

CURRICULUM – PROGRAM DIFFERENTIATION

Overview

The curriculum is differentiated for students in order to:

- Ensure that the expected level of achievement is demonstrated
- Provide learning experiences at an appropriate cognitive level
- Provide them with the learning and thinking tools to allow students to maximize their learning potential
- Match instruction and evaluation with student learning styles.

The curriculum can be differentiated in **CONTENT, PROCESS, PRODUCT AND EVALUATION** by **DEPTH, BREADTH AND PACE**.

The strategies and planning models described in the following pages provide a variety of approaches to use when planning a differentiated curriculum:

- Thinking Skills
- Independent Study
- Addressing Social/Emotional Needs
- Process/Product Alternatives
- Bloom's Taxonomy
- Negotiated Learning
- Content Alternative
- Evaluation Alternatives.

Scope and Sequence

The scope and sequence on pages three and four provides a broad structure for instruction using the strategies described in this document. Aspects of a differentiated program are described as general expectations for the junior and intermediate divisions.

Principles of a Differentiated Curriculum

- Present content that is related to broad-based issues, themes or problems.
- Integrate multiple disciplines in the area of study.
- Present comprehensive, related, and mutually reinforcing experiences within an area of study.
- Develop independent or self-directed study skills.
- Develop productive, complex, abstract, and/or higher level thinking skills.
- Focus on open-ended tasks.
- Develop research skills and methods.
- Integrate basic skills and higher level thinking skills into the curriculum.
- Encourage the development of products that use new techniques, materials and forms.

- Encourage the development of self-understanding, e.g., recognizing and using one's abilities, becoming self-directed, appreciated similarities and differences between oneself and others.

Strategy/Skill Area	Grades 3, 4,5 and 6
<ul style="list-style-type: none"> • Thinking Skills • Creative Thinking • Critical Thinking • Bloom's Taxonomy 	<p>The student knows, understands and uses:</p> <ul style="list-style-type: none"> • The four aspects of creativity, brainstorming techniques, the creative problem-solving model and other creative thinking process e.g., SCAMPER, Cort Thinking, Six Thinking Hats. • The key skills of critical thinking, problem-solving and decision-making models. • All levels of Bloom's Taxonomy in posing and responding to questions, in selecting and completing learning processes and products across the curriculum.
Independent Study	<p>The student knows, understands and uses:</p> <ul style="list-style-type: none"> • Inquiry/research and decision-making processes to pursue an area of study which extends learning of a class based theme or an area of personal interest. • Higher order thinking skills in the context of independent learning. • Effective presentation skills to communicate learning • Skills of self and peer evaluation.
Negotiated Learning	<p>The student understands and participates in:</p> <ul style="list-style-type: none"> • The process of cooperative planning of learning activities and the products which demonstrate learning of overall and specific expectations. • Cooperative learning experiences.

Social/ Emotional Domain	<p>The student knows and understands:</p> <ul style="list-style-type: none"> • His/her own academic, social and emotional strengths and needs and uses them to set personal goals • Effect problem-solving and decision-making for academic, social and emotional situations.

GRADES 7 & 8

The student:

Applies creative thinking techniques fluently and flexibly in all curriculum areas and explains the most effective technique in a given situation.

- Applies critical thinking skills in areas such as media study, current affairs, debating, independent study
- Uses all levels of Bloom's taxonomy to enhance the depth and breadth of his/her learning.
- Selects and completes an increasing number of learning processes and products which require analysis, creativity and evaluation in relation to the theme/topic being studied.
- Poses and responds to questions which focus on analysis, evaluation and creative response.

The student:

- Plans and executes an effective process, product and presentation format for an independent study.
- Selects curriculum expectations which relate to an independent study.
- Selects and completes an original product for his/her independent study and presents to a suitable audience.
- Evaluates his/her own process, product and evaluation and makes future plans based on evaluation.

The student:

- Makes cooperative decisions about learning processes, products, content and evaluation.
- Engages in planning and completing authentic learning activities.
- Demonstrates effective cooperative group skills.

The student:

- Explores options, sets goals and self evaluates in academic, social and emotional

situations.

- Explores opportunities for leadership.
- Analyzes future educational and career options.
- Solves problems and makes decisions effectively in academic, social and emotional situations.

THINKING SKILLS

“Thinking is more basic than the basics. It frames all learning”-Robyn Fogarty

THINKING SKILLS IN THE CURRICULUM

Instruction in thinking skills interacts with student learning in a number of ways.

- Many skills appear in the form of operative verbs within the curriculum expectations e.g. compares, analyzes, selects.
- A number of problem-solving and inquiry models appear in the curriculum in several subjects e.g. mathematics, geography.
- Instruction in creative and critical thinking skills provides a framework and skill set for students to use as they address essential learning and extend their learning in areas of strength via differentiated curriculum.
- Problem-solving, decision-making and higher order thinking skills provide gifted students with a framework for learning in affective and social domains, for goal setting and career planning.]
- Higher order thinking skills and models form an effective structure for planning differentiated curriculum (see Bloom’s Taxonomy).

Approaches and Models

A number of approaches to thinking instruction have been developed many of which aim to structure skills for student learning. A model is useful only if it addresses student needs and supports student learning. While it is useful to pre-teach skills in isolation, all thinking skills are intended to be applied to real situations for them to serve a purpose.

APPROACHES TO TEACHING THINKING SKILLS – QUICK REFERENCE

General Thinking Skills Terminology

Thinking may be divided into:

The CREATIVE phase, in which ideas are produced.

The CRITICAL phase, in which they are evaluated.

Thinking skills may also be categorized as:

DIVERGENT THINKING

The skills related to producing ideas.

CONVERGENT THINKING

The skills related to bringing one's thinking to a certain end, purpose or conclusion.

The following approaches to thinking skills are described in this document:

1. The Four Aspects of Creativity

Students are taught fluency, flexibility, elaboration and originality. Application of these aspects of creative thought form the prerequisite skills for problem-solving, decision-making and critical thinking.

2. Specific Thinking Skills

The CORT I to V programs provide students with a repertoire of logical, Critical and creative skills. These skills form a tool kit available for use in Planning, problem-solving and decision-making situations.

3. Six Thinking Hats

Using Edward de Bono's formula for separating thinking into six distinct modes we can teach students to "put on" a hat to focus their thinking and "switch" hats to Redirect thinking.

4. Creative Problem-Solving Model

A systematic format in which students use brainstorming, divergent thinking, decision-making and drama to identify and solve problems, then communicate their ideas.

5. The Ten Essential Skills of Critical Thinking

A comprehensive set of skills needed to evaluate and judge the validity of ideas, information and opinions. They form the backbone of higher order learning.

6. Talents Unlimited

A series of broad thinking skill areas around which learning activities may be developed; useful as a structure for unit planning.

7. Bloom's Taxonomy

A hierarchy of lower and higher order thinking which provides a structure for differentiated curriculum planning, questioning, students products, independent study.

The Four Aspects of Creativity

Student Needs Addressed

The four aspects of creativity from the prerequisite skills to open-minded problem-solving and decision-making. For a creative, divergent learner, they provide an outlet and structure for an area of strength. For a shy perfectionist student they offer a way to increase risk-taking and ideational fluency.

Description

Students are taught the following aspects of creative thinking. They practice them in thinking activities and learn to apply them to all learning tasks.

1. **Fluency** - the ability to generate a large quantity of ideas.
2. **Flexibility** - the ability to examine ideas from different points of view and in different categories.
3. **Elaboration** - the ability to develop or extend ideas with detail.
4. **Originality** - the ability to produce original responses.

General Classroom Applications

- Teach and practise the four aspects through regular brainstorming activities.
- Apply the four aspects in generating ideas for writing, unit activities, problem-solving, alternate solutions, decision-making, curriculum co-planning, exploring issues and points of view, drawing, design, drama.
- Include the four aspects of creative thinking as criteria for self-evaluation.
- Teach students to reflect on the fluency, flexibility, elaboration, originality of their thinking throughout the learning process.

SAMPLE LEARNING ACTIVITY

All Grades –Self –Evaluation

The following questions may be used to promote student reflection and self-evaluation of creative thinking. These questions may apply to content, process or product.

THE FOUR ASPECTS OF CREATIVITY:

Fluency

1. Did you think of many ideas/possible solutions before deciding on your focus for the assignment?

Flexibility

1. What alternative ways did you think of to solve the problem or tackle the assignment?
2. In a group project, what ideas from other people did you include?
3. Which of your ideas were accepted by other group members?
4. What problems were encountered in accepting other points of view than your own?

Elaboration

1. How well did you elaborate on/add to your ideas as you worked through this project?
2. Were there any times when you should have added more detail than you did?

Originality

1. Which aspect(s) of your work was the most original or unusual?
2. Are there any original or unusual ideas which you would add if you were doing this project again?

SPECIFIC CREATIVE THINKING SKILLS

Student Needs Addressed

The series of specific thinking skills provide students with a tool box of techniques to use in creative and analytical thinking, problem-solving and decision-making.

Description

The specific skills can be taught in isolation then practised in realistic problem situations. Once learned, they can be used by students in curriculum related activities. Many of the techniques have acronyms, making them easier for students to remember. For example,

- Plus Minus Interesting (PMI)
- Consider All Factors (CAF)
- Consequences and Sequences (C & S)
- First Important Priorities (FIP)
- Other People's Views (OPV).

For a complete description of the skills, lessons and practice problem situations, refer to:

1. CORT THINKING I to V by Edward De Bono, Toronto: Pergamon Press, 1986.
2. JUST THINK. CA: Thomas Geale Publications, Manhattan Beach Publications, 1982.

General Classroom Applications:

- Teach the skills using authentic practice problems as part of regular thinking skills lessons.
- Use the techniques and skills when designing learning activities across subject areas.
- Encourage students to use appropriate techniques and skills when making decisions and problem-solving in social and learning situations.
- Display skills which are most frequently used in the classroom.

SAMPLE LEARNING ACTIVITIES:

1. Grade 4 Social Studies- Location/Function

Learning Expectation: Maps and Models

Performance Criteria: - identifies the kinds of information that can be found on a map, globe and/or atlas.

- As a diagnostic learning activity, students work with a partner to develop a list on chart paper of different kinds of information found on maps. Students use **Consider All Factors (CAF)** to ensure that they generate as many ideas as possible. The chart paper lists are displayed and discussed to consider whether any ideas can be added.
- Follow-Up: An assignment in which students locate examples of maps which show the different kinds of information identified in the **CAF**.

2. Grade 8 Geography – Understanding and Managing Change

Learning Expectations: - anticipates ways in which global and environmental factors may affect personal career and lifestyle choice.

Performance Criteria: - identifies local examples of environmental change that may be seen from different perspectives.

- Present students with a typical local development situation and question:

“In an area of rapid urban growth, there is a large swamp and old growth wood lot. What is more important, a shopping mall or forest?”

- Students work in groups of three and apply **Other People’s Views (OPV)** work.

- Each group takes on the role of one of the interest groups and develops ideas to reflect what the opinion of that group might be. Students present the various points of view in a role play of a community meeting.

SIX THINKING HATS

Student Needs Addressed

The six thinking hats allow students to think in different ways appropriate to a situation and to develop an awareness of the various uses of different types of thinking. They can be used in personal, social and academic problem-solving.

Description

Each of the six thinking hats represents a distinct mode of thinking. Students who are taught the meaning and use of each hat can then put on and switch hats independently or when prompted to consider a topic, issue, problem or theme from a variety of perspectives and for many purposes.

WHITE HAT	Pure facts, figures and information.
RED HAT	Emotions and feelings, hunches and intuitions.
BLACK HAT	Negative judgement, why it will not work, devil's advocate.
YELLOW HAT	Positive, constructive, brightness, optimism.
GREEN HAT	Creative, fertile, sprouting new ideas.
BLUE HAT	Thinking about thinking, meta-cognition.

General Classroom Applications:

- Teach the six hats in relation to common issues and problems close to student experience.
- Display six hats in class and use as prompts – “We should put on red hats for this activity...”.
- Use all six hats to structure a learning activity e.g. a character study in a novel, exploring a historical event.
- Use to teach flexibility in solving social or individual student problems.

SAMPLE LEARNING ACTIVITY

Students should be familiar with Six Thinking Hats before using them in a curriculum application such as the one described.

Novel Study- **The Giver** by Louis Lowry

Grade 8 Language

Specific Expectations – make judgements and draw conclusions about ideas in written materials on the basis of evidence.

-clarify and broaden their own point of view by examining the ideas of others.

- Students work in five groups each representing one of the thinking hats: White, Red, Black, Yellow, Green, Ideas are recorded on chart paper and shared at the end of the first part of the activity.

Focus questions: In **The Giver** members of society have no memories of the past. Consider this situation using your assigned thinking hat based on evidence from the story.

- After ideas are shared, students complete an individual written response:

Use Blue Hat thinking to summarize the effects of people having no memory of the past in **The Giver**.

COMPARING BLOOM'S TAXONOMY TO THE 3R'S FRAMEWORK

RETELL (Knowledge & Comprehension):

- Telling about..
- Using your own words.

Examples: - This is about...

- The first thing I do is..
- I notice that.....
- You mean to say that...

RELATE (Application & Analysis):

- making connections
- relating the process or strategy to prior knowledge or a previous, similar experience in.. Mathematics .. relating the components of the data/results to each other.

Examples:

- This reminds me of...
- It makes me think of...
- I remember...
- This is different from...
- This compares to....

REFLECT (Synthesis & Evaluation):

- Wondering about.. asking questions...sharing ideas and insights.....
- Reflecting on the effectiveness of their problem-solving process...

Examples:

- I wonder if...
- I wonder why...
- When I had difficulty proceeding...
- When my strategy didn't work, I...
- Next time, I'll...
- Now I understand that...
- I want to....

Sample Higher Order Thinking Questions (HOTS)- Novel Study**APPLICATION**

1. Choose one event in the novel. How did the main character react to this event? Why did he/she act this way? What else could he/she have done at this point?
2. Choose a minor character in the novel. How did he/she view the events of the story? Write an entry from his/her diary.
3. Prepare an abstract design to represent the mood and events of the novel. Consider what colours, lines, shapes and images would be suitable.
4. Write a letter to a character in the novel giving advice on what he/she should/could have done.

ANALYSIS

1. Think about the protagonist and the antagonist. Make a list for each giving their characteristics. Now compare the two characters. Are they exact opposites? Or are they alike in any way(s)?
2. What is the theme of this book? Develop a web diagram showing ways in which the theme is developed in the story. Remember that a theme can be developed by the author in events, characters, setting and mood...

SYNTHESIS

1. After reading several books of one genre (e.g. fantasy, science fiction, adventure, mythology..), generate a list of characteristics that are the same for all or most books in that genre. Design a story line for another book in the same genre. You may use an illustrated story board, a timeline, a cartoon or another format agreed upon with your teacher.

EVALUATION

1. Was the ending of the story successful? Why? Explain how it could have been improved.
2. Imagine that you are the author's editor. The manuscript for this novel has just been submitted to you for publication. You have had a bad day and are feeling very critical. Write your suggestions for changes to be given to the author.

The Creative Problem Solving Model (C.P.S.)

Student Needs Addressed

Creative Problem Solving provides students with a model for problem-solving and decision-making. It teaches them to share their own ideas and to accept the ideas of others.

C.P.S. integrates the divergent thinking skills of brainstorming with the convergent decision-making phase and a creative dramatic presentation.

Description

This model of problem-solving and decision-making is widely used in the Think Bowl competition at a regional and provincial level. It also has many applications as a strategy for teaching problem-solving and decision-making.

The Creative Problem-Solving Model Overview

The model can be adapted to suit the specific nature of many learning activities. Students usually work in teams of three or four. Each team is presented with a problem situation and then works cooperatively through the problem solving process towards a solution. Teams communicate their solution and plan through a brief dramatic presentation. A recorder in each team takes notes in a booklet on each stage of the process. The teams are judged on their thinking as recorded in their booklets as well as on their final presentations.

Team members should be taught to think creatively: to develop many ideas, varied ideas, original ideas. Also, for the decision-making and planning component, they should be taught to select ideas which are:

- Relevant to the original situation
- Realistic
- Explained with sufficient elaboration.

After being presented with the problem situation, the teams do the following:

- Stage 1** A. Identify problems that might arise from the situation.
B. Decide on the most important or interesting problem and give three reasons For their decision.
- Stage 2** A. Brainstorm possible solutions to the most important problem identified in Stage 1B.
B. Select the three best solutions, then complete a decision-making grid to Identify the best solution based on certain criteria.
- Stage 3** Decide on a practical plan to put the solution into effect and give three reasons For the plan.
- Stage 4** Plan and present a brief presentation which identifies the problem, explains the Best solution and the plan for putting this solution into effect. Props may be Used. The dramatic presentation may be in the form of a skit, mime, song, Dance, interview etc. It is useful to teach students specific dramatic Conventions and skills e.g. tableaux, mime.

General Classroom Applications

- Use C.P.S. model as a strategy for students to explore issues related to a theme being studied.
- Use a culminating activity in an integrated unit for students to apply their learning.
- Present as an option for students to use as part of an independent study presentation.

- Use as a strategy for students to explore and make decisions related to issues in their school and community.
- Train and enter a team in the local Think Bowl event.

Critical Thinking Skills

Student Needs Addressed

Effective use of critical thinking skills are essential for all students. Many of them are embedded in The Ontario Curriculum (see [www.curriculum .org](http://www.curriculum.org)).

Description:

The ten essential critical thinking skills are as follows:

- Identifying the central issue of a topic;
- Distinguishing between fact and opinion;
- Detecting bias;
- Determining the reliability of a source.
- Distinguishing between unsupported and supported claims.
- Distinguishing between relevant and the irrelevant.
- Recognizing inconsistencies in a line of reasoning;
- Recognizing underlying assumptions;
- Identifying invalid support for conclusions;
- Determining whether facts support a generalization.

General Classroom Applications

- Many of these skills are embedded in the Ontario Curriculum specific expectations and so form an inherent part of unit planning.
- Current affairs, newspaper and magazine articles provide an excellent source of materials for teaching these skills.
- Introduce the skills gradually as students examine authentic issues.
- Gradually integrate skills into research and inquiry tasks.
- Integrate skills in peer and self-evaluation activities.

TALENTS UNLIMITED

Student Needs Addressed

Talents Unlimited is a vehicle for teaching students various thinking modes. It supports them in learning skills and cognitive processes which will support learning in all curriculum areas.

Description

Talents Unlimited is a series of broad thinking skill areas around which learning activities may be developed. It provides a useful structure for unit planning. The five thinking skills “talents” make up a spectrum of skills applicable in any curriculum area:

- **Productive Thinking:**
This talent consists of the four aspects of creativity (See page 7). Students use this talent when they are generating ideas.

- **Forecasting:**
This involves skills related to predicting the causes and effects of an event/situation.

- **Planning:**
By using this talent, students identify a purpose, think of materials they may need, outline the steps of a plan and identify possible problems.

- **Decision-Making:**
Students use this talent to find alternatives, select criteria, use a grid to judge each Alternative and make a decision, then give reasons for their decision.

Sample Learning Activity:

Use the following prompts to focus on student thinking learning activities involving inquiry, design, investigation, planning independent studies, planning group projects or units planned specifically using Talents Unlimited.

Productive Thinking

Think of many ideas which will help in this task.
Brainstorm many alternative solutions to this problem.
Make a web of all that you know about this topic.
List information which you need to gather.

Forecasting

What are the causes of this situation/problem?
What will happen as a result of the situation/problem?
What would be the effects of various solutions?
What problems would arise as a result of your plans?

Planning

What materials will need to complete your project/solution?

What kind of help/advice will you need?
 List the steps you will have to go through.
 How much time will be needed for each step?

Decision- Making

List all possible alternatives.
 Select the options which are realistic and achievable.
 What criteria will you use to help you judge which is the best option?

Communication

How can you best communicate your ideas?
 What will your audience be?
 What media will be most suitable to share, celebrate or advertise your ideas/conclusions?
 What skills will you need- writing, presentation, technology?

INDEPENDENT STUDY

Students are taught basic steps in researching:

Topic	-interested generated
Purpose	-a specific question or questions are asked.
Organizing data	-determine how data is to be obtained and organized.
Collecting data	-locate and collect data.
Recording data	-record data in an organizer.
Assessing data	-check reliability of data
Concluding	-answer original question(s).
Evaluating	-evaluate overall product and process.
Reporting	- share findings with intended audience.

INDEPENDENT STUDY

NAME: _____ **TOPIC:** _____

Curriculum Specific Expectations:

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STEPS	DUE DATE	PROCESS CONFERENCE	NY/CD (not yet/can do)	PRODUCT CONFERENCE

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