



The new Cuddegong Road Station under construction.

# METRO MINDS **STEAM** **Challenge**

Years 9 and 10, your Metro Minds journey starts here.



step 1

## Team work



First railway tracks being laid.

Form a team to solve a real challenge or opportunity that Sydney Metro may face as it revolutionises how Sydneysiders travel.

Some team members may have more than one job.

### Project manager

#### The organiser

Manages the team, coordinates creation of a plan and ensures actions are completed on time.

### Research and development manager

#### The informer

Responsible for research and product/solution development.

### Creative and design manager

#### The artistic director

Responsible for creative presentation and video pitch production.

### Production manager

#### The inventor

Responsible for prototype development.

### Quality assurance manager

#### The questioner

Responsible for quality control and testing.

### Project administration manager

#### The wordsmith

Responsible for quality documentation, information flow, photographs and finalising the concept brief.

step 2

## Innovate



Research your own innovation or choose one of the following:

- » Metro trains
- » Engineering and construction
- » Heritage
- » Integrated transport
- » Safety
- » Environment and sustainability
- » Stations
- » Passenger access
- » New technologies
- » Customer needs and engagement
- » Future transport
- » Connecting communities.



step 3

# Design thinking



Use the design thinking process to develop your innovation and prototype

## Empathise

**Put yourself in someone else's shoes**

1. Find out more about Sydney Metro by visiting [sydneymetro.info](http://sydneymetro.info).
2. Look, listen and learn – think about your customer.

## Define

**Take what you have learnt and put it into words**

1. Discuss your research and observations.
2. Write an issues statement- this will be what your team will address/solve with your innovation.

## Ideate

**Ideate with your team – it's time to come up with ideas**

1. Brainstorm as many ideas as possible for an innovation that solves your identified problem.
2. Be original: try to select an innovative idea that doesn't already exist and is realistic.

## Prototype

**Get hands-on**

1. Create a prototype, this can be a physical model, computer design or an artist's impression.
2. Keep it simple: create an inexpensive scaled-down model of your innovation.

## Test

**See if your idea works**

1. Hand the prototype over to a new user to see how they interact with it – show, don't tell.
2. You may have to create multiple prototype versions and scenarios before you get it right.

To get more tips on design thinking, go to [sydneymetro.info/education](http://sydneymetro.info/education).





step 4

## Pitch with punch



We want to see your team and your innovation. Create a video to pitch us your idea. It could look like this, it's up to you.

### Introduction

- » Introduce your team members – say hi!
- » What did your team do?

### The challenge or opportunity

Explain the challenge or opportunity addressed: know your 'problem' statement.

### Innovation

Present your idea and prototype, tell us how your idea has been developed, designed and tested.

### Fit

Tell us how your innovative idea fits the Metro Minds STEAM Challenge brief. Could it be realistically implemented?

### Community value

Are you an exemplary local citizen? Of course you are! Tell us the ways that your innovation will contribute to and serve the local community.

**Your video pitch should be informative, interesting and engaging for the audience. Here are a few helpful hints for a successful pitch:**

- » Know your content.
- » Involve all team members.
- » Understand your audience.
- » Keep it simple.
- » Use visuals to support your pitch.
- » Be confident and speak clearly and expressively.

step 5

## Prize



Teams and their support crew will be chosen to attend the finalist event, for their chance to pitch to our judges to win.

### Finalists

- » \$600 prize for the team
- » \$300 prize for the coordinating teacher
- » \$300 prize for the school

### Winner

- » \$1500 prize for the team
- » \$500 prize for the coordinating teacher
- » \$500 prize for the school

### Submissions due:

**22 June 2018**

### Finalists announced:

**2 July 2018**

### Finalist event:

**9 August 2018**

step 6

Send 



Artist's impression of Sydney's new Metro train.



Your Metro Minds STEAM coordinating teacher will be responsible for uploading your entry, however, before he or she uploads, ensure your team has:

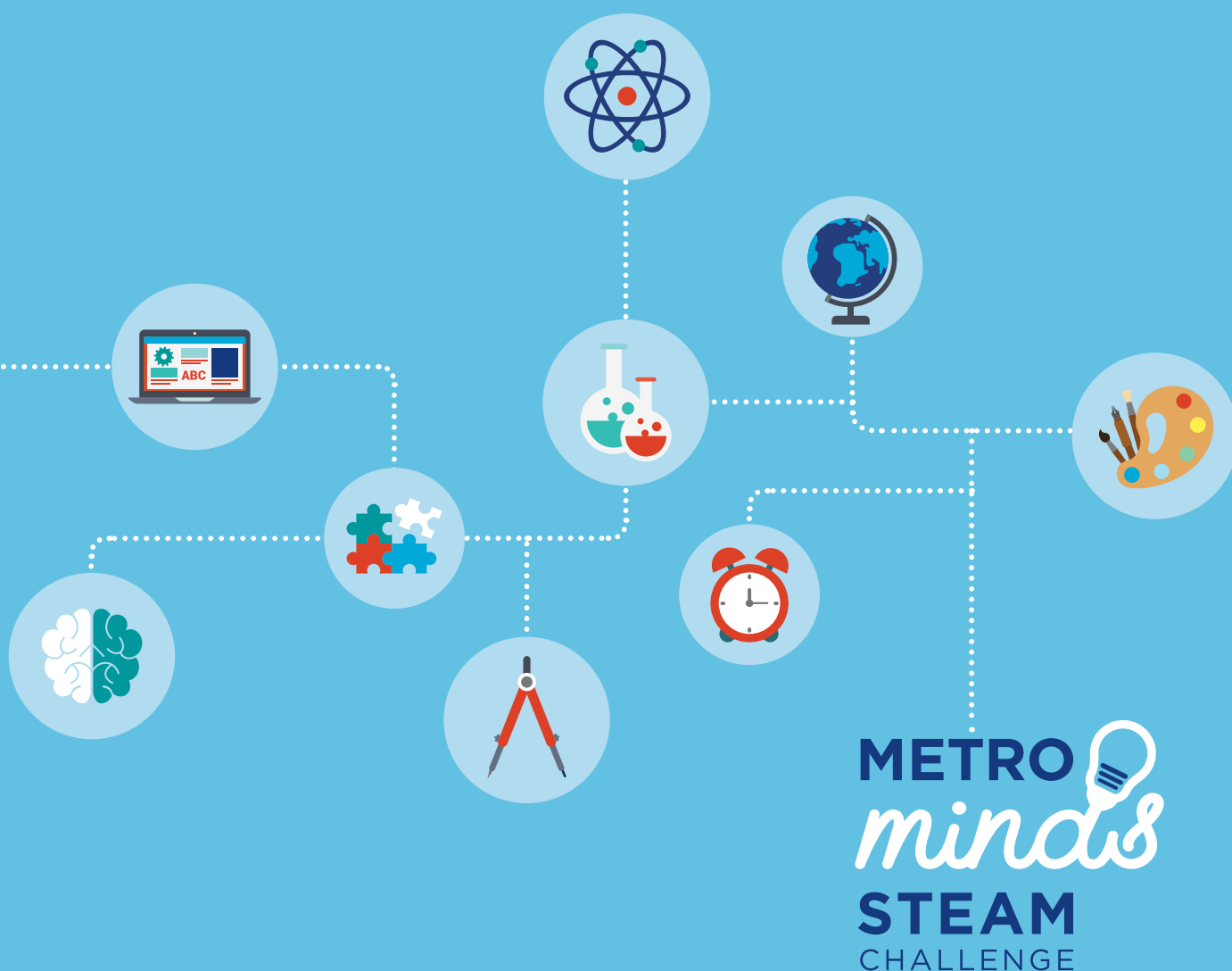
1. Checked carefully your concept brief outlining your team's design thinking process. Remember no more than 500 words. This can be submitted as a PDF or Word document.
2. Edited and previewed your video pitch to ensure your team has completed all of the challenge's components.
3. Submitted video entries via Vimeo.

**Don't forget, submissions close online at 11.59pm (AEST) on 22 June 2018.**

## Checklist



- |   |   |
|---|---|
| <input type="checkbox"/> Get your team of four to six students and allocate real jobs. Go on, give your team a name                   | <input type="checkbox"/> Develop your prototype and test – hit repeat if you need to  |
| <input type="checkbox"/> Is it ok? Has your parent or legal guardian given you permission to enter the Metro Minds STEAM Challenge?   | <input type="checkbox"/> Plan and create a visual presentation to tell us your pitch  |
| <input type="checkbox"/> Check your coordinating teacher has registered your team   | <input type="checkbox"/> Film your video pitch (of up to five minutes) featuring all team members   |
| <input type="checkbox"/> Read through the challenge criteria on our website   | <input type="checkbox"/> Complete a concept brief (of up to 500 words) outlining your design thinking process   |
| <input type="checkbox"/> Research the Sydney Metro project and decide on your challenge theme   | <input type="checkbox"/> Check that your document and video pitch meet requirements   |
| <input type="checkbox"/> Establish your solution by following the first three stages of design thinking; empathise, define and ideate | <input type="checkbox"/> Ask your coordinating teacher to submit your concept brief and pitch presentation on the Metro Minds website by 22 June 2018 |



## Teacher stuff

The Metro Minds STEAM Challenge is a NSW Education Authority (NESA) curriculum linked, project based learning experience based on a real world project of national significance. It is relevant across multiple curriculum areas (including Science, Technology, Engineering, Arts and Mathematics) and supports 21st century learning. The competition is part of Sydney Metro's education program *FastTracking the Future*.

Teams entering the competition must have a teacher who acts as the coordinating teacher. The coordinating teacher is responsible for coordinating teams, organising parental permission and registrations and uploading team submissions to the Metro Minds website by 22 June 2018. They can also win some great prizes!

## Curriculum links

- » English
- » Mathematics
- » Science
- » Geography
- » Design and Technology
- » Industrial Technology
- » Visual Arts
- » Commerce

Find more information, including curriculum links, content descriptors and terms and conditions at [sydneymetro.info/education/schoolcompetitions/](http://sydneymetro.info/education/schoolcompetitions/)