

THINKING

Critical-thinking skills: Analysing and evaluating issues and ideas

How can students think critically?

Practise observing carefully in order to recognize problems
Gather and organize relevant information to formulate an argument
Recognize unstated assumptions and bias
Interpret data
Evaluate evidence and arguments
Recognize and evaluate propositions
Draw reasonable conclusions and generalizations
Test generalizations and conclusions
Revise understanding based on new information and evidence
Evaluate and manage risk
Formulate factual, topical, conceptual and debatable questions
Consider ideas from multiple perspectives
Develop contrary or opposing arguments
Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding
Propose and evaluate a variety of solutions
Identify obstacles and challenges
Use models and simulations to explore complex systems and issues
Identify trends and forecast possibilities
Troubleshoot systems and applications

Creative-thinking skills: Generating novel ideas and considering new perspectives

How can students be creative?

Use brainstorming and visual diagrams to generate new ideas and inquiries
Consider multiple alternatives, including those that might be unlikely or impossible
Create novel solutions to authentic problems
Make unexpected or unusual connections between objects and/or ideas
Design improvements to existing machines, media and technologies

	<p>Design new machines, media and technologies</p> <p>Make guesses, ask “what if” questions and generate testable hypotheses</p> <p>Apply existing knowledge to generate new ideas, products or processes</p> <p>Create original works and ideas; use existing works and ideas in new ways</p> <p>Practise flexible thinking—develop multiple opposing, contradictory and complementary arguments</p> <p>Practise visible thinking strategies and techniques</p> <p>Generate metaphors and analogies</p>
<p>Transfer skills: Using skills and knowledge in multiple contexts</p>	
<p>How can students transfer skills and knowledge across disciplines and subject groups?</p>	<p>Use effective learning strategies in subject groups and disciplines</p> <p>Apply skills and knowledge in unfamiliar situations</p> <p>Inquire in different contexts to gain a different perspective</p> <p>Compare conceptual understanding across multiple subject groups and disciplines</p> <p>Make connections between subject groups and disciplines</p> <p>Combine knowledge, understanding and skills to create products or solutions</p> <p>Transfer current knowledge to learning of new technologies</p> <p>Change the context of an inquiry to gain different perspectives</p>