

# Sydney Metro Inquiry Based Unit: Early Stage 1

## Syllabus Links



Curriculum Area	Outcomes	Skills	General capabilities and cross-curriculum priorities
Geography	<b>GEe-1:</b> identifies places and develops an understanding of the importance of places to people	<p>Investigate the importance of places they live in and belong to, for example:</p> <ul style="list-style-type: none"> <li>identification of places they live in and belong to</li> <li>discussion of why places are special and how people care for them</li> <li>explanation of why people need to take care of places</li> </ul> <p>Investigate the Country/Places important to Aboriginal or Torres Strait Islander Peoples, for example:</p> <ul style="list-style-type: none"> <li>identification of an Aboriginal or Torres Strait Islander site, Country or Place</li> <li>discussion of why the site, Country or Place is important</li> </ul> <p>Investigate how the location of places can be represented, for example:</p> <ul style="list-style-type: none"> <li>location of familiar and local places on maps</li> <li>description of the location of places</li> </ul>	<p><b>Asia and Australia's engagement with Asia</b></p> <p>Sustainability</p> <p>Literacy</p> <p>Numeracy</p> <p>Information and communication technology capability</p>
History	<b>HTe-1:</b> communicates stories of their own family heritage and the heritage of others	<ul style="list-style-type: none"> <li>Pose questions about another's object or photograph</li> <li>Discuss <i>then</i> and <i>now</i>; <i>past</i> and <i>present</i></li> </ul>	Civics and citizenship
Science	<b>STe-4MW-ST:</b> identifies that objects are made of materials that have observable properties	<ul style="list-style-type: none"> <li>Identify and describe how the properties of different materials suit their design purpose</li> <li>Plan, design and evaluate a product considering an identified need or opportunity</li> <li>Observe and describe some properties of a range of materials</li> <li>Explore the use of materials in the built environment based on their properties</li> </ul>	


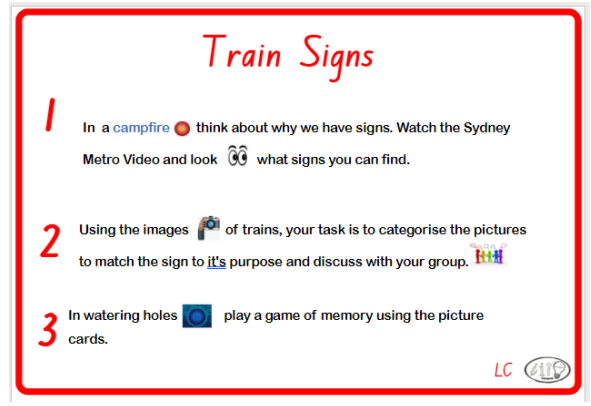
## Key Inquiry Question:

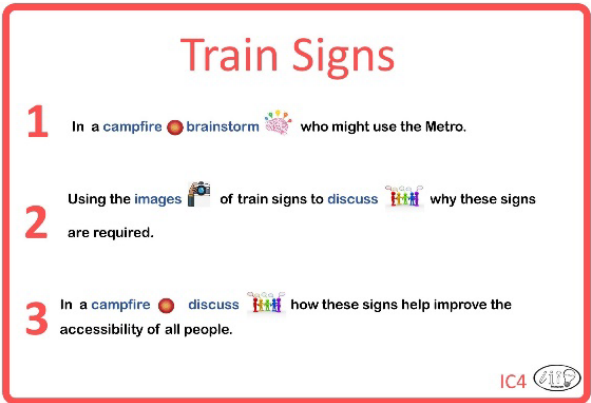
How do transport networks from the past and around the world impact and shape my future with the Sydney Metro infrastructure?

# Teaching, learning and Assessment

Teaching and Learning Experiences	Resources and Technology
<p>'Hook' students into learning about the Sydney Metro by informing them, that they have receive a letter from Sydney Metro. As a class – read the letter out loud and discuss.</p> <p>Provide opportunities for students to experience the following Learning Centres:</p> <ol style="list-style-type: none"> <li>1. Trains – Past and Present</li> <li>2. Trains – NSW Trains, and Sydney Metro Trains</li> <li>3. Train Stations vs Metro Stations</li> <li>4. Metro Signage – Stations</li> <li>5. Metro Signage – Accessibility</li> <li>6. Metro Signage – Safety</li> <li>7. Metro Stations – What are they?</li> <li>8. Metro Stations – Features of a Metro Station</li> <li>9. Metro Stations – How to get to a Metro Station</li> <li>10. Maps – What are maps?</li> <li>11. Maps – Birds Eye View and Maps – Floor Plans</li> <li>12. Maps – Train line Maps</li> </ol>	<p>Letter from Sydney Metro (sample included at the end of the unit)</p> <p>As applicable in the Learning Centre experiences below</p>
<p>Provide opportunities for students to experience/engage with the following Immersion Centres:</p> <ol style="list-style-type: none"> <li>1. All things trains</li> <li>2. What I already know about trains</li> <li>3. Predictions for Future Sydney Metro</li> <li>4. Wonderings/Reflections</li> <li>5. Why do we need a station?</li> <li>6. Role Play – Staying Safe</li> <li>7. Create you own train</li> <li>8. Predictions for Future Sydney Metro</li> <li>9. Debating</li> </ol>	<p>As applicable in the Immersion Centre experiences below</p>

Learning Centre	Learning Experience	Student Task Card
Learning Centre 1	<p><b>Trains - Past and Present</b></p> <p><b>LI:</b> I am learning about trains from the past and present.</p> <p><b>SC:</b> I can</p> <ul style="list-style-type: none"> <li>Identify the difference and similarities of past and present change</li> <li>Write a sentence about what train I like better.</li> </ul> <p>Instructions:</p> <ol style="list-style-type: none"> <li>Provide students with photographs of trains from the past and current trains that are in service. Discuss what the similarities and differences are between them? What do you notice?</li> <li>Make a Venn Diagram using hula hoops and sort photographs.</li> <li>In workbooks, write a sentence about which trains you like better. Sentence starters could be <ul style="list-style-type: none"> <li>'I like the old trains better because....'</li> <li>'I like the new trains better because...'</li> </ul> </li> </ol>	
Learning Centre 2	<p><b>Trains - NSW Trains, and Sydney Metro Trains</b></p> <p><b>LI;</b> I am learning to identify how trains have changed.</p> <p><b>SC;</b> I can</p> <ul style="list-style-type: none"> <li>Notice the changes of the train</li> <li>Voice some differences between Sydney trains and metro trains</li> <li>Draw a picture of a Sydney train and a metro train</li> </ul> <p>Instructions;</p> <ol style="list-style-type: none"> <li>Watch video of <a href="#">sydney train evolution</a></li> <li>Collaboratively discuss the difference from the beginning to the end. ( colour, size, windows, doors)</li> <li>Students to sketch a Sydney train and a metro train to show the difference between the trains.</li> </ol>	

<p>Learning Centre 3</p>	<p><b>Train Stations vs Metro Stations</b></p> <p>LI: I am learning about Sydney train stations and Metro stations  SC: I can</p> <ul style="list-style-type: none"> <li>Identify features of a Sydney train station</li> <li>Identify features of a Metro station</li> <li>Notice the similarities and differences between both stations</li> </ul> <p>Instructions:</p> <ol style="list-style-type: none"> <li>Watch the videos below with a tour of a Metro station and Central train station in Sydney. <ul style="list-style-type: none"> <li><a href="#">Metro Stations</a></li> <li><a href="#">Central Train Station</a></li> </ul> </li> <li>Provide students with pictures of Sydney Trains Stations and Metro Trains Stations (Screenshots from the videos above). Get students to sort the screenshots from the videos under the headings 'Metro' and 'Train' stations.</li> <li>Discuss what they notice and what they wonder about the stations. What might be the advantages and disadvantages of the different features? What might the dream station look like?</li> </ol>	
<p>Learning Centre 4</p>	<p><b>Metro Signage - Stations</b></p> <p>LI: I am learning to identify what signs at Sydney Metro stations mean and how they can help people to move around the station.  SC: I can identify signs that I might see in the Sydney Metro or its stations and explain what they mean.</p> <ul style="list-style-type: none"> <li>Collaboratively discuss why we have signs in everyday life.</li> <li>Think about what kind of signs we might see at the station e.g. Exit sign, station name, toilets.</li> <li>Watch the Sydney Metro Northwest and make a list as a class of all the signs that you found.</li> </ul> <p><a href="#">Trains on the Sydney Metro Northwest - Australia's First Metro Line (Opening Day)</a></p>	

	<p><b>Activity:</b></p> <ul style="list-style-type: none"> <li>• In small groups, students play a game of memory.</li> <li>• Students need to match the station sign picture to its purpose/who it helps.</li> <li>• Individually, students can choose their favourite type of station sign and create their own design that we could use in our Jordan Springs Metro.</li> </ul> <p><b>Reflection:</b></p> <ul style="list-style-type: none"> <li>• What did we learn about the purpose of signs when using the Sydney Metro?</li> <li>• Who do we think the signs help?</li> <li>• How could we improve the useability of these signs? E.g. People who are blind.</li> </ul>	
Learning Centre 5	<p><b>Metro Signage - Accessibility Mel</b></p> <p><b>LI:</b> I am learning to identify what signs at Sydney Metro stations mean and how they can help people.</p> <p><b>SC:</b> I can identify accessibility signs that I might see in the Sydney Metro or its stations.</p> <ol style="list-style-type: none"> <li>1. Brainstorm who might use the Sydney Metro.</li> <li>2. Watch the video linked below.</li> <li>3. Discuss how this signage makes the Sydney Metro more accessible to all.</li> </ol> <p>Watch a video to support the lesson - accessibility is towards the end of the video.</p> <p><a href="#">Sydney Metro: FastTracking the Future education program an introduction for primary school students</a></p>	
Learning Centre 6	<p><b>Metro Signage - Safety</b></p> <p><b>LI:</b> I am learning to identify the different safety signs at Sydney Metro stations and how they can help people.</p> <p><b>SC:</b> I can identify safety signs that I might see in the Sydney Metro or its stations.</p> <p>Watch previous video to support this task:</p>	

1. Brainstorm hazards that can occur at Metro Stations
2. Watch the video: [Trains on the Sydney Metro Northwest - Australia's First Metro Line \(Opening Day\)](#)
3. Print and look at the images and discuss what these signs mean and how they can keep us safe
4. Scenario examples:
  - Emergency call sign - Where can we go to ask for help?
  - Emergency exit signs - What type of situation would require us to use the emergency exit signs? What do we need to do?
  - Fire extinguisher sign

### Metro Safety Signs

- 1 In a **campfire**  brainstorm hazards at Metro Stations. Watch the Sydney Metro Video and look  what signs might be used to keep us safe.
- 2 Using the images  of Metro signs and your observations from the video, discuss what these signs mean and how they can keep us safe.
- 3 In watering holes  act out scenarios using the Metro safety signs to show how they keep us safe.

LC 

Learning  
Centre 7

### Metro Stations - What are they?

Learning Intention: I am learning to observe and identify features of the Sydney Metro Stations which are the same.

Success Criteria:

- I can discuss the elements that make up a metro stations e.g. Entrances, escalators, signage
- I can identify similarities in the Sydney Metro stations

1. Watch the following video as a class:










### Designing Sydney Metro's new stations


2. Discuss what are some features they noticed in the train station.
3. Introduce the learning centre, go through the task card and explain to students the expectation of the task.




Activity:


Students view images of various Sydney Metro Stations and identify and circle features that are the same.

### What is a Metro Station

- 1 In a watering hole  look  at the different Sydney Metro  stations and circle all the features that are the same.
- 2 Scan the QR Code with an iPad  to explore the 360 Degree tour of a Sydney Metro  Station.
- 3 Draw a picture  of the front of your Jordan Springs Metro  Station. Think about the following:  signage  the environment

LC7 

	<p>Students then use the 360 Degree tour of a Sydney Metro station. Students draw a picture of what Jordan Springs Metro Station including aspects such as signage and the environment.</p> <p>Reflection:</p> <ul style="list-style-type: none"> <li>• What features of the Metro Stations were the same?</li> <li>• Why do you think the architects kept some features the same?</li> </ul> <p>Resources:</p> <ul style="list-style-type: none"> <li>• <a href="#">Station Pictures</a></li> <li>• 360 degree tour</li> <li>• A4/A3 paper</li> <li>• Pencils</li> </ul>	
Learning Centre 8	<p><b>Metro Stations - Features of a Metro station</b></p> <p>Learning Intention: I am learning to identify features that can be found in a Sydney Metro Station.</p> <p>Success Criteria:</p> <ul style="list-style-type: none"> <li>• I can identify features of a Metro Station</li> <li>• I can discuss the purpose of the various features of a Metro Station</li> </ul> <ol style="list-style-type: none"> <li>1. Watch video as a class: <a href="#">Designing Sydney Metro's new stations</a></li> <li>2. Brainstorm the different features that students identified in the video - teacher may point out features that students may have missed.</li> <li>3. Introduce the learning centre, go through the task card and explain to students the expectation of the task.</li> </ol> <p>Activity:</p> <p>Students watch the Sydney Metro Stations video and think about the different features that can be seen. Students create a mind map of the features using the visuals and come up with reasons they believe those features are needed.</p>	<div> <h3>What is in a Metro Station</h3> <p>1 In a Campfire 🔥, watch the Sydney Metro  Stations video 📺. Think 🧠 about the different features that can be seen.</p> <p>2 Create a mind map of the features using the visuals and list 📝 the reasons why they are needed at a Metro Station.</p> <p>3 In watering holes 💧, discuss the features of a Sydney Metro  Stations and decide how many of each would be needed at a new station.</p> <p>LC8 </p> </div>

	<p>In small groups, students think about the new Jordan Springs Station and consider what features of the train station are required and how many of each would be needed at the new station.</p>	
<p>Learning Centre 9</p>	<p><b>Metro Stations - How to get to a Metro Station</b></p> <p>Learning Intention: I am learning to identify the different modes of transportation that people could use to utilise the Sydney Metro Station.</p> <p>Success Criteria:</p> <ul style="list-style-type: none"> <li>I can identify different modes of transportation</li> </ul> <ol style="list-style-type: none"> <li>Watch the video of the different modes of transport <a href="#">Mode of transport for kids</a>    <a href="#">types of transportation</a>    <a href="#">Transportation video for kids</a></li> </ol> <p>Discuss whether all the modes of transportation would be suitable to get to a train station in Jordan Springs.</p> <ol style="list-style-type: none"> <li>Look at the poster and brainstorm appropriate modes of transportation that will need to be considered when building a new metro station. Discuss what may be needed to enable that mode of transportation e.g. Bike - bike racks, bus - bus stops, cars and motorbikes - parking spaces</li> <li>Introduce the learning centre, go through the task card and explain to students the expectation of the task.</li> </ol> <p>Activity:</p> <p>As a class, think and make a list of ways people could get to the Sydney Metro Station to use the train. Then, look at the Sydney Metro plan and circle all the features that help people arrive at and use the public transport. Students then break into small groups and draw a picture of how they could arrive at the Metro Station. Students present their drawings to their class and discuss which features are there to support various modes of transportation.</p>	
<p>Learning Centre 10</p>	<p><b>Maps - What are maps?</b></p> <p>Learning Intention: I am learning to explain the components of a map and use them to find the quickest route.</p>	

### Success Criteria:

I can:

- Give and follow simple directions using a diagram or description
- Describe the path from one location to another on drawings
- Explain to a friend what a map is and why we would need them

### Activity:

- Cut pictures below into puzzle pieces and give a set to each group. Students are to put the puzzle back together.

### Ask students:

- What can you see on the map? What would you use this for?
- How would you get from..... to .....?
- What way do you think is the quickest? Why?
- Would we be able to answer these questions if we didn't have the map?
- Why do you think we need maps?

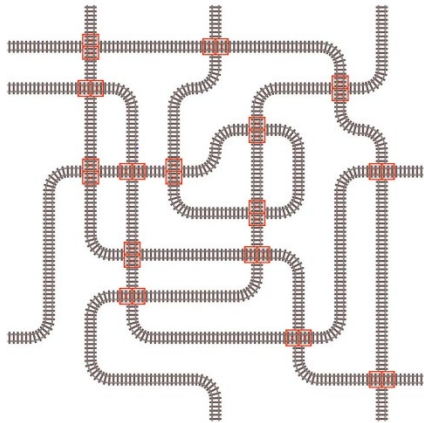


## What is a Map?

- 1 In a **watering hole**, complete your map puzzle. Discuss with your friends what you can see on the map.
- 2 On the next map, make a route to get you from one side of the map to the other. Try to find the shortest route from one side to the other.
- 3 In a **campfire**, discuss why we have maps and what they are used for. Tell your friend your ideas.



- Give each group a copy of the map below.
- Students are asked to create their own individual pathways from one location to another using the picture provided.













## Reflection

- Collaboratively discuss what a map is and what they are used for. Collect any wonderings about maps.
- Students turn to a partner and explain what a map is and the purpose of a map.

## Assessment

- Can students draw paths on maps and mazes?

	<ul style="list-style-type: none"> <li>• Can students explain what a map is and how it is used?</li> <li>• Can students use the language of location to describe paths?</li> </ul>	
Learning Centre 11	<p><b>Maps - Birds Eye View &amp; Maps - Floor Plans</b></p> <p><b>Learning Intention:</b> I am learning to use blocks or Minecraft to construct a floor plan of our school.</p> <p><b>Activity:</b> Choice of using blocks or Minecraft to build a floor plan of school Must include</p> <ul style="list-style-type: none"> <li>• Buildings</li> <li>• Each playground area</li> <li>• Must show teacher Minecraft birds eye view of plan (flying above work)</li> </ul> <p><b>Lesson Sequence</b></p> <ul style="list-style-type: none"> <li>• Explicit teach - birds eye view and what a floor plan is</li> <li>• Show students images of school on slides and discuss whether it is perfectly birds eye view or not and why</li> <li>• Individually or in pairs use blocks (Lego, any material) or Minecraft to create your floor plan</li> </ul> <p><b>Birds Eye View:</b></p> <ul style="list-style-type: none"> <li>• The ability to look at something from a very high place so that you see a large area below you</li> <li>• A view seen from high above. This phrase describes a view that is seen as a bird might see it, from an elevated perspective</li> <li>• Example: aeroplane looking over towns and cities</li> </ul>	<div> <p><i>Birds Eye View - What is a Floor Plan?</i></p> <p><b>1</b> In a  <b>campfire</b>,  <b>discuss</b>  what birds eye view  looks like and what a floor plan is</p> <p><b>2</b> Look  at the images on PowerPoint  slides and discuss with friends </p> <p><b>3</b> Use blocks, Lego  or Minecraft  to create your own floor plan</p> <p>LC11 </p> </div>
Learning Centre 12	<p><b>MAPS - TRAIN LINE MAPS</b></p> <p><b>Learning Intention:</b> I am learning to compare different maps and create my own metro line.</p> <p><b>Success Criteria:</b></p>	

I can:

- Discuss similarities and differences between different types of maps and the train lines from around the world.
- I can follow directions to create my own train line.
- I can use ozobot codes
- I can draw a simple metro map













**Learning Sequence:**

- Compare images of maps from yesterday to the train maps
  - What can you see that is the same?
  - What can you see that is different?
  - Why do you think train maps have no pictures of places? Why are they only a line?
- Give students the challenge to create their own train line using the stencil provided. Negotiate the route the train line will take through the kindy block.
- Students use blocks or a digital copy to practice making their train line map through the kindy block.
- Use the ozobot markers to map out the train line. At each "station", students add a code to make their ozobot acknowledge the station.



## Train Line Maps




- 1 Compare 🧑 the maps 🗺️ from yesterday to the new maps 🗺️. What is the same? What is different?
- 2 Create 🧑 your own train 🚂 line through the kindy block. You must start at the Caterpillar's 🐛 room and finish at the Alpaca's 🦙 room, making sure you have a station at each downstairs Kindy homebase.
- 3 At each station on your map 🗺️ you need to add an ozobot code.
- 4 Use the ozobot to be the train 🚂 on your train 🚂 line map 🗺️.

LC12 

Immersion Centre	Immersion Centre Student Card
Immersion Centre 1 + 2	<div> <h2>All things trains</h2> <ol style="list-style-type: none"> <li>1 In watering holes  create a Venn diagram  using two hula hoops.</li> <li>2 Using the images  of trains, your task is to categorise the pictures and discuss  the reasoning as to why you have put them into their groups.</li> <li>3 In your workbooks,  reflect  on what you <u>do</u> and <u>don't</u> already know about trains and their impact on our society. e.g. socially  environmentally  technologically  economically </li> </ol> <p>IC1 </p> </div> <div> <h2>What I already know about trains</h2> <ol style="list-style-type: none"> <li>1 Look at the model of a train provided by Sydney Metro.</li> <li>2 Before beginning our investigation on trains and reading through our challenge brief letter, it is important for your teachers to be aware of what you already know about trains in Australia. You task is to work in watering hole groups of 3-4 students to fill in the A3 <u>organiser</u> and brainstorm what you know about trains in Australia.</li> <li>3 If you agree with an idea that a group member has placed in the chart, you can write your initials next to the idea.</li> </ol> <p>IC2 </p> </div>

## Predictions for Future Sydney Metro

1 Explore  and analyse photographs  and posters around the room.

2 With a partner,  write  your predictions on the butcher's paper  provided. Don't forget to include the following:

Aboriginal Perspectives



Safety



Timetables






Accessibility



IC3 

## Wonderings/Reflections

1 Using the green screen room  collect an iPad 

2 Open the doink app  and record  your wonderings  about the Sydney Metro project. 

the trains



the stations



the materials



cost



location



IC4 

## Why do we need a station?

1

Students brainstorm  
use public transport?



ideas



on why they think it is important for us to

2

Brainstorm  
environment.



in groups



the effect that cars have on the



Are there positives and negatives? How many students travel to  
school each day using the bus, walking or riding their bike?

3

Discuss



in groups




what benefits it has on the environment for  
us to take more cars off the road and start using public transport more often.



## Role Play Staying Safe

1




Make a group  that has 6 or 7 friends. In your group think  and tal   
about how you can stay safe on a train .

Use the furniture and materials around the room to create your own train   
Some things you may like to use are:

2

- Seats
- Windows
- The front and back of the train
- Space
- Access for all including those living with a disability

3

Using the iPad,  record your team going through your train  model and ta   
about how you have made this safe.






## Create your own train

1 In watering holes  collect a LEGO  tub for your group. 

2 Using LEGO  create  your own train  design.  
Make sure you include all the elements needed for your passengers to have a safe and comfy trip.



## Predictions for Future Sydney Metro

1 In a watering hole  collect a Sphero Indi  and station signs  for your group .



2 Create  Sydney Metro  train line with the Sphero Indi .

Make sure you think about the speed and space between stations.




## Debating


1

Students are asked to look  out the window of the staffroom and tally  the number of cars that travel along the road.

2






Students will use the data from their observations and persuade their audience to why or why not there needs to be a train station at Jordan Springs Public School. 

3







Students will discuss  their findings and persuade the audience.


## Sample letter for students from 'Sydney Metro'

Hi students  of Jordan Springs Public School .


From the team at Sydney Metro , we have a very special inquiry task for students  across Kindergarten to Year 6 at Jordan Springs Public School . It must be so very exciting to be at a brand new school  and also to be in the new suburb of Jordan Springs .


Our team at the Metro  has noticed a large amount of people driving  to, and around the Penrith area, especially in Jordan Springs. We would like to offer the opportunity to your school  to create a future Metro station  at Jordan Springs . By designing a future Metro station,  we can provide transport  opportunities to the people  living in and around the Jordan Springs  area.

We know that this is such a big task and there so are many things to think about for your Metro station ! So to help you in successfully completing this inquiry we have provided you with a success criteria  to assist you in your planning . We can imagine how many brilliant ideas  you must have buzzing  around in your brains .

In your design of the new metro station , you are to include:

- ☐ A description and labelled birds eye view map of where the train station will be located
- ☐ A labelled floor plan of the train station
- ☐ Accessibility options at the metro station (wheelchair access, braille, lifts)
- ☐ A digital design of the train station using Minecraft
- ☐ A display of technologies used within the station
- ☐ A description of how you have selected materials for the station and cared for the land
- ☐ Safety at the train station and near the edge of the platforms

Your final design is due  to your homebase teachers by the 23rd of September 2022 (Term 3 Week 10).

We wish you all the best , and we absolutely cannot wait to see the final product.

Kind regards,

Sydney Metro Team 