Resource 3 - 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.
- use inductive reasoning and deductions to form and test hypotheses.
- categorise data or draw conclusions.
- investigate the impact of assumptions and uncertainty when testing or interpreting hypotheses, generalisations 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:
- recognise 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.

Committee for Education and Training, Full report, May 2014