

## **Explicit mentions of critical literacy as an outcome in Grade 7-8-9 Science**

### **“Scientific Inquiry:**

Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., critically evaluate inferences and conclusions, basing their arguments on facts rather than opinions; identify evidence to support ideas; take the time to accurately gather evidence and use instruments carefully)”

- *Attitude outcome, Unit E Grade 7 science* (Alberta Education, 2014,p. 30).

### **“Scientific Inquiry:**

Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., consider a wide variety of possible interpretations of their observations of animal structures and functions; critically evaluate inferences and conclusions, basing their arguments on fact rather than opinion)”

- *Attitude outcome, Unit B, Grade 8 science* (Alberta Education, 2014, p. 38).

### **“Scientific Inquiry:**

Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., strive to assess a problem accurately by careful analysis of evidence gathered; critically consider ideas and perceptions, recognizing that the obvious is not always right)”

- *Attitude outcome, Unit A, Grade 9 science* (Alberta Education, 2014, p. 55).

## **Explicit mentions of critical literacy as an outcome in Science 10**

### **“Scientific Inquiry:**

Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., view a situation from different perspectives, propose options and compare them when making decisions or taking action; evaluate inferences and conclusions with a critical mind and without bias, being cognizant of the many factors involved in experimentation)

*Attitude Outcome, Unit D, Science 10, (p.33, Alberta Education, 2016).*

“Investigate and identify human actions affecting biomes that have a potential to change climate (e.g., emission of greenhouse gases, draining of wetlands, forest fires, deforestation) and critically examine the evidence that these factors play a role in climate change (e.g., global warming, rising sea level(s))”

*Outcomes for STS and Knowledge, for Unit D, Science 10* (Alberta Education, 2016, p.31).

## Explicit mentions of critical literacy as an outcome in Science 14-24

“Scientific Inquiry:

Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., critically evaluate inferences and conclusions; ask questions and do research to ensure personal understanding)”

- *Attitudes Outcomes, Unit A, Science 14, (Alberta Education, 2016, p.14).*

“Scientific Inquiry:

Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., insist that the critical assumptions behind any line of reasoning be made explicit, so that the validity of the solution can be judged; criticize arguments in which evidence, explanations or positions do not reflect the diversity of perspectives that exist)”

- *Attitudes Outcomes, Unit C, Science 14, (Alberta Education, 2016, p.24).*

“Scientific Inquiry:

Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., insist on evidence before accepting a new idea or explanation for waste reduction; insist that the critical assumptions behind any line of reasoning be made explicit, so that the validity of the position taken can be judged)”

- *Attitudes Outcomes, Unit D, Science 14, (Alberta Education, 2016, p.29).*

“Scientific Inquiry:

Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., expend the effort and time needed to make valid inferences; critically assess their opinion of the value of science and its applications)”

- Attitudes Outcomes, Unit B, Science 24, (Alberta Education, 2016, p.39).*

## Explicit mentions of critical literacy as an outcome in Science 20-30

Students will be encouraged to:

seek and apply evidence when evaluating alternative approaches to investigations, problems and issues; e.g.,

- consider the social and cultural contexts in which a theory developed
- appreciate how scientific problem solving and the development of new technologies are related
- insist on evidence before accepting a new idea or a new explanation
- assess, critically, their opinion of the value of science and its applications

- question arguments in which evidence, explanations or positions do not reflect the diversity of perspectives that exist
  - criticize arguments that are based on faulty, incomplete or misleading use of numbers
  - recognize the importance of reviewing the basic assumptions from which a line of inquiry has arisen
  - insist that the critical assumptions behind any line of reasoning be made explicit so that the validity of the position taken can be judged
  - evaluate inferences and conclusions, being cognizant of the many variables involved in experimentation
  - ask questions and conduct research to ensure understanding
  - expend the effort and time needed to make valid inferences
  - seek new models, explanations and theories when confronted with discrepant events
- (Alberta Education, 2014, p.15,30)

### **References:**

Alberta Education. (2014). *Science grades 7-8-9* [Program of studies]

Alberta Education. (2016). *Science 10* [Program of studies]

Alberta Education. (2016). *Science 14-24* [Program of studies]

Alberta Education. (2016). *Science 20-30* [Program of studies]