



# INNOVATION – CREATIVE AND CRITICAL THINKING

## Extension/lesson ideas

Here are some lesson ideas to complement the challenge cards or extend your students.

- As a class, brainstorm products that students think they could not live without. Create a list of these. Students then select one product and research to find out about its history. They can use the **'Can't live without it'** activity sheet to record their information.
- Students to choose what they think are the top 5 inventions from the last 200 years. Here are some examples to get started:
  - The personal computer
  - The airplane
  - The car
  - Penicillin
  - Television
  - The internet
  - Radio
  - The modern zipper
  - The Band-Aid
  - Aerosol can
  - Frozen food process
  - Telephone
  - Mobile phone
  - The black box flight recorder
  - Social media such as Facebook or YouTube

Once students have selected 5, they should choose one to research further. Students will then convince their classmates (through an oral presentation) that their chosen invention/product should be number 1. The class will vote for their favourite invention.

Some aspects to consider:

- How does this invention help people?
- What are the ethical, social or environmental impacts of this invention?
- How accessible is this invention (e.g. can most people afford or access it)?
- When, how and by whom was this invented?
- What problem or issue possibly led to the invention of this item?



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- Students to think about the tasks they undertake each day and make a list of those that they do not like. Once they have this list, they select one task and design a product or solution to help them complete it (e.g. a self-making bed or a rubbish bin that empties itself). Encourage students to be creative. They could draw plans, make a model and create an advertising campaign to promote their idea/product.

You may wish to watch episodes of Wallace and Gromit to stimulate student's thinking. Clips can be found on YouTube or at [www.wallaceandgromit.com](http://www.wallaceandgromit.com)

- Collect a range of recycled materials. In small groups, students select a few items and place them into a bag or container. They provide these to another group of students with the instructions to create something interesting using only those materials.
- In small groups, students to identify global issues that are important to them (e.g. climate change, pollution, the ozone layer, habitat loss, poverty etc.). Students then work together to devise a solution to address one issue.
- Many careers rely on creative and critical thinking (and STEM) skills. Students to select one career that they think they would like to pursue and research to find out what skills it involves. Students may wish to create a reverse timeline to show what they will need to do to create a pathway to that career (e.g. university, trade school, which subjects they may need to undertake at secondary school etc.).

Some possible careers include:

- Computer support specialist
  - Engineer
  - Psychologist
  - ICT security specialist
  - Cartographer
  - Accountant
  - Medical professional
  - Financial advisor
  - Web and software developer
  - Chef
- Creative and critical thinking requires many higher order thinking skills. Students to define the types of thinking on the **'Thinking about thinking'** activity sheet to explore the difference between them.



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- Students to complete the '**Creative crossword**' activity sheet. Reading through the Facts for students will help with the clues.
- Students to select an inventor, then research to find out more about him/her and devise a unique and creative way to present the information.
- Students to answer the questions on the '**Understanding thinking**' activity sheet. The questions are based on the information in the Facts for students.
- Students to think about a time when they were faced with a challenge/problem. How did they solve it? What processes helped them? Share their experiences with the class.
- Students to create a timeline based on Australian inventions over the years. Use photos/drawings to add to your timeline for visual interest. The IP Australia website has a list of inventions to get started.
- After completing one or more of the challenge cards, students to devise their own 'challenge' and write a task card to accompany it. Give these to a friend to complete.
- Students to decide on their best tip for others when approaching problems and challenges. They are to write a persuasive piece about why it is the best.
- Students to create a visual planner of the five-step problem solving process (referred to in the Facts for students). Present these around the classroom.
- In small groups, students to devise a short skit/role play about a challenging problem and act out ways to solve it.