

# BEBRAS Australia

Computational Thinking  
Challenge Handbook



digitalcareers

# Welcome to Bebras Australia

The Bebras Australia Computational Thinking Challenge, is an interactive way to teach students from grades 3-12 computational thinking and key employability skills such as collaboration and problem solving. Highlighting foundational skills such as pattern recognition and algorithms – the challenge is free to join and Australian curriculum-aligned.

Bebras Australia is an international student challenge run by CSIRO Digital Careers. The goal is to promote computational thinking to students in a way that highlights students' abilities beyond traditional science or maths skills. The challenge is available online, at no cost, twice a year in March and August-September for a two-week period.

## CSIRO Digital Careers

Digital Careers is part of CSIRO Education and Outreach and has three main aims:

- Increase awareness, interest and participation amongst school students in computational thinking and digital technologies
- Increase awareness of STEM career diversity and job opportunities
- Provide education and training for educators delivering digital technology curriculum & activities

[www.digitalcareers.csiro.au](http://www.digitalcareers.csiro.au)

Currently, the challenge uses the same set of questions in both rounds of the challenge, providing teachers with an opportunity to measure student learning by engaging in both rounds of the challenge.

The Bebras Challenge can be completed without any prior knowledge of computational thinking or digital technologies. Students can work independently or in groups of up to four.

Started in Lithuania in 2004 by Professor Valentina Dagiene from the University of Vilnius, Bebras is Lithuanian for *beaver!* The Bebras Challenge has now grown to 60 countries with over 1.6 million students participating worldwide!



**43 163**

Australian students participating in 2018



**642**

Australian schools participating in 2018



**1.6 million**

Students taking part worldwide

# Bebras Challenge Information

Made up of 15 questions, each ranging in difficulty, and broken into five Year groups (Years 3 & 4; Years 5 & 6; Years 7 & 8; Years 9 & 10; and Years 11 & 12) your students will have 45 minutes to complete the challenge with a little extra time given to the Years 3 & 4 students who have 60 minutes to complete the challenge.

At the end of the two week challenge period, all students from around Australia are graded. Teachers are able to download detailed information on how each student performed.

Personalised certificates are available to download as well as editable certificates for classes that used pseudonyms in the challenge.

Post challenge, students are able to log back on to see how they went in the challenge. Students can reattempt any questions they got wrong and receive immediate feedback on their answers.

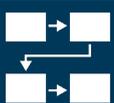
## What is Computational Thinking?

Using computational thinking doesn't mean thinking like a computer – it is a way of thinking that promotes problem-solving and can be used in every aspect of our lives. Computational thinking uses a number of skills, including:



### **Pattern Recognition**

Identifying patterns or similarities



### **Algorithms**

Precise sequence or instructions, or set of rules to perform a task



### **Decomposition**

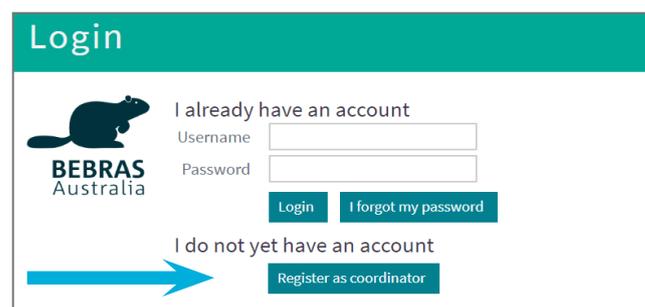
Breaking problems into parts, removing unnecessary or reorganising data

We use problem-solving in everything that we do and future jobs will require this skillset even more. Teaching computational thinking is not about how to use technology to solve the problem but rather how to understand problems and identify the tools needed to solve them.

# Setting up the Challenge

## Registration

- Visit [www.bebbras.edu.au](http://www.bebbras.edu.au).
- On the top, right of the page is the 'Teacher Registration/Log In' option, click on this.
- A new portal will open.
- Select the green button that says 'Register as coordinator'.



### Register (1/2)

Select a state

Enter a suburb

Find a school

- On the new page, select your state from the drop down menu.
- Then enter your school's suburb.
- If you begin typing your school name it should auto-populate.
- If not, enter your school's full name or 'Home School - surname/group' if applicable.
- Finally, click 'Next step'.

### Register (2/2)

School	Coordinators
School <input type="text" value="EcoSciences"/>	Name <input type="text"/>
City <input type="text" value="Dutton Park"/>	
State <input type="text" value="Queensland"/>	

#### Coordinator

Email \*

Username \*

Password \*

Password (check) \*

Firstname \*

Lastname \*

Gender

- The new page will require you to enter your details as a Coordinator.
- If you are a teacher, please **register using your school email** and **your school's full name**.
- When the information is complete, click 'Request registration'.
- A new screen will appear letting you know that your registration is awaiting approval.
- You will receive a confirmation email within 48 hours once your registration is approved.

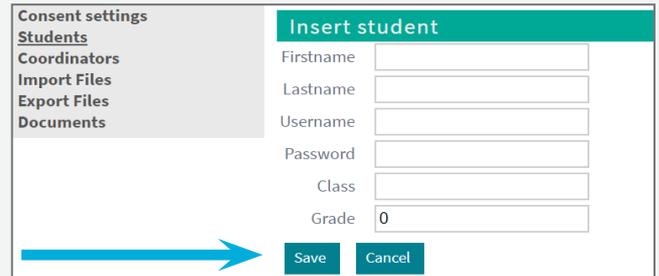
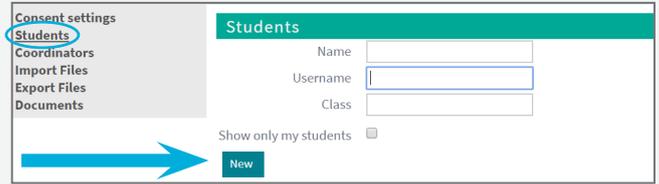
## Uploading Student Information

- Login as a Bebras Coordinator using your username and your selected password.
- Once you have logged in to the Bebras portal, select 'Consent settings' from the grey menu on the left.
- When you first sign in it will be the only menu option available and will have a red warning notification next to it.
- There you will find a copy of the Parental Consent form and the Bebras Terms & Conditions to download.
- To proceed with uploading student details you must accept the Terms & Conditions on behalf of your school and confirm that you have collected and retained Parental Consent forms (if not using pseudonyms).

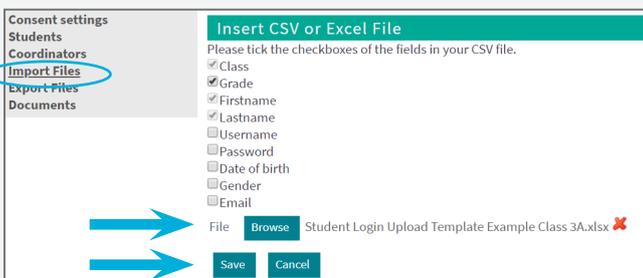
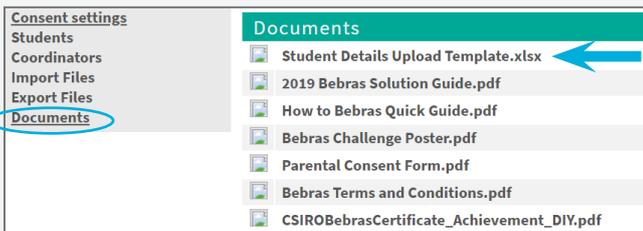


## Single Student Upload

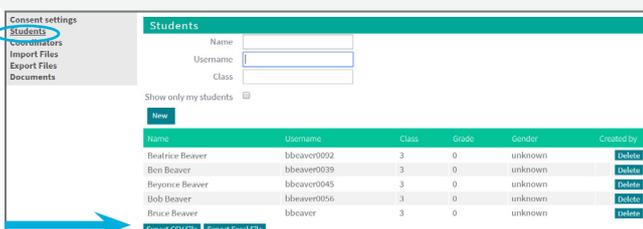
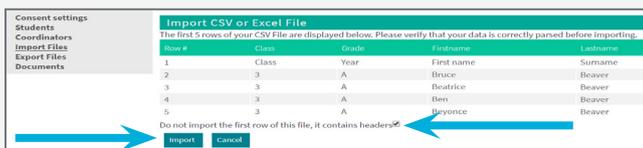
- Select 'Students' from the grey menu on the left hand side.
- Then click 'New' and complete the student's details.
- Click 'Save'.



## Multiple Student Upload



**Note:** Ignore the red cross - this is to delete the file if you make the wrong selection.



- Parental Consent forms must be retained by your school for 12 months.
- Bebras Australia only requires Parental Consent forms for Honour Roll recipients to be published on the Bebras website.
- Once you have selected 'Edit', checked both boxes, and clicked 'Save' you will be able to import student information.

- Select 'Documents' from the grey menu on the left.
- Download an Excel document called 'Student Details Upload Template.xlsx'.
- Enter students' details into this spreadsheet and save it to your computer (usernames and passwords will be auto-generated).
- Select the 'Import Files' tab from the grey menu.
- Click on the green 'Upload' button.
- This will take you to a new screen where you must tick all the boxes for the fields you have included in your spreadsheet.
- Use the 'Browse' button to select your completed student details spreadsheet saved on your computer.
- Then click the green 'Save' button.
- Your spreadsheet will appear with a green 'Import Now' button next to it.
- Select that button and ensure all of the student information that appears is correct.
- Then tick the box next to 'Do not import first row of this file, it contains headers'.
- Finally, click the green 'Import' button.

- A message will appear telling you the file has been imported.
- Select 'Students' from the menu on the left and all your students' details should appear.
- To access the auto-generated usernames and passwords for each student, download the student details as a spreadsheet by selecting the green 'Export Excel File' button at the bottom of the page.

# Pre Bebras Challenge Checklist

- Use Bebras 365 to ensure the challenge works on your school computers.
- Ensure your students have a valid Parental Consent form signed and returned to you.
- Talk to your students about time management and how much time they should spend on each question.
- Print out the Excel document with student logins and cut the document into slips so that you can hand these out to students.
- Ensure you have the full 45 minutes free (or 60 minutes for Years 3&4) students cannot complete the challenge in two sittings.
- Allow additional time for students to set up and log in. Have all students log in together but don't begin the challenge until everyone is ready.
- Our FAQ page has hints and tips but if you need any assistance, please contact [digitalcareers@csiro.au](mailto:digitalcareers@csiro.au)

# Post Bebras Challenge Checklist

- Once your students have completed the Bebras Challenge, sit back and relax.
- Over the final weekend of the Challenge all the questions will be graded.
- The following Monday you can log back in as a Coordinator and download your students' results and personalised certificates.
- The following Monday students can also log back on, see their results and re-attempt questions.
- With the challenge has now placed in 'Review Mode', students will receive immediate feedback on their selected answers.

# Downloading Results & Certificates

- Click into the 'Export Files' section where you can download spreadsheets of your class results or 'certificates for your students.
- For those students who used a pseudonym, please head to the 'Documents' section where you will find a blank DIY certificate for your use.

# Navigating the Bebras Portal

## **Consent Settings**

Where the Terms & Conditions and Parental Consent forms are located.

## **Students**

A list of students you have imported.

## **Coordinators**

Find a list of Coordinators at your school.

## **Import Files**

Where you can import your student details.

## **Export Files**

Where you can export student logins, results and certificates.

## **Documents**

Important documents for the Bebras Challenge.

As Australia's national science agency and innovation catalyst, CSIRO is solving the greatest challenges through innovative science and technology.

CSIRO. Unlocking a better future for everyone.

**Contact us**

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