Bebras Australia - Computational Thinking Challenge

FREE

delivered ONLINE in ONE HOUR

suitable for YEAR 3 - 12 STUDENTS

held 16 - 27 March

www.bebras.edu.au

digitalcareers

Australian Government Department of Communications

scan QR code for further details
WHAT IS COMPUTATIONAL THINKING?
Computational thinking enables us to analyse and develop solutions to complex problems and to then use technology to create or innovate new processes and solutions. Careers of the future will require these skills at every level. For example:

- **Managing resources** – understanding how to direct and use resources to maximise productivity
- **Analysis** – testing of complex systems, buildings and the like for safety before manufacture
- **Creativity** – finding new ways and techniques to express human experience
- **Safety** – understanding and applying technology to create safe environments

WHY IS COMPUTATIONAL THINKING IMPORTANT?
Computational thinking provides students with the skills to analyse a problem and facilitate solution development. Having computation skills enables students to have an understanding of techniques such as *decomposition, pattern recognition, abstraction and algorithms.* Correctly applying these techniques will help students to successfully use, design or innovate with technology.

WHAT DOES THE CHALLENGE LOOK LIKE
There are 15 questions per age group that become increasingly more difficult. Below is an example of an easy year 3 - 4 level Bebras question.

This example contains *pattern recognition* and *algorithm concepts.* Detecting the operation of an algorithm is sometimes required in informatics. In many fields of information technology, computer scientists observe traces of computer activity and check semantics (meaning) of programs.

**Ice Cream Machine**
This special ice cream machine creates cones with 4 scoops of ice cream. It does so in an ordered way. Here you see, from left to right, the last 3 ice creams that the machine has made.

**Which ice cream will the machine produce next?**

A  B  C  D

... In the picture you can see that red is followed by yellow, yellow is followed by blue...

Solution: A