



Learning WITH LEONG

Thank you for using our teacher materials for teaching 21st century skills. For this project, we have used [ACARA](#)'s general capabilities continuum for "[Critical and Creative Thinking](#)" and "[Personal and Social](#)" as a guide and inspiration.

Our focus for the materials that follow is on the specific skill of "**Assessing Bias & Reliability.**"

Here, we try to provide straightforward material that can be used by educators to help make it easier to incorporate 21st century skills into units of study. The materials can be used as-is or altered to fit what works best for the intended audience. This document contains four parts...

1. **Lesson Planning: Questions for Consideration** - These questions are intended to prompt educators to think about the different ways they can incorporate this particular 21C skill into their lessons. The questions are not meant to be prescriptive in any way, nor is it intended that all of them would be applicable to every unit of study. They serve to simply offer ideas for consideration. These questions could be used by individual teachers interested in developing their lessons further, in department meetings to collectively brainstorm ways their specific subject matter could work to incorporate the 4Cs, or during professional development to support teams of teachers during their planning of units of study.
2. **Student Reflection Guide** – This section is intended for use directly with students as a way to help them become more aware of the ways in which they use various 21C skills and to contemplate the ways in which they can strengthen these skills. The guides are designed with the understanding that many of these skills can only be built through application and that metacognitive reflection helps to accelerate the acquisition of these skills. There are three pages for this section. First, a handout for students to complete at the beginning of a unit/project. Second, a check-in giving the students a chance to reflect and for the student or teacher to make some adjustments, perhaps, before the end of a unit of study. Third, a final reflection on the experience as it pertains to this particular 21C topic of focus. As with all of the materials, the expertise of the teacher would determine whether the guides are best used as-is or just in parts and can also be altered to fit the needs of the individual classroom.
3. **Character Analysis** – This section provides a list of questions to be used to examine and reflect on a person's or character's life as it relates to this particular 21C topic. The questions provide a lens through which to view that person's actions. Some examples of how to use them might be to ask students to apply them to the actions of a particular person in history, the professional trajectory of a scientist, the life of a famous artist/athlete/writer, or a character in a novel. They could be used for group discussion or

to produce presentations or essays. The questions can also be applied directly to the student's life, if desired. The hope is that through reflecting on the life of another person and how they demonstrated a particular 21C skill that the students will gain insight into the ways in which these skills impact people and can, perhaps, apply that to their own life as well.

4. **Standards** – In this section, we listed the standards that apply to this particular 21C skill. Specifically, elements from ACARA's continuums that apply to this particular topic are listed with a focus predominantly on Level 6 in the continuum. In addition, standards from several other organizations around the world are also included in order to offer educators more insight as to how 21C skills are discussed and to serve as a resource as they work to incorporate these skills into the curriculum. For more insight to these organizations, please refer to "[21st Century Skills – Resources for Educators](#)."

We hope that the resources are useful to you!

Lesson Planning

21 Century Capability: Assessing Bias & Reliability

Questions for Consideration:

1. Are students asked to consider their own bias as it pertains to the topic at hand?
2. Are students asked to explore a wide range of materials from a variety of sources and points of view to help them avoid confirmation bias?
3. Are students asked to check the author's background for their qualifications, expertise, and affiliations?
4. Are students asked to consider the source of the information and whether it is a reputable publication with a history of accurate reporting?
5. Are students asked to look into whether a source is funded by a particular organization/company?
6. Are students expected to look at a source's citations and references as a way to check for reliability?
7. Are students taught about peer-reviewed publications and what peer-reviewed means?
8. Are students taught to look at publication dates to assess if the information is current?
9. Are students taught to look out for emotionally charged words or logical fallacies that may indicate an author's bias?
10. Are students asked to cross-reference information so as to identify any discrepancies and to consider alternative viewpoints?
11. Are students given examples of implicit bias and strategies for how to recognize and avoid it?
12. Are students asked to consider the limits of biased perspectives (both their own and others')?

Student Reflection Guide - Anticipatory

21 Century Capability: Assessing Bias & Reliability

In this unit/lesson/project, we are going to be learning to/about _____.
(circle one) (circle one)

Before we begin, please write about what you know about this topic already.

What types of sources (people, websites, organizations, etc.) might present bias information on this topic?

How might you know that the source is bias?

What types of sources (people, websites, organizations, etc.) might present reliable and comprehensive information on this topic?

How might you know that the source is reliable?

Student Reflection Guide – Check In

21 Century Capability: Assessing Bias & Reliability

In this unit/lesson/project, we are learning to/about _____.
(circle one) (circle one)

Please write about what you know about this topic so far.

Have you come across any biases of your own about this topic? If so, what made you aware of this bias? If not, how have you avoided being bias?

Have you come across any biased sources?

How did you know they were bias?

What have been the most reliable sources you've come across?

How did you know they were reliable?

Student Reflection Guide - Final

21 Century Capability: Assessing Bias & Reliability

In this unit/lesson/project, we learned to/about _____.
(circle one) (circle one)

Please write about what you know about this topic now.

Over the course of this unit/lesson/project, what did you learn about bias?

Over the course of this unit/lesson/project, what did you learn about how to check for reliable sources?

How did this knowledge help you in this unit/lesson/project?

How might this knowledge be useful later?

Character Analysis

21 Century Capability: Assessing Bias & Reliability

Questions for Analysis:

1. Do you think this person was good at assessing bias and reliability? Why or why not?
2. Why was it important for this person to assess bias and reliability?
3. How did this person go about recognizing and limiting their own biases?
4. How did this person go about recognizing bias from other sources?
5. How did this person go about checking that the information they used was reliable?
6. In what ways was assessing bias and reliability challenging for this person?
7. How did this person and/or their skills in assessing bias and reliability change over time?
8. Was there a time when this person did not account for bias or reliability? Explain what happened.
9. How did this person's skills in assessing bias and reliability help them to...
 - a. accomplish their goal?
 - b. realize their dream?
 - c. overcome an obstacle?
10. How did this person's lack of ability/desire to assess bias and reliability impact their ability to...
 - a. accomplish their goal?
 - b. realize their dream?
 - c. overcome an obstacle?

Standards

21 Century Capability: Assessing Bias & Reliability

ACARA v.8.4

CRITICAL AND CREATIVE THINKING

Organize and process information

6 - critically analyse independently sourced information to determine bias and reliability

ACARA v.9

CRITICAL AND CREATIVE THINKING

Identify, Process, and Evaluate Information

6 - identify and clarify significant information and opinion from a range of sources, including visual information and digital sources; evaluate the information selected to determine bias and reliability

P21

CRITICAL THINKING AND PROBLEM SOLVING

Reason Effectively - Effectively analyze and evaluate evidence, arguments, claims, and beliefs;

Analyze and evaluate major alternative points of view

C21 Canada

CRITICAL THINKING

1 - Learners acquire, process, interpret, rationalize and critically analyze large volumes of potentially conflicting information to make informed and timely decisions.

COMMUNICATION

2 - Learners critically interpret and evaluate ideas shared through a variety of media and technologies.

ISTE

1.3. Knowledge Constructor - Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others. Students:

1.3.b. evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.

AAC&U

CRITICAL THINKING

Evidence: Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis.

Viewpoints of experts are questioned thoroughly.

Student's Position: Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).

INFORMATION LITERACY

Evaluate Information and Its Sources Critically: Choses a variety of information sources appropriate to the scopes and discipline of the research question. Selects sources after considering the importance (to the researched topic) of the multiple criteria used (such as relevance to the research question, currency, authority, audience, and bias or point of view).

INTERCULTURAL KNOWLEDGE AND COMPETENCE

Knowledge: Articulates insights into own cultural rules and biases (e.g., seeking complexity; aware of how her/his experiences have shaped these rules, and how to recognize and respond to cultural biases, resulting in a shift in self-description).