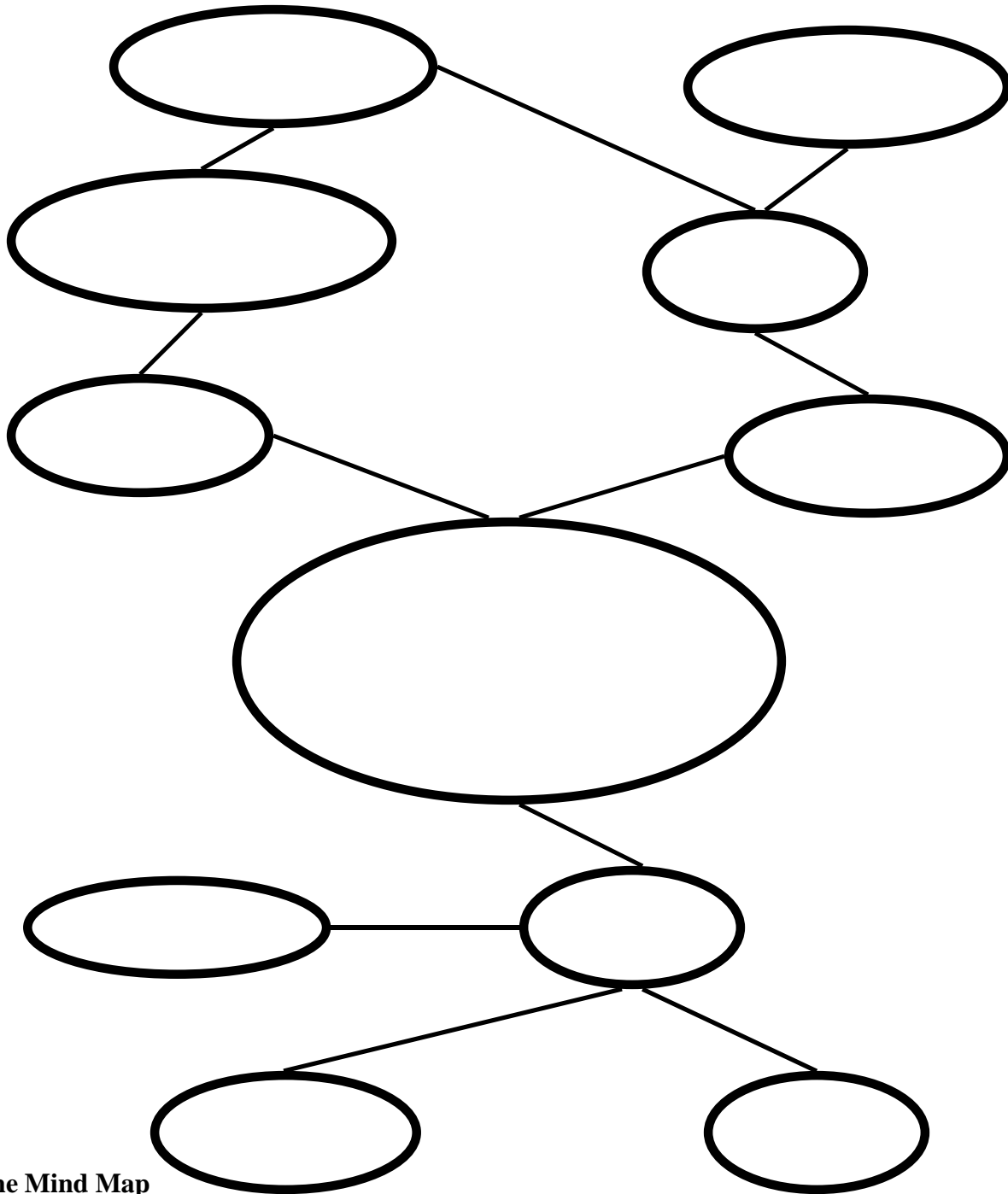
- ◆ *For the creation of a mind map:*
 - 1) *use a large sheet of paper;*
 - 2) *have loads of drawing materials on hand including coloured crayons, pens, markers, pencils (different nibbed tips), highlighters, calligraphy pens, etc.;*
 - 3) *select the topic, problem or subject you wish to map;*
 - 4) *gather the relevant information;*
 - 5) *starting in the centre of the page the topic title can be displayed;*
 - 6) *use dimension, expression and at least three colours when drawing the central image, in order to attract attention and aid memory;*
 - 7) *from the central image, radiate out key words and the most important ideas you have about the topic, each on a separate, thick line;*
 - 8) *branch thinner lines off the ends of the appropriate main lines, to show supporting details (the more important the information, the closer it should be to the central image);*
 - 9) *use images; and*
 - 10) *use lots of colour!*

Assessment

- ◆ Mind Mapping is a great summary of the learning. A wonderful organizer to help students reflect and set goals for their learning.

Teaching/Learning Strategies

APPENDIX VII a: Mind Maps



The Mind Map

- ◆ Shows the relationship among ideas.
- ◆ Review prior knowledge of an idea.

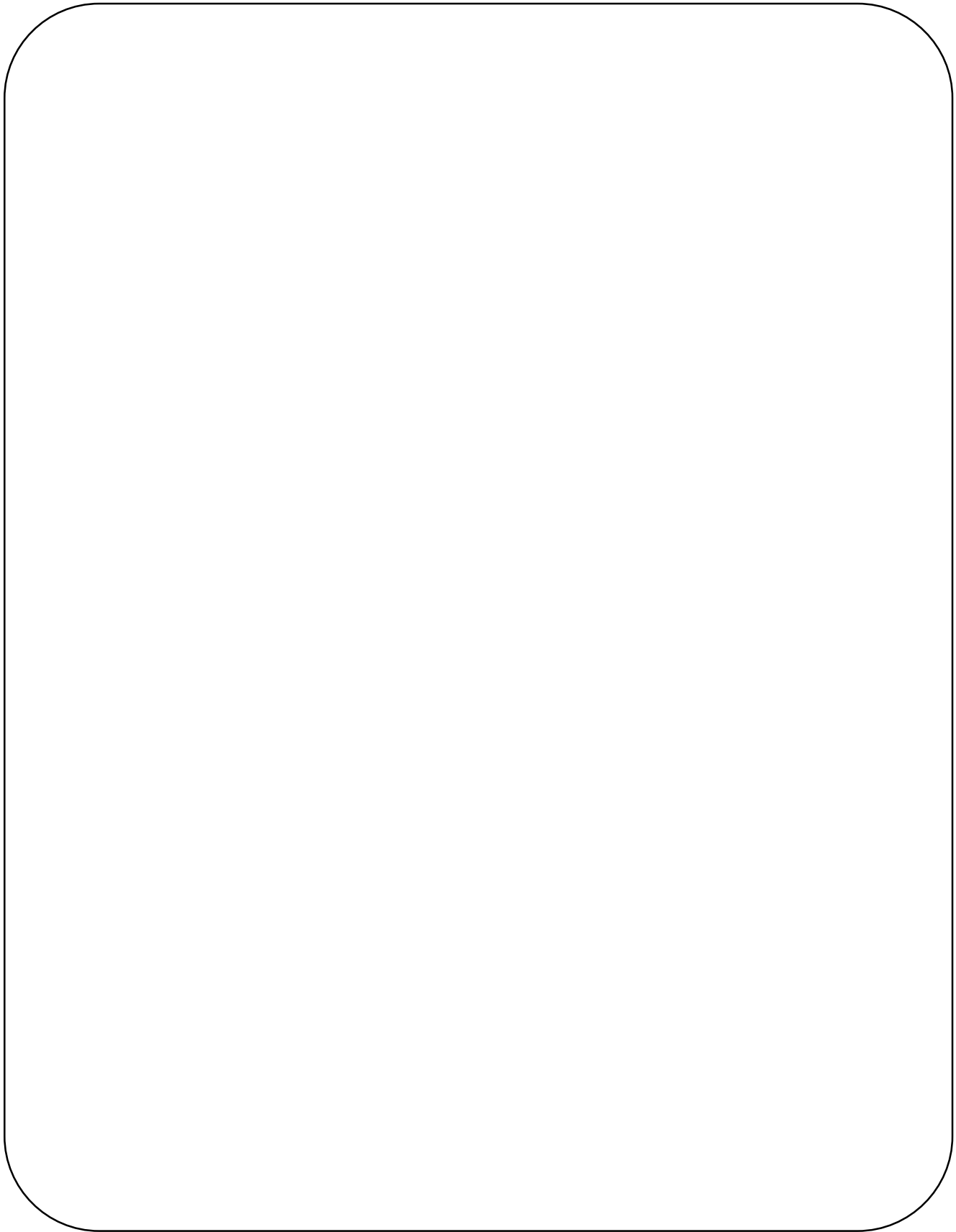
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Teaching/Learning Strategies



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