

# Critical Thinking

**Rocky View's  
view of the future**

The skills needed to successfully negotiate and thrive in our new technically-literate society reach far beyond the basics of reading, 'riting, and 'rithmetic. As noted by one of the leading research groups in the education field, the Metiri group believes "success in the 21st Century makes it critical that students attain proficiency in science, technology and culture, as well as gain a thorough understanding of information in all its forms."

In order to move schools and classrooms towards an education system that prepares students for the 21st Century, Rocky View Schools developed its Portrait of a 21st Century Learner. This communique aims to build in our school communities, knowledge and a common understanding of the first characteristic of a 21st Century Learner - critical thinking.

**Fig. 1 Portrait of a 21st Century Learner**



**Understanding  
critical thinking**

Students think critically when they thoughtfully seek to assess what would be sensible and reasonable to believe or do in a given situation (Case & Daniels in press). The need for students to think critically across the K-12 spectrum arises in countless situations, such as when trying to gain an appreciation of different cultures, making healthy food choices, or constructing reports with the use of information from the Internet.

The University of British Columbia's Critical Thinking Consortium views critical thinking different than problem-solving, decision-making, analysis and inquiry. It views the later terms as occasions for critical thinking. By its definition, critical thinking is "the **quality** of thinking required to competently pose and solve problems, reach sound decisions, analyze issues, plan and conduct thoughtful inquiries." In other words, thinking critically is a way of carrying out these thinking tasks.

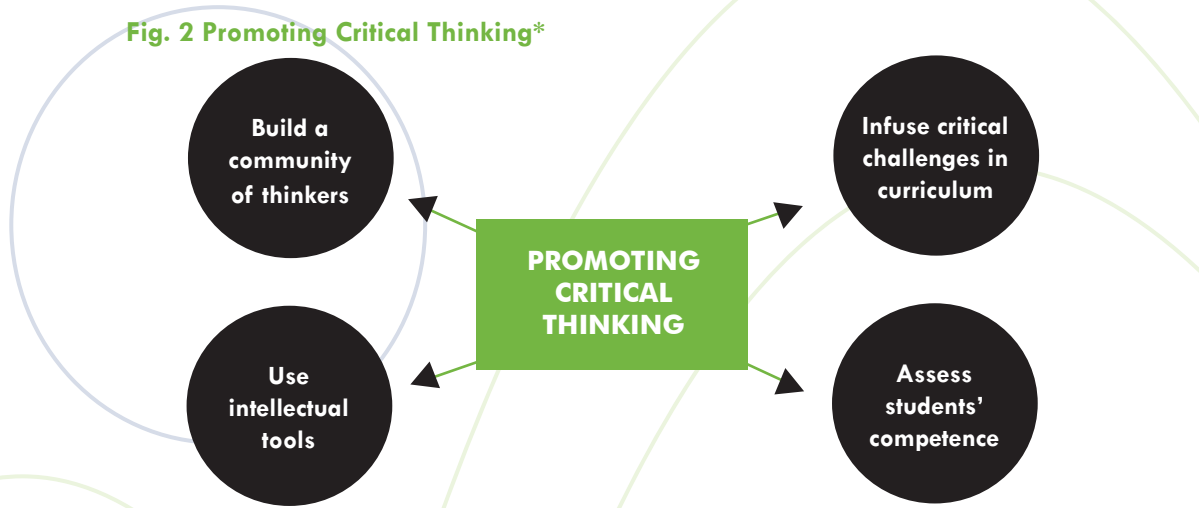
Given this definition, the goal in building critical thinking in students is not to ensure they arrive at preconceived right answers; rather the aim is to secure responses that are supported with evidence, give consideration to alternative points of view, and stand on firm belief.

**engage enrich empower**

## Promoting critical thinking in the classroom

Based on a model developed by the Critical Thinking Consortium, educators across Alberta and British Columbia are beginning to help students build critical thinking skills through the use of a four-pronged approach:

**Fig. 2 Promoting Critical Thinking\***



\*(Understanding Critical Thinking <<http://tc2.ca/>> 2008)

### Building a community of thinkers

Critical thinking skills will not be mastered by students unless these skills are called upon and used on a regular basis. To be successful, school communities must value reflective enquiry and promote multiple ways of approaching a question. Suggestions and routines offered by the Consortium include:

- Regularly posing questions and assignments requiring students to think through, not merely recall, what is being learned.
- Creating opportunities for students to confer, inquire, debate, and critique.
- Employing self and peer evaluation as ways of ensuring students think critically about their work and the work of others.
- Modeling good critical thinking practices.

### Infusing critical challenges across the curriculum

To move students beyond memorization of the curriculum and to use a full range of critical thinking skills, the subject matter must be framed so it invites students to assess “the reasonableness of plausible options or alternate conclusions”. Moreover, the subject matter should be presented in a manner that students find meaningful and engaging. In illustration,

**Fig. 2 Invitations to Think Critically\***

Topic	Possible Questions		
Foods	1. Ice cream belongs in which of the four food groups?	2. What is your favourite ice cream?	3. Should ice cream be part of a family diet?

\*Alberta Education, Social Studies Online Guide. Pg. 6

### Using intellectual tools

The Critical Thinking Consortium promotes the use of five types of tools to help students develop critical thinking skills. These categories of tools are: background knowledge, criteria for judgment, critical thinking vocabulary, thinking strategies and habits of mind.

**Fig. 4 Intellectual Tools\***

**1. Background Knowledge** ~ *the information about a topic required for thoughtful reflection.* Students cannot think deeply about a topic if they know little about it. Two questions to ask in developing this tool:

- What background information do students need for them to make a well-informed judgement on the matter before them?
- How can students be assisted in acquiring this information in a meaningful manner?

**2. Criteria for Judgement** ~ the considerations or grounds for deciding which of the alternatives is the most sensible or appropriate

Critical thinking is essentially a matter of judging which alternative is sensible or reasonable. Students need help in thinking carefully about the criteria to use when judging various alternatives.

- Is my estimate *accurate*?
- Is the interpretation *plausible*?
- Is the conclusion *fair* to all?
- Is my proposal *feasible*?

**3. Critical Thinking Vocabulary** ~ the range of concepts and distinctions that are helpful when thinking critically

Students require the vocabulary or concepts that permit them to make important distinctions among the different issues and thinking tasks facing them. These include the following:

- inferences and direct observation;
- generalization and over generalization;
- premise and conclusion;
- bias and point of view.

**4. Thinking Strategies** ~ the repertoire of heuristics, organizing devices, models and algorithms that may be useful

Although critical thinking is never simply a matter of following certain procedures or steps, numerous strategies are useful for guiding one's performance when thinking critically:

- *Making decisions* - Are there models or procedures to guide students through the factors they should consider (e.g. framework for problem solving)?
- *Organizing information* - Would a graphic organizer (e.g. webbing diagrams) be useful in representing what a student knows about the issue?
- *Role-taking* - Before deciding on an action that affects others, should students put themselves in the others' position and imagine their feelings?

**5. Habits of Mind** ~ the values and attitudes of a careful and conscientious thinker

Being able to apply criteria and use strategies is of little value unless students also have the habits of mind of a thoughtful person. These include:

- *Open-minded* - Are students willing to consider evidence opposing their view and to revise their view should the evidence warrant it?
- *Fair-minded* - Are students willing to give impartial consideration to alternative points of view and not simply impose their preference?
- *Independent-minded* - Are students willing to stand up for their firmly held beliefs?
- *Inquiring or "critical" attitude* - Are students inclined to question the clarity of and support for claims and to seek justified beliefs and values?

\*(Understanding Critical Thinking <<http://tc2.ca/>> 2008)

## Assessing students' progress

Finally, the Consortium model promotes, "What is counted counts." Evaluation is important and has significant implications on what students consider important and where they will expend their mental energies. The following figure illustrates how critical thinking tools and specific assessment criteria can be used in evaluating critical thinking in an argumentative essay and an artistic work:

**Fig. 5 Assessing for Tools\***

	<i>Evidence in a Persuasive Essay</i>	<i>In An Artistic Work</i>
Background Knowledge	<ul style="list-style-type: none"> <li>• cited accurate information</li> </ul>	<ul style="list-style-type: none"> <li>• revealed knowledge of the mechanics of the medium</li> </ul>
Criteria for Judgement	<ul style="list-style-type: none"> <li>• provided ample evidence</li> <li>• arranged arguments in logical sequence</li> </ul>	<ul style="list-style-type: none"> <li>• work was imaginative</li> <li>• work was clear and forceful</li> </ul>

\*(Understanding Critical Thinking <<http://tc2.ca/>> 2008)

## The connection between home and school

Parents, too, should foster critical thinking at home. In fact, teaching their children to reason at high levels is one of the most valuable skills parents can foster in their children, and one that will prepare them for success. Below are a few methods parents can try at home to help their child become a critical thinker.

- 1. Ask questions that lack a single correct answer.** Asking questions that don't have one right answer encourages children to think critically. For example, while reading a bed time story ask, "What do you think will happen next?" and "Why do you think that?" Beyond reading, parents can promote critical thinking in all areas by asking 'Why?' and encouraging children to support their answers with reasonable evidence.
- 2. Categorize and classify.** Classification plays an important role in critical thinking because it requires children to identify and sort according to a set of rules that they must first understand and then apply. Classification is easy and simple, whether it be sorting groceries for the fridge or laundry to be put away. When classifying be sure to ask questions about the similarities and differences between the groups.
- 3. Tackle questions together.** Working through questions together helps children to begin to understand how others think and that there are multiple ways of approaching any specific problems. In exploring various solutions, children should be encouraged to respectfully agree or disagree with the ideas of others, and to justify their opinions.
- 4. Make decisions.** Encourage children to consider pros and cons of a decision. Then evaluate their decision by asking "How do you feel about your decision? What would you do differently next time? Why?"
- 5. Model critical thinking.** Parents should demonstrate critical thinking by pondering aloud the most efficient way to do household chores, question the validity of a newspaper story, or offer their solution to a community issue. Describing how one thinks and solves problems is the best way for parents to instill similar thinking patterns in their children.

## Suggested reading

- Balcaen, Philip and Hirtz, Janine. "Developing Critically Thoughtful e-Learning Communities of Practice". University of British Columbia Okanagan, Kelowna, Canada. Website < [http://www.ejel.org/Volume-5/v5-i3/Balcaen\\_and\\_Hirtz.pdf](http://www.ejel.org/Volume-5/v5-i3/Balcaen_and_Hirtz.pdf)>. Last accessed August 24, 2008
- Brady, Marion. "Cover the Material - Or Teach Student to Think" Educational Leadership. February 2008: 14-19.
- Gardner, H. "The disciplined mind: What all students should understand. Simon and Schuster. 1999.
- Metiri Group. "Critical thinking". Website <<http://www.metiri.com/presentations/WVJuly07.html>>. Last accessed August 24, 2008.
- Swartz, Robert J. "Energizing Learning" Educational Leadership. February 2008: 26-31
- The Critical Thinking Consortium. Embedding Critical Thinking into Teaching and Learning. Alberta Education Website < <http://www.onlineguide.learnalberta.ca/content-og/ssocirm/pdf/embeddingcriticalthinkingintoteachingandlearning.pdf>>. Last accessed August 24, 2008.

## Additional resources

The Critical Thinking Consortium. Website <<http://tc2.ca/>>

## For more information

For further resources on Rocky View Schools approach to Critical Thinking contact Director of Schools Dave Morris at 403.945.4019.