

Embedding Critical Thinking Into Teaching and Learning

Contents of the Overarching Critical Inquiries

Many of the K–12 grade level resources for social studies, available online at LearnAlberta.ca, are organized around Overarching Critical Inquiries (OCIs). The purpose of each OCI is to cluster the teaching of many specific outcomes under a central idea. The term "critical" indicates that the inquiries focus on large questions or issues that require critical judgement. The OCIs described for each grade level are intended to suggest possibilities and to provide supports for instructional planning. The OCIs complement authorized teacher and student resources.

Each OCI consists of four features:

- **Synopsis:** a brief summary of the overall direction and kinds of activities that might prepare students to address the Overarching Critical Inquiry;
- **Sampling of Critical Challenges:** specific critical thinking lessons that might be undertaken in pursuing the larger OCI. These selections of suggested Critical Challenges are not sequenced, fully-developed sets of lessons. As the term "sampling" suggests, they are illustrative of the questions or tasks that would engage students in thinking critically about various components of the overarching inquiry. Clicking on the title of a Critical Challenge will lead to an outline of suggested activities for that question or task, specific learner outcomes that may be addressed, references and related resources;
- **Help Documents:** documents to support your use of the resources, such as Definitions of Terms Used in Overarching Critical Inquiries, Meeting the Diverse Learning Needs of All Students, and this document;
- **Reference Charts:** charts that provide a quick overview of correlations, references and summaries for all K–12 Critical Challenges.

Complementing the suggested activities for a particular Critical Challenge are four categories of related resources:

- **Support Materials:** ready-to-use instructional and assessment materials to support teachers in implementing the described teaching activities. These materials may include instructional strategies, materials for assessing student achievement, and graphic organizers and other charts to help students organize their thinking. Support Materials can be accessed through the specific Critical Challenges to which they apply or through a search. Support Material resources can be adapted for use at different grade levels and for different contexts;
- **Modelling the Tools:** detailed teaching suggestions that illustrate how teachers might help students develop a particular array of critical thinking skills that have wide applicability in the social studies curriculum. These lesson plans address the "tools" required for various tasks — from asking questions and interpreting pictures to solving problems and taking social action. These lessons can be accessed through the specific Critical Challenges to which they apply or through a search. Modelling the Tools resources can be adapted for use at different grade levels and for different contexts;

- **Background Information:** documents that provide information for students to access in order to address a specific Critical Challenge. These Background Information documents can only be accessed through the Critical Challenge to which they apply;
- **Lesson Materials:** ready-to-use instructional materials that are essential for the completion of the suggested activities in a specific Critical Challenge. These Lesson Materials can only be accessed through the Critical Challenge to which they apply.

A critical thinking approach

Critical thinking is one of the dimensions of thinking in the Skills and Processes outcomes of the Alberta social studies curriculum. More significantly, critical thinking is a powerful method of teaching all other outcomes—content, skills and attitudes.

All of the teaching ideas in the Overarching Critical Inquiries are built around critical challenges. A “critical challenge” is the term coined by The Critical Thinking Consortium (*TC*²)¹ to describe a problematic situation that invites students to think critically. If a situation is *not* problematic (i.e., there is only one plausible option or a correct answer is obvious) then it does not call for critical thinking. Throughout, the teaching ideas illustrate how critical thinking can be used to enhance student understanding of content, appreciation of attitudes and mastery of skills in the social studies curriculum.

This document provides further discussion on the following topics:

- Defining critical thinking
- Embedding critical thinking as an approach to teaching
- Recognizing invitations to think critically
- Judging effective critical challenges
- Creating critical challenges
- Teaching the tools
- Learning more about the *TC*² approach

*TC*² was founded in 1993 to provide long-term sustained support for teachers wishing to infuse critical thinking into their practice. Since that time, *TC*² has worked with over 25 000 educators and its institutional membership of school districts, faculties of education and other educational organizations extends to Alberta, British Columbia, Manitoba and Ontario, with affiliates in the United States and India. For more information, consult their Web site: <http://www.tc2.ca/#&panel1-2>

Defining critical thinking

In supporting critical thinking, the goal is to help students approach any task, problem or issue in an open-minded manner, to look carefully at the various options and to reach reasonable conclusions based on careful assessment of relevant factors. Critical thinking is about being thoughtful about everything students do and study in school.

The close relationship between the term “critical” thinking and “criteria” is instructive. Mathew Lipman suggests that the word “critical” should be seen as a synonym for “criterial”—to think critically is to think in light of or using criteria (M. Lipman, “Criteria and judgement in critical thinking,” *Inquiry* 9,2, 1992). A useful definition of critical thinking is as follows: ***To think critically is essentially to engage in deliberations with the intention of making a judgement based on appropriate criteria.*** Helping students think critically involves inviting them to assess the merits of various options before them on the basis of relevant factors.

Embedding critical thinking as an approach to teaching

Critical thinking is an important approach to teaching because of the enhanced satisfaction and learning that results when students are challenged to use and apply the ideas in the curriculum. Students who receive information in a passive or transmissive manner are less likely to understand what they have heard or read about than are students who have critically scrutinized, interpreted, applied or tested this information. Presenting subject matter in the context of a problem or an issue is more motivating to students and more likely to develop deeper understanding. As Richard Paul notes, “one gains knowledge *only* through thinking” (Richard Paul, “The logic of creative and critical thinking,” in R. Paul, *Critical thinking: How to prepare students for a rapidly changing world*, Santa Rosa, CA: Foundation for Critical Thinking, 1993). Teachers can help students understand the subject matter, as opposed to merely recalling it, by problematizing the subject matter. As John Dewey wrote in *How We Think*, only when a routine is disrupted by the intrusion of a difficult obstacle or challenge are we forced to think about what to do.

Compare the difference between, on the one hand, asking students to record information from the textbook on the distinguishing features of the major regions in Canada and, on the other hand, assigning students a specific region and challenging them to convince the rest of the class that their region would be the best place to move their entire family (in terms of climate, natural beauty, cultural attractions, occupations, lifestyle). The latter activity teaches the regions of Canada in a more meaningful way. With increased motivation, students are more likely to do additional research beyond the textbook, better understand the regional differences and remember more of these features when tested on the topic. In other words, critical thinking is a powerful approach to learning that enhances student interest and achievement.

Without altering the resources used or changing their classroom structure, teachers can challenge students in this way. For example, instead of asking students to locate information to answer the factual question “What did the Inuit traditionally use to make tools?”, the teacher might ask students to use this information to decide “Which animal—the seal or the caribou—contributed more to meeting the varying needs in traditional Inuit life?” Similarly, instead of writing a report on a famous leader, students might assess which of several contributions made by their assigned individual produced the most significant, widespread and long-term impact. Critical thinking is encouraged by discussing which of the suggested solutions to a dilemma raised by a playground incident or by a story is the most effective, feasible and safe. Instead of

simply picking a title that students would like for their persuasive paragraph, they could be asked to decide which of several possibilities was the most informative and engaging.

Even seemingly rote tasks such as taking notes can be opportunities to think critically. For example, students can be assisted in treating notetaking as an occasion to think critically by introducing them to the criteria for good notes. In teaching the criteria for good notes, students could be asked to imagine that they have been approached by a local politician to prepare concise briefing notes on the day’s front-page news. The requirements of their task are that the *precis* be less than half a page in length and that it should accurately summarize all the important points—but only for those topics that are of use to the politician. Students would be thinking critically about their notetaking as they judge whether or not their suggested entries are accurate, relevant, comprehensive and concise.

In all these cases, students go beyond locating facts or espousing a personal preference. They are not merely reporting what they know or like, but are offering a judgement or assessment of possible options, determining which would be the better choice (more reasonable, wiser, more justifiable) in light of the relevant criteria. In short, students are thinking critically about the content, attitudes and skills in the social studies curriculum.

Recognizing invitations to think critically

The starting point, but by no means the easiest of the challenges in promoting critical thinking, is with the questions and tasks asked of students. What does a question that invites critical thinking look like and how does it differ from questions that do not invite students to think critically? To illustrate this difference, consider the following types of questions we might ask.

Topic	Possible questions		
	1	2	3
Food	Ice cream belongs in which of the four food groups?	What is your favourite flavour of ice cream?	Should ice cream be part of a family diet?
Atlases	What kind of information is found in an atlas?	Do you prefer using an online or a print atlas?	Which of these three atlases is the most useful, reliable and easiest to use for our assigned purpose?
Explorers	What three incidents occurred during the first week of Simon Fraser’s descent down the river?	Would you have wanted to be with Fraser on his journey?	In light of his behaviour, was Fraser a hero or a rogue?
Pets	Who in the class has a pet?	Would you like to have a puppy as a class pet?	Which would make the best class pet—a dog, a hamster or frog?

For each topic, although all three suggested questions are appropriate and worthwhile inquiries, only one type invites students to think critically. “Column 1” questions ask students to recall or locate a correct answer from some source—from their memory, a book or some other reference. Typically, these questions have a single correct answer. The “Column 2” questions invite

students to share their feelings—what they like and dislike. There are no wrong answers to these questions, inasmuch as they are largely matters of taste: some students enjoy chocolate ice cream, others prefer strawberry; some students enjoy using the Internet, others do not. Only “Column 3” questions invite students to think critically. Although there may be several (many) reasonable answers to these questions, some answers may be unreasonable. For example, although plausible arguments can be made for having either a hamster or a frog as a class pet, it is unlikely that a large dog would be a good idea. “Column 3” questions ask students to go beyond locating facts and espousing a personal opinion or preference. When thinking critically, students are not merely reporting what they know or like. They are, in effect, offering a judgement or an assessment of possible options, determining which would be the justifiable choice.

In making thoughtful assessments (or reasoned judgements), we must inevitably resort to criteria. Some basis other than potentially narrow preferences and whims for selecting one option over another is required. For example, in deciding whether or not ice cream ought to be part of our diet, we would want to go beyond whether we personally liked the food and consider also whether it was nutritious, affordable, readily available and easy to keep. This larger set of factors forms the criteria involved in making a reasoned judgement of the merits of including ice cream in our diet. Only questions inviting this kind of assessment are invitations to think critically.

Judging effective critical challenges

Developing effective *critical challenges*—questions or tasks that invite students to think critically—is not an easy matter. Teachers need to think critically about their questions. Because thinking critically involves thinking with criteria, it is appropriate to consider what criteria would be useful in judging whether a proposed question or task actually invited students to think critically. Effective critical challenges meet the four criteria listed in the chart.

Effective critical challenges ...

<p>invite reasoned judgement among plausible alternatives</p>	<p>It is essential that challenges pose questions or tasks that invite students to judge the reasonableness of plausible options or alternative conclusions. Since criteria are essential to making reasoned judgements, the appropriate criteria should be implicit in the question. For example, assessing the quality of an information source involves considering its level of detail, accuracy and balance; choosing a classroom pet requires considerations of cost, size and ease of handling.</p>
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<p>limit the amount of background knowledge required</p>	<p>If students lack crucial background knowledge or are unaware of relevant criteria, and if they do not acquire these tools as they address the challenge, then the value of posing challenges may be lost. Students are likely to flounder if they lack basic information presupposed by the challenge. Critical challenges must be sufficiently delimited so students need not possess encyclopedic knowledge in order to realize success. For example, the question “Who is the greatest hero in Canadian history?” is a task that could fill a book. A more focused challenge is preferable, possibly, “Of the three people we have studied, who is the greatest hero?” Another way to reduce the amount of background knowledge is to restrict critical challenges to a single information source. In this way, students could acquire the information they need simply by studying the supplied material.</p>
<p>are perceived as meaningful by students</p>	<p>If students view a challenge as irrelevant and unimportant, they are unlikely to engage seriously in the activity and, over time, are likely to regard critical thinking as a boring or trivial exercise. Critical challenges are likely to engage students to the extent that the challenges:</p> <ul style="list-style-type: none"> • create dissonance with students’ pre-existing beliefs • involve real (or, at least, realistic) problems • have an obvious connection with a contemporary event, the local community or a personal concern of students • provide a sufficiently rich context so students are drawn into the situation • to the extent possible, are chosen or suggested by students themselves.
<p>advance students’ understanding of the content of the curriculum</p>	<p>Critical challenges should involve students in thinking critically about what we want them to learn from the curriculum. In this way, they are more likely to master the desired curriculum outcomes. Content is likely to have little meaning for students if they merely retrieve and present information. For example, instead of asking students to compare and contrast the services offered in two communities, we might ask them to judge which community better meets its members’ needs. In the course of justifying their judgements, students will better understand the curricular outcome dealing with an appreciation of the ways in which different communities meet individuals’ needs.</p>

Creating critical challenges

When creating critical challenges, the crucial criterion is that the question and task invites reasoned judgement—otherwise students are not being invited to think critically. Over the years, The Critical Thinking Consortium has noted patterns in the form that critical challenges may take. The following chart describes six ways of asking for a reasoned judgement. Many teachers find it helpful to think of these different forms when creating critical challenges.

Create critical challenges by asking students to . . .

Sample critical challenge

<p>Critique the piece Ask students to assess the merits or shortcomings of a designated figure, product or performance (may be teacher-provided or student-produced).</p>	<ul style="list-style-type: none"> • On a scale ranging from great to horrible, assess what it would be like to live at this time, considering the quality of the environment, comforts and fun things to do. • Does the textbook provide a fair and adequate account of what actually happened?
<p>Judge the better or best Ask students to judge from among two or more options (teacher-provided or student-generated) which one(s) best meet(s) the identified criteria.</p>	<ul style="list-style-type: none"> • Would life be better as a young person back then or right now? • Which is the more effective form of transportation in the Arctic: the dog-sled or the snowmobile? • Should your family move to Red Deer or Lethbridge? • Which of the nominees is the most impressive legacy of ancient civilization?
<p>Rework the piece Ask students to transform a product or performance in light of additional information or an assigned focus, perspective or genre.</p>	<ul style="list-style-type: none"> • Rewrite an historical account using the “Role–Audience–Format–Topic–Strong verb” framework. • Given the information provided, write a letter of reference for a famous historical person. • Redraw the historical picture showing the scene as it would appear in the present time (or in an historical period).
<p>Decode the puzzle Ask students to suggest and justify a proposed solution, explanation or interpretation to a confusing or enigmatic situation.</p>	<ul style="list-style-type: none"> • Find a powerful metaphor that characterizes an aspect of Canadian life. • Identify and support with evidence the R–A–F–T–S in a fellow student’s writing. • What is really happening in this illustration?
<p>Design to specs Ask students to develop a product that meets a given set of specifications/conditions.</p>	<ul style="list-style-type: none"> • Write a story that is true to the time period, involves all the characters in a meaningful way, and captures the mood of the scene in the picture. • Create six questions for an end-of-unit exam that are clear, nontrivial, manageable and require more than mere recall of information.
<p>Perform to specs Ask students to perform or carry out a course of action that meets a given set of specifications/conditions.</p>	<ul style="list-style-type: none"> • Dramatize a role play that is true to the time period and involves the key historical characters in a meaningful way. • Make a lasting contribution to someone else’s life. • Mount an information campaign to convince fellow students of the importance of an issue of local concern.

Teaching the tools

The Critical Thinking Consortium offers the notion of intellectual resources or “tools” to explain the development of good thinking. Learning to think critically requires acquiring the appropriate “tools” for thought. In this respect, arriving at a thoughtful answer is akin to constructing a house. Repeated attempts at either endeavour are likely to be slipshod without the requisite tools—in one case, the appropriate construction tools (saws, hammers, measuring equipment) and, in the other case, the relevant background knowledge, critical thinking vocabulary and strategies, criteria for judgement and habits of mind. Many students are likely to repeat errors, overlook key steps, ignore relevant factors, or remain hampered by a narrow outlook when they lack the tools needed to do a competent job. Instead, teaching students to think critically requires what Walter Parker refers to as “enabling instruction” (W. Parker, “Achieving thinking and decision-making objectives in social studies,” in J. Shaver (ed.), *Handbook of research on social studies teaching and learning*, Toronto: Collier Macmillan, 1991)—direct assistance in developing the requisite tools for the task. Various components of the Overarching Critical Inquiries—notably the Critical Challenges, Support Materials and Modelling the Tools—offer advice on what this enabling instruction might look like.

Although the specific tools depend on the nature of the challenge facing the thinker, promoting critical thinking is largely a matter of helping students master an ever-broadening repertoire of five types of intellectual resources:

<p>Background knowledge <i>knowledge of relevant information about a topic that is required for thoughtful reflection</i></p>	<p>Students need to acquire information relevant to the range of topics that we want them to be able to think critically about. Presumably this range of topics is (or should be) found in the subject matter of the curriculum. This point speaks strongly for embedding the teaching of critical thinking with the teaching of curricular content.</p>
<p>Criteria for judgement <i>knowledge of the appropriate criteria or grounds for judging the reasonableness or merits of the options presented by a thinking challenge</i></p>	<p>To think critically is essentially to engage in deliberations with the intention of making a reasoned judgement and judgements inevitably are made on the basis of criteria. Context-sensitive criteria relevant to the social studies curriculum range from what makes a good argumentative essay, what makes a sound solution to an economic problem or what makes a thoughtful question, to what are the qualities of a reliable primary source, an accomplished speaking performance or effective lecture notes.</p>
<p>Critical thinking vocabulary <i>knowledge of the concepts and distinctions that are needed to think about the challenge</i></p>	<p>Although other tools also refer to concepts, “critical thinking vocabulary” refers to concepts that expressly address distinctions foundational to thinking critically—for example, knowledge of the difference between “conclusion” and “premise,” “cause” and “correlation,” or “cause” and “effect,” and knowledge of various informal fallacies.</p>
<p>Thinking strategies <i>knowledge of procedures, graphic organizers and models that may be useful when thinking through a</i></p>	<p>Good critical thinkers draw upon a great variety of strategies to work their way through the challenges facing them. Thinking strategies may be very elaborate, such as following a comprehensive</p>

<p><i>challenge</i></p>	<p>decision-making model (for example, when tackling a complex problem begin by identifying the issue, then consider the consequences, research each option, and so on). Alternatively, they may be very focused strategies addressing a specific task (for example, to gain clarity about a statement rephrase it in your own words, ask others for clarification or graphically represent the problem). There are literally thousands of strategies that guide individuals in working through the challenges they encounter.</p>
<p>Habits of mind <i>commitments to the range of values and principles of a careful and conscientious thinker</i></p>	<p>Although more commonly described as dispositions, the term “habits of mind” refers to the intellectual ideals or virtues to which a careful and conscientious thinker will be committed. These intellectual virtues orient and motivate thinkers in habitual ways that are conducive to good thinking, such as being open-minded, fair-minded, tolerant of ambiguity, self-reflective and attentive to detail.</p>

Learning more about the TC^2 approach to critical thinking

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