

Creativity and Critical Thinking in Science

The Province of Alberta in Canada has mapped key competences against each subject in the curriculum. In Alberta Creative Thinking is made up of Creativity and Innovation and Critical Thinking:

https://education.alberta.ca/media/3576124/comp-in-science_20mar_17_final.pdf

CRITICAL THINKING in science involves using reasoning to question and test ideas, build understanding and develop scientific literacy.

- Students:
- use relevant criteria to evaluate scientific data, claims, theories or statements;
 - reason inductively and deductively to form and test hypotheses, categorize data or draw conclusions;
 - investigate the impact of assumptions and uncertainty when testing or interpreting hypotheses, generalizations and theories; and
 - apply scientific information with objectivity or fair-mindedness to make judgements or draw conclusions

CREATIVITY AND INNOVATION in science involves exploring materials, ideas or resources to generate new scientific ideas, products or processes.

- Students:
- recognize how new ideas or discoveries influence, and are influenced by, scientific knowledge and technologies;
 - demonstrate ingenuity and resourcefulness when designing or adapting investigations, models or devices for a specific purpose;
 - identify and evaluate potential applications of scientific information, discoveries or technologies;

And • are curious, inventive and open to new ideas about the world
dittee for Education and Training Full report, May 2014

