

mathsBURST

mathsburst.com supports the rollout of MathsBURST program at your school. It's fully integrated tool for your teachers and students, accessible via any modern web browser on your school's existing tablets and laptops.

What follows is a walkthrough of our key features.

👁 Framework

📄 Lessons

📌 STEM Units

★ Challenges

👤 Students

📝 Assessment

🛠 Support



Conceptual Underpinnings of the Spatial Reasoning Intervention Framework

The practice of becoming spatial

Pedagogical Framework ELPSA

Experience

Language

Pictorial

Symbolic

Application

Student Focused Visualisation

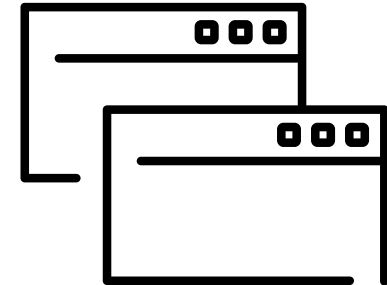
Visualise

Predict

Check

Practise features

Digital Resources



2 HTML-based digital challenges per year

Pedagogical Framework

Our learning activities are highly engaging, hands-on, experiences that move the students toward symbolic reasoning.

Experience

Evoke out-of-school experiences to build on understanding; provide physical resources

Language

reinforce and model mathematical terminology throughout; foster conversations that link experiences with language

Pictorial

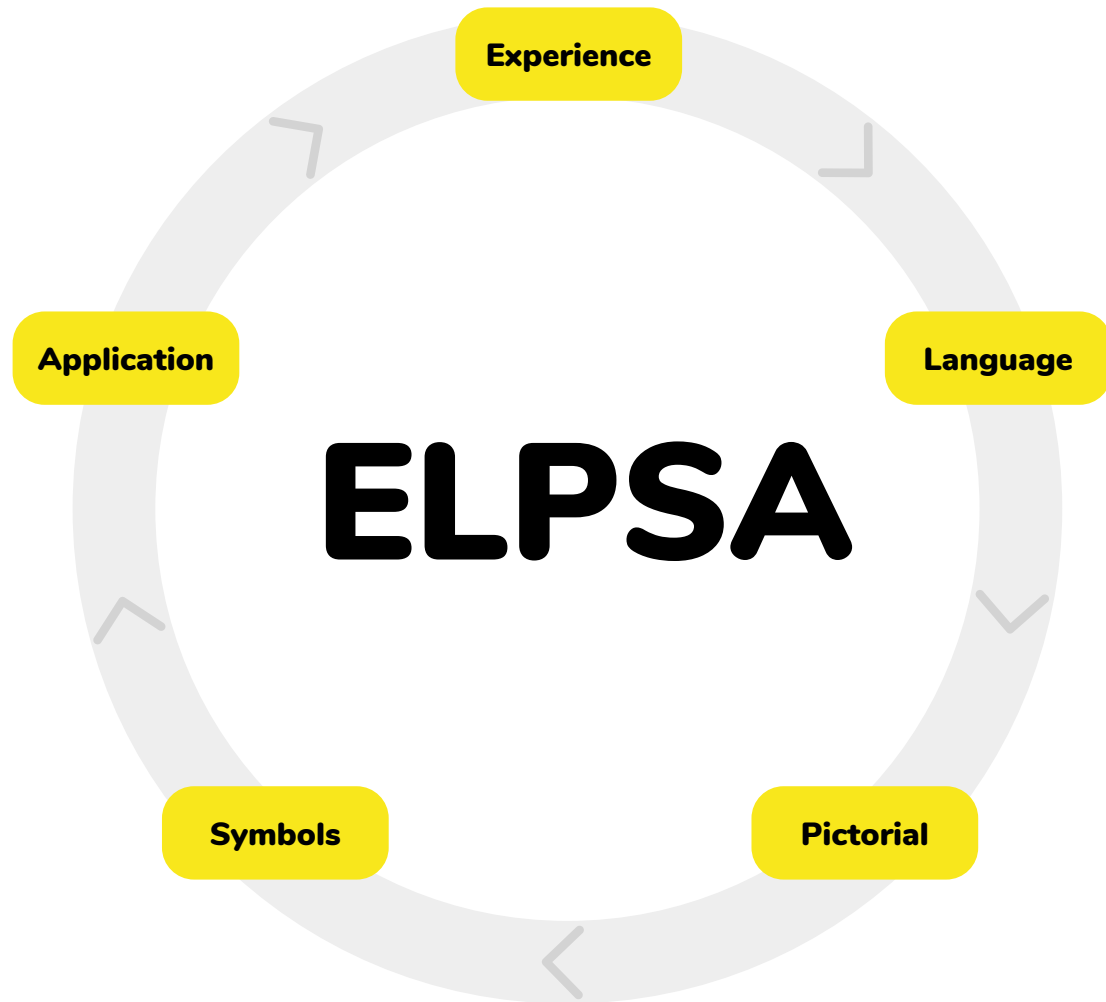
Concrete manipulatives, external pictorial representations and visualisation; ensure multiple representations (including non-prototypical)

Symbols

symbolic representations and expressions; model fluency and flexibility with efficient symbolic representations

Application

Apply symbolic reasoning to real-life problems and related mathematics concepts



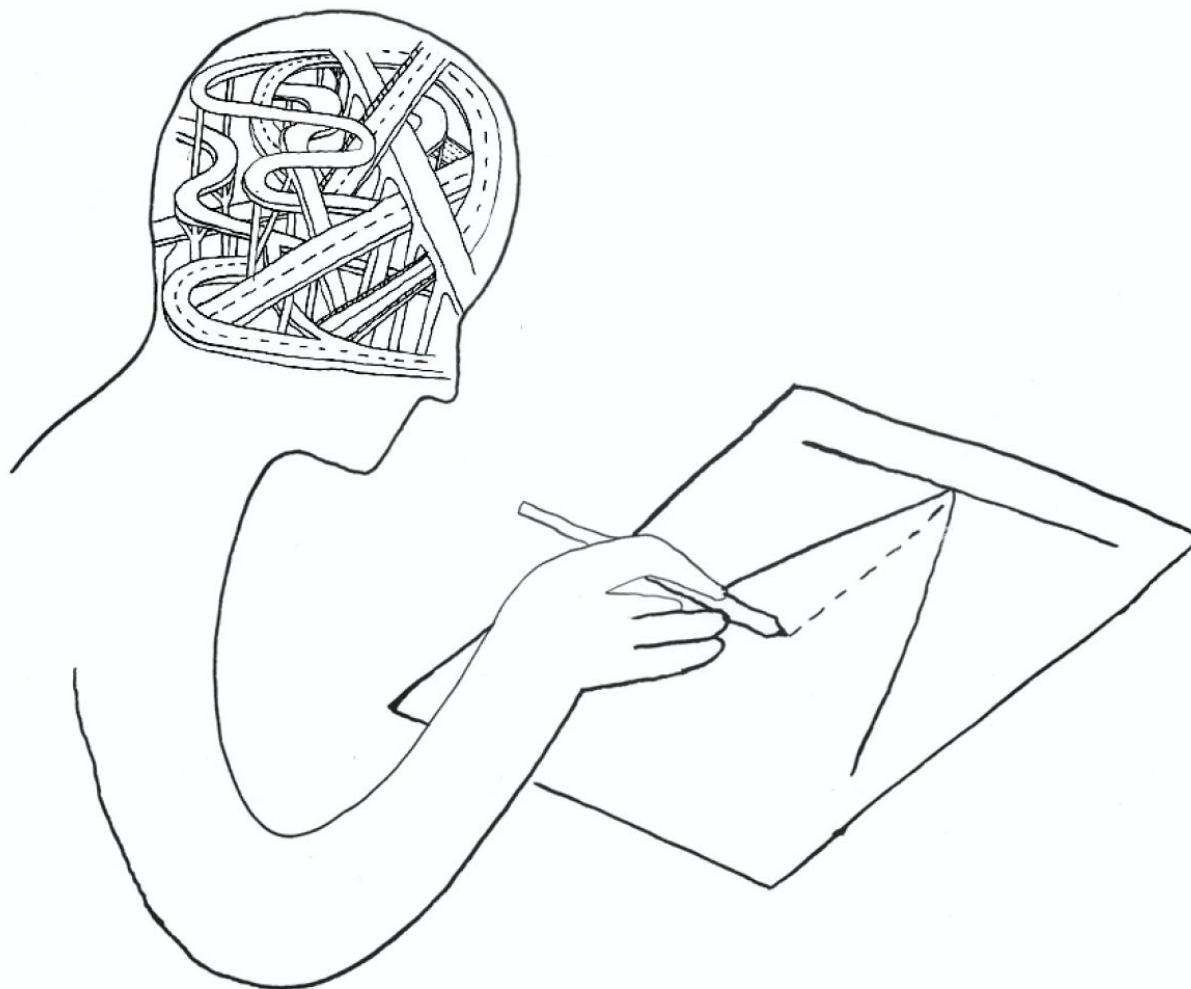
STEM Units

In Term 4 students undertake a STEM unit to apply knowledge gained in Terms 2 and 3 to life-like experiences.

One such unit assigns children with the task of being a STEM Practitioner associated with industrial design, namely expertise in packing construction.

Industrial designers create designs on the computer or on paper and then make prototypes to test the design to be considered for production. They must consider a product's functionality, safety, and appearance as part of the decision to produce the product. They also analyse the cost of production and materials and work with other specialists to determine if the designed product is reasonable to manufacture.

To some degree, industrial design is applied art—which is why spatial visualisation skills are so important to this type of STEM Practice.



Lessons

The detailed lessons are designed within the ELPSA pedagogical framework.

When Teachers visit mathsburst.com, they'll see their next lesson plan and all of the lessons' activities. Each lessons and activity can be marked as completed, to help teachers and schools keep track of the MathsBURST rollout.

All relevant Professional Learning is presented inline with the teaching content, to make sure teachers are well supported and able to draw on the program's VPC and ELSPA frameworks.

Resources for the lessons can be downloaded in a single click, in printable formats. The lesson plans themselves can be downloaded for teachers to review offline.

Curriculum is clearly outlined against the lesson content to help Teachers document outcomes.

Excellent Activites

Our activites are well designed and easy to review.

Printable Lessons

Lessons can be printed off for annotations and offline access.

The screenshot shows the 'Lessons' page in the mathsBURST interface. At the top, there are navigation links for 'Lessons', 'Challenges', and 'Students', along with a user profile for 'Maths 4'. Below this is a sub-header for 'TERM 2 – Grade 4 – #2 Line or Reflective Symmetry – A'. The main content area lists three lessons: '01 – What do we know about symmetry?', '02 – Create a Design', and '03 – Completing a Symmetry Design'. Lesson 03 is expanded to show a 'Class Activity' with five numbered steps. To the right of the activity is an 'Actions' box with a 'Activity Delivered' button. On the far right, there is a 'Lesson Actions' panel with buttons for 'Lesson Delivered', 'Print Lesson', and 'Download all resources'. Below this are sections for 'Lesson Activities and Curriculum' with links to 'See Lesson Activities', 'Australian Curriculum Achievement Standards', and 'View Professional Learning'.

See Progress

Teachers can mark off lessons and activies as delivered.

Learning Outcomes

Relevant outcomes are presented with the lesson.

Clear outline for teachers

Our lesson plans are easy to access and presented in sequence.

The screenshot displays the 'Outline of Lessons for Term 2' interface. The central panel lists 10 lessons, each with a number, a checkmark icon, a title, and a right-pointing arrow icon. The lessons are:

- 1. Pre-test for (1) spatial reasoning and (2) maths
- 02. Line or reflective symmetry—A
- 03. Line or reflective symmetry—A
- 04. Reflection Challenge
- 05. Line or reflective symmetry—B
- 06. Line or reflective symmetry—B
- 07. Reflection Challenge
- 08. Paper folding and cutting
- 09. Tangrams
- 10. Tangrams

The left sidebar contains the 'mathsBURST' logo, a 'Review Next Lesson' button, and 'Previous Lesson' and 'Next Lesson' buttons. Below these are three lesson sections: '01 - What c...', '02 - Create...', and '03 - Comple...'. The 'Class Activity' section for lesson 03 is visible, listing five steps.

The right sidebar shows the user profile 'Maths 4', a 'Next Lesson' button, and a 'Lesson Actions' section with buttons for 'Lesson Delivered', 'Print Lesson', and 'Download all resources'. Below this is the 'Lesson Activities and Curriculum' section, including 'See Lesson Activities', 'Australian Curriculum Achievement Standards', and 'View Professional Learning'.

[Review Next Lesson](#)[See Lesson Overview](#)[Download Assets](#)[Previous Lesson](#)

TERM 2 – Grade 4 – #2 Line or Reflective Symmetry – A

[Next Lesson](#)

Achievement Standard

Achievement Standards—Mathematics for Reflection lessons Y4.

Students explain the effects of one-step transformations.
Students identify symmetry in the environment.
Students create symmetrical shapes and patterns.
Students describe transformations of two-dimensional shapes and identify line symmetry.
Students describe combinations of transformations.

Achievement Standards—Mathematics for STEM UNIT Y4.

Students recognise the features of three-dimensional objects.
Students explain the effects of one-step transformations.
They draw two-dimensional shapes.
Students identify symmetry in the environment.
Students make models of three-dimensional objects.
Students compare areas of regular and irregular shapes using informal units.
Students create symmetrical shapes and patterns.
Students connect three-dimensional objects with their two-dimensional representations.
Students describe transformations of two-dimensional shapes and identify line symmetry.
Students describe combinations of transformations.
Students construct simple prisms and pyramids.
Students describe different views of three-dimensional objects.

Achievement Standards—Science for STEM UNIT Y4.

Lesson Actions

[Lesson Delivered](#)[Print Lesson](#)[Download all resources](#)

Lesson Activities and Curriculum

[See Lesson Activities](#)

Review this lessons' material

[Australian Curriculum Achievement Standards](#)

Review the standards for this lesson

[View Professional Learning](#)

Watch our vignettes for this area

★ Challenges

Students enjoy our challenges because they are engaging to play, while providing scaffolded mastery.

In terms 2 and 3 teachers have access to 10 graded challenge levels that pair with the term's program. Teachers have flexibility on when they use the challenges in the classroom. Each challenge level can be played in 10 mins, on a touchscreen or with a keyboard and mouse.

Teachers can easily review progress across the class, and also review individual student progress. Teachers can also review their student's responses for any given Challenge item.

Students love our challenges because they're simple to play, and quickly become rewarding to master. All of our challenges feature clear animated responses for when students get an incorrect answer. Students who struggle at a Challenge level are encouraged during the challenge to seek teacher assistance.

Real-time oversight

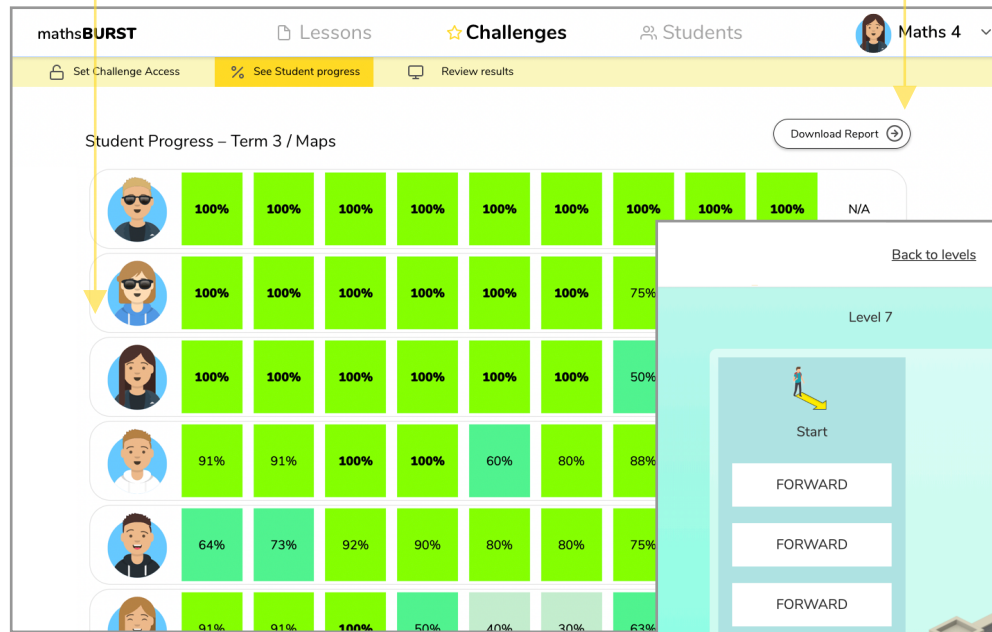
Teachers can see their student's mastery of each challenge level.

Download your reports

Class reports are easy to download for record keeping.

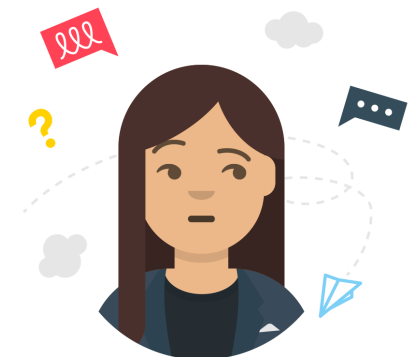
Fun and engaging

Our Challenges are highly interactive, with animated results.



Clear Feedback

A student's avatar animates to reflect their progress in the Challenges, encouraging engagement and self-reflection.



Students

Enrolling Students in the mathsBurst program is quick and simple.

Once a teacher has been enrolled in mathsBURST they can create classes and enroll their students in their class. We need a student's first name, last name and email address to enroll a student. This can be provided via a spreadsheet.

Teachers can then download printable mathsBURST passes for their students to use when logging in.

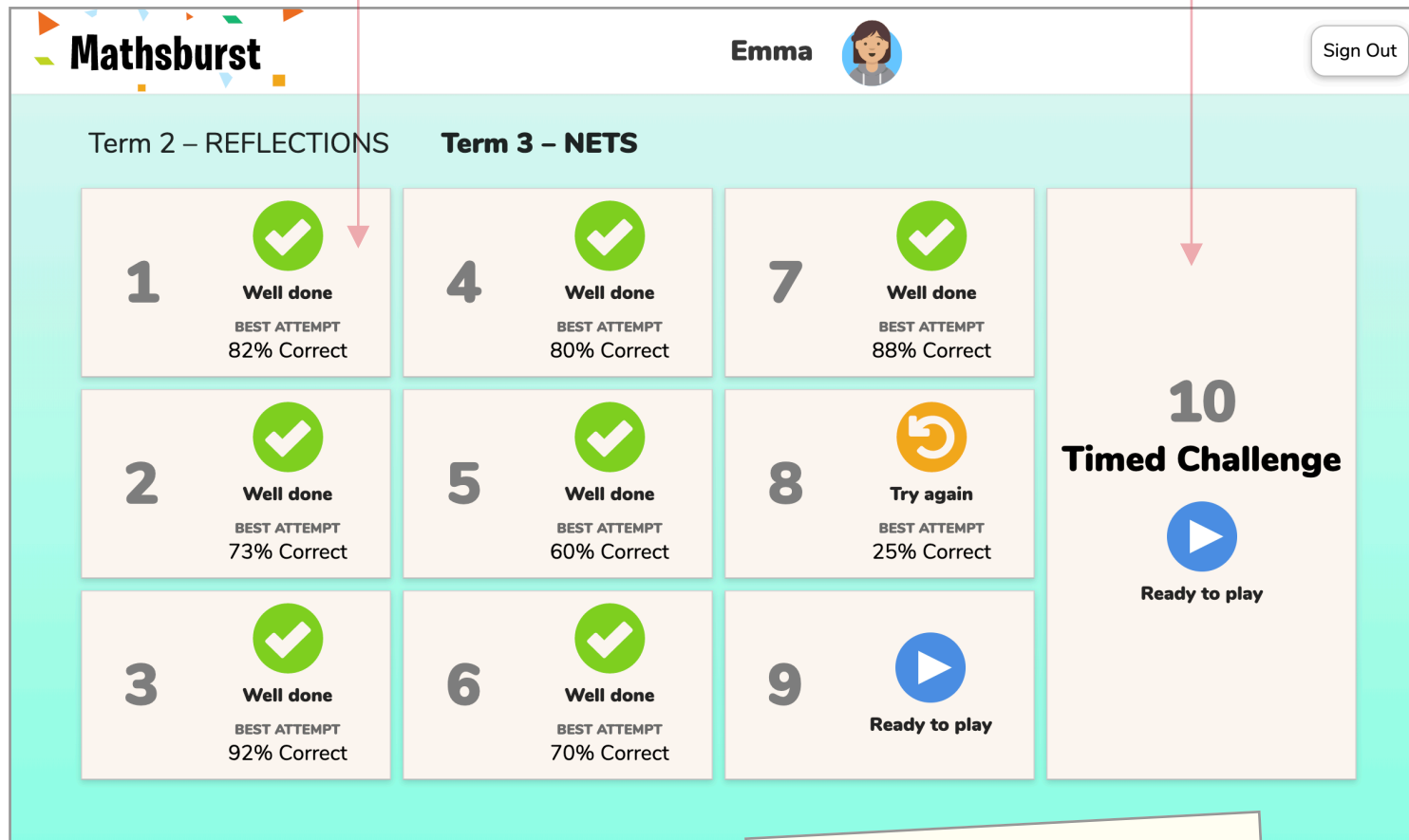
When Students login, they have access to all open Challenge levels, as set by the Teacher. Students can see their best previous attempt at a challenge level. If there's a Assessment under way, then they'll be invited to undertake it. Students can easily log out, which is important if they're sharing devices within the classroom.

Have another go

Students are encouraged to demonstrate their mastery over time, with options to reinforce understanding.

Timed Challenges

Level 10 provides a timed challenge against a selection of previous levels.



Mathsburst Emma Sign Out

Term 2 – REFLECTIONS	Term 3 – NETS	
1 Well done BEST ATTEMPT 82% Correct	4 Well done BEST ATTEMPT 80% Correct	7 Well done BEST ATTEMPT 88% Correct
2 Well done BEST ATTEMPT 73% Correct	5 Well done BEST ATTEMPT 60% Correct	8 Try again BEST ATTEMPT 25% Correct
3 Well done BEST ATTEMPT 92% Correct	6 Well done BEST ATTEMPT 70% Correct	9 Ready to play
		10 Timed Challenge Ready to play

Simple Sign In

Our printable mathsBURST passes make it easy for students to access the site.



Emma Smith

Sign in at mathsburst.com

Email : jennysmith@school.edu.au

Your Passcode : **1 2 3 4**

Assessment

The online assessment tools have been psychometrically validated.

When your school commences the MathsBURST program we're able to baseline your student's numeracy and visual spatial ability through an online standardised test.

Towards the end of the program Students are again invited to complete the test. These test results, and previous controlled studies provide you with the context you need to evaluate student's improvement.

Our tool saves students answers in realtime and offers a robust experience, as even when students exit the test, they can resume progress when they next login.

Support

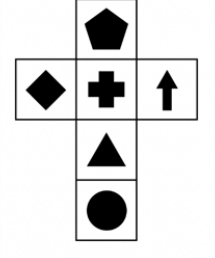
Teachers can contact our support team via phone, email or web chat. We also have video walk throughs for key features, and provided training for the website during our professional development sessions.

Timed Test


Students have a time limit for each section and will be locked out when it has elapsed.


Review 59 mins left 3 / 16 questions 0 questions skipped

This is the net of a cube.




Which shape belongs on the grey surface of the folded cube?







1




2



3



4



5

Previous question Question 3 - unanswered Skip question