



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 "**Handling Ambiguity & Complexity.**"

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: Handling Ambiguity & Complexity

Questions for Consideration:

1. Are students asked to use a range of sources to help clarify complex information?
2. Are students asked to clearly identify information and/or opinions from various sources?
3. Are students asked to synthesize information from a range of sources and perspectives?
4. Are students taught and given time to identify both objective and subjective aspects of a concept or problem?
5. Are students given tools (visual, digital, etc.) to help them break down and analyze complex information?
6. Are students asked to consider the context of a situation/problem and its influence/dynamic?
7. Are there opportunities for students to build resilience, tolerance, and flexibility by working on complex, open-ended projects/problems?
8. Are students expected to consider and integrate various perspectives into their understanding of complex concepts/problems?
9. When there are conflicting positions are students guided to consider and evaluate diverse perspectives?
10. When stating their position/hypothesis, are students expected to account for the complexity of the situation/problem?

Student Reflection Guide - Anticipatory

21 Century Capability: Handling Ambiguity & Complexity

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 different perspectives/evidence might be important to learn about in order to understand this topic?

What aspects of this topic do you feel are most complex/ambiguous?

What strategies or thought process might you use in order to avoid taking a position before having a chance to consider all the appropriate information?

Student Reflection Guide – Check In

21 Century Capability: Handling Ambiguity & Complexity

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.

What are some of the most complex elements of this topic?

What (sources, strategies, perspectives, etc.) has helped so far in understanding more fully the complexity of this topic?

Of what you've learned so far, what has been the most surprising or eye-opening?

What do you still need to know more about?

Student Reflection Guide - Final

21 Century Capability: Handling Ambiguity & Complexity

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

Please write about what you know about this topic now.

Write about an aspect of this topic that you feel you understand better as a result of this unit/lesson/project.

What helped you come to a better understanding?

Was it important to take into account the context and/or various perspectives? Why or why not?

List three questions that you still have that could help you understand this topic even more fully if you had more time to pursue the answers.

Character Analysis

21 Century Capability: Handling Ambiguity & Complexity

Questions for Analysis:

1. Do you think this person was good at handling complexity? Why or why not?
2. What were the complex situations/problems this person had to interface with?
3. How did this person go about understanding different perspectives?
4. What tools did this person use to help them make sense or keep track of complex concepts/situations?
5. In what ways was handling complexity challenging for this person?
6. How did this person and/or their skills change over time as a result of engaging with complex issues?
7. How did this person's skills in understanding complex information/problems help them to...
 - a. accomplish their goal?
 - b. realize their dream?
 - c. overcome an obstacle?
8. How did this person's lack of ability/desire to understand complex information/problems impact their ability to...
 - a. accomplish their goal?
 - b. realize their dream?
 - c. overcome an obstacle?

Standards

21 Century Capability: Handling Ambiguity & Complexity

ACARA v.8.4

CRITICAL AND CREATIVE THINKING

Identify and clarify information and ideas

6 - clarify complex information and ideas drawn from a range of sources

Reflect on processes

6 - balance rational and irrational components of a complex or ambiguous problem to evaluate evidence

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

Interpret Concepts and Problems

6 – identify the objective and subjective aspects of a complex concept or problem, with sensitivity to context

P21

FLEXIBILITY AND ADAPTABILITY

Adapt to Change - Work effectively in a climate of ambiguity and changing priorities

ISTE

1.4. Innovative Designer - Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. Students:

1.4.d. exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

AAC&U

CREATIVE THINKING

Embracing Contradictions: Integrates alternate, divergent, or contradictory perspectives or ideas fully.

CRITICAL THINKING

Student's Position: Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue.

GLOBAL LEARNING

Perspective Taking: Evaluates and applies diverse perspectives to complex subjects within natural and human systems in the face of multiple and even conflicting positions (i.e., cultural, disciplinary, and ethical).

INQUIRY AND ANALYSIS

Existing Knowledge, Research, and/or Views: Synthesizes in-depth information from relevant sources representing various points of view/approaches.