The Workshops Rail Museum

Teacher Guide

QUEENSLAND MUSEUM

QUEENSLAND MUSEUM NETWORK

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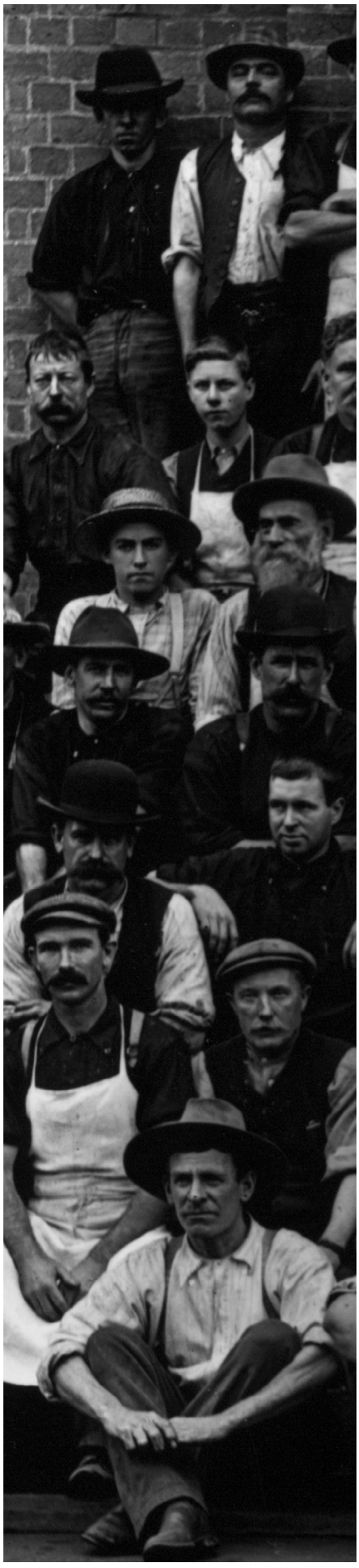

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Welcome to The Workshops Rail Museum

This guide provides teachers with an understanding of the site and purpose of The Workshops Rail Museum in Ipswich. It allows teachers to evaluate Museum spaces, experiences and programs to prepare for, or focus a school visit around a particular theme.

The information is an interpretive guide of Museum collections, how they are displayed and the stories/information they reveal. This will assist teachers and learners to make meaning of what they may see, touch, hear and discuss during a visit. To make the most of your experience, prepare students with a plan for their visit prior to arrival.

This guide is aligned with each of the thematic zones in the Museum to assist with wayfinding and locating key exhibits. Each section provides an overview of its respective Museum zone's themes and ideas for engaging students with each theme. They include suggested stimulus questions and activity ideas to activate discussions, engage students' interest, and to make connections with their own lives and experiences. You may also wish to download our map which shows the location of each zone. Please note that at time of printing there currently is no Zone 12 in the Museum.

This guide may also assist teachers to:

- Develop excursion-based worksheets, tasks or challenges and/or
- Manage the operational process of planning a visit.

When walking through the Museum with your group, encourage students to look around them. You may need to point things out to them above and below eye level (such as cranes and patterns up high or rails underfoot). Staff are on site to assist you with directions, questions and instructions.

Before arriving at the Museum

Organise students into groups, with an adult supervisor (see table below for recommended ratios). The Museum site is a big space, however exhibits and displays are easily accessible through the use of ramps and stairs, as well as a range of interactives. Advise students that there may be other visitors at the Museum and that they need to be considerate of others by using "inside voices", taking turns and navigating the galleries without running.

Adult/child ratio

	Number of children				
	Prep	Years 1 to 7	Years 8 to 10	Years 11 to 12	Children with special needs
1 adult free for every	3	5	10	15	1

Consider an extra experience to enhance or focus your visit. Options include Museum Educator-led School Programs:

- Introduction to the Workshops Railway Museum (Prep-Year 6; SEN all years)
- NEW Prep - Year 2 Sessions (commencing in 2022)
- Then and Now (Year 2-3 and Year 5-6)
- Push it, Pull it, Move it (Prep-Year 4)
- The Industrial Revolution and the Innovation of Rail (Year 9)

Bookings essential. Charges apply.

For more information on value-added and curriculum linked experiences, please visit The Workshops Rail Museum School Programs.

The Workshops Rail Museum

Rail has been an integral industry in the development of Queensland and especially in Ipswich. The construction of the original Ipswich Railway Workshops began in 1864 at a site adjacent to the Bremer River in North Ipswich. As the railways expanded, a much larger site was needed so the Workshops moved to its current location between 1884 and 1888. The Workshops developed rapidly, especially in the 1880s and early 1900s as new buildings were constructed to house the various railway trades. The site even had its own electricity source, the Power House, built in 1902. Over time, more buildings were added. By the late 1940s, it employed over 3000 people making it one of the largest employers in the state. In the 1990s, the site ceased operations for most types of work, except for the maintenance of Queensland Rail's heritage fleet. Today, there are 16 original heritage listed buildings across the site. The former Boiler Shop houses The Workshops Rail Museum, which pays homage to the workers and the history of rail in Queensland.

Exterior of the Boiler Shop (2019)

Inside the Boiler Shop c.1910

The Boiler Shop expanded four times to cater for the increasing demands of boiler making and repairs. During its busiest period in the 1950s, up to 24 boilers could be made or repaired at any one time. More than 300 staff consisting of boilermakers, apprentices and assistants were employed in this workshop. It was a very noisy, busy and dirty workplace. The dirt floor helped absorb noise and ensured the boilers would not get damaged when rolled onto the floor. Pounding forging hammers and pneumatic machines created the noise.

Suggested stimulus questions and ideas:

- Which part of the locomotive is the boiler? What job does it do?
- What would it have been like to work here over 100 years ago?
- What do you think you would have seen, heard and smelled if you worked here in the past? (empathic responses)
- Encourage students to look up to take in the size of the space.

ZONES 1 & 2: TIMEKEEPER'S OFFICE & GROUNDS

The Timekeeper's Office, at the entry to the Workshops just off North Street, is a two-storey timber structure that was built in 1910. Workers passed through this building every morning and afternoon to collect and return their individual worker's disc or "check". Pays were also handed out here. As you cross the forecourt, you will see a public artwork titled *Marker* by Brad Nunn.

Marker ▶

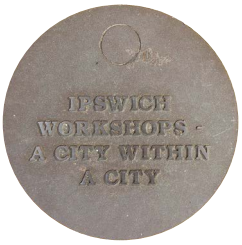
by Brad Nunn 2002

Over the life of the Workshops, thousands congregated in this area on payday. Each worker had a “check”, a brass disc with their employee number stamped on it. If a worker did not collect it on arrival, the timekeeper would know he was absent. In this sculpture, the “checks” symbolise the memories of the workers, their spirit and their stories. Through them their presence lingers on.

Transit Markers ▼

by Brad Nunn 2002

Eight plaques are inset into the path leading to the Time Keepers Building. The text glimpses the ethos and day-to day life of the Workshops.



Suggested stimulus questions and ideas:

- Have a look at the crowd of workers depicted in the photograph. What do you think is happening?
- How are the workers’ time discs similar to a roll call at school?
- What can the text in the plaques can tell us what it may have been like working at the Workshops?
- Ask students to share their opinions the artwork’s significance to the Museum..

War Memorial and Workers' Dining Hall

This memorial was erected in 1919 to honour the Workshops employees who served in World War I. More than three hundred men from the Workshops enlisted in the Australian Imperial force. Thirty-one did not return.

After the war, the Workshops raised £1400 to build the memorial. The memorial was designed by Queensland Railways architect, Vincent Price. London sculptors, John Whitehead & Sons sculpted the soldier figure.

Suggested stimulus questions and ideas:

- Look at the plaques behind the memorial and discuss what is represented in them.
- Why is it important to remember workers who served in the wars?
- What other ways do we honour those who served in the wars?

The workers' dining hall was built in 1911 to provide a cheap meal for workers. Each day when the whistle signalled lunchtime, hundreds of workers poured into the canteen for a hot meal. Workers were able to purchase a three-course meal for lunch. During World War II, the dining hall served up to 2500 lunches daily. This was the first place where women worked on the site.

Suggested stimulus questions and ideas:

- Ask students to locate the wooden bike racks underneath the dining hall building (do not allow them to crawl beneath the building).
- Why was this one of the only places women were allowed to work on this site in the past? Has this changed over time?

The Power House and Rostrum

When the Power House was built in 1901-02, the Ipswich Railway Workshops was one of the first industrial complexes in Queensland to use electricity on a large scale. In the earliest days of the Workshops, machinery was driven by steam power. The site expanded rapidly in the late 19th century and electricity was seen as the key to its modernisation. Ipswich had no electricity supply, so Queensland Railways built its own powerhouse. The dramatic building housed the boilers and generators is a testament to the importance of power for the Workshops. Some other interesting features of the Power House to note include the intricate brickwork, elaborate windows and doors, and the architecture reminiscent of a Romanesque cathedral.

Ask students to find the brass whistle on the front of the building (indicated by the white arrow) and discuss how it was blown every day to mark the start and end of the working day, as well as for all breaks throughout the day. The whistle was so loud people across North Ipswich often complained about it. Refer to the information panels at the front of the building to guide student discussion.

Suggested stimulus questions and ideas:

- Why would the Workshops have needed its own source of electricity?
- Who worked in the Power House? Why were other workers not allowed in there?
- How was the Power House used or repurposed once it stopped being the main supplier of electricity to the site?
- Ask students if they can find the date up high on the building that marks the start of construction (1901).
- Find the coal siding (on the right when facing the building) and discuss why coal was used in the Power House (to fire boilers used in generating electricity).

Look back down the hill to see a different view of the Boiler Shop, which houses the Museum exhibits, and to the right to see the Bogie Shop and Machine Erecting Shop across from the Bogie Shop. The rostrum is at the bottom of the Power House lawns.

The rostrum began in the 1920s when a committee was formed to organise a series of educational talks for workers during their lunch break. In its earliest days, a rostrum and blackboard were set up on a temporary platform. In 1927, the platform was moved to the site of the current rostrum and over time it included a stage, small dressing room, sound system, and small turn table for music. Lunchtime meetings at the rostrum expanded from educational talks to weekly quizzes and a performance space for external entertainers who would come in to perform for the workers on paydays. It was an integral part of the culture of the Workshops as it kept alive the great tradition of freedom of speech for over 60 years.

Suggested stimulus questions and ideas:

- Why was the rostrum an important part of the Workshops culture?
- In the past, the rostrum provided educational talks, entertainment and a meeting space for the workers to share issues. How do we communicate such topics today?

ZONE 3: MOVING GOODS

Moving goods has been the main function of rail. Railways in Queensland were built primarily to carry goods between agricultural areas, cities and ports. Initially the transport of passengers was secondary to the transport of goods, as shown by the mixed goods train in this display. Rail continues to haul goods of all kinds as it is still one of the most efficient land transports for bulk goods over long distances. Commuter and passenger travel trains are also an important part of rail today.

Enjoy a close up look at a mixed goods train as you walk along the ramp beside it. Encourage students to listen to the soundscapes and describe what they are hearing as they investigate the train.

The steam locomotive No. 444

Suggested stimulus questions and ideas:

- Locate the boiler. What is needed to generate steam in the boiler? (coal, fire and water)
- How do the coal, fire and water make the train move?
- Ask students to look inside the locomotive to see the firebox where the coal is burned.
- Watch the video *PB: Maid of all Work* (3:20min).
- Examine the items in the display case and discuss what they are, what were they used for, if they still in use today, and if not, what has replaced them.
- Ask students to point out and describe different features of the train, such as the wheels, track and colours.
- Encourage younger children to make steam whistle noises and wheel turning actions.

The wagons and carriages

Suggested stimulus questions and ideas:

- As you visit each wagon or carriage, discuss with students what they can see and what the wagons or carriages were used for in the past. Compare similarities and differences with modern day trains.
- What animals travelled in the animal wagon?
- Encourage younger children to join in with animal noises and actions.
- What was the large whip crane used for at the green covered wagon? How did it work?
- At the flatbed wagon, discuss what it may have carried (timber, machinery).
- Why does this train have a combination of different carriages and wagons all carrying different things? Is this the same for trains today?

The passenger carriage

Suggested stimulus questions and ideas:

- Go into the guard's compartment and look around.
- Investigate the different storage spaces (e.g. mail) and discuss what may have been stored in them and why.
- Why is there is a stretcher attached to the ceiling?
- Listen to the narration and ask students to locate some of the objects mentioned.
- Go outside the carriage and ask the children to discover the small compartment where dogs were carried (it looks a bit like a cage at the very back of the carriage).

Other rolling stock

On the other side of the platform is a petrol/oil tanker, a coal hopper (with real coal), and a covered wagon. Point these out to students on your way back along the ramp.

Suggested stimulus questions and ideas:

- Why were these items were transported by rail?
- What other things are transported by rail today?

ZONE 4: DIESEL REVOLUTION

Large and powerful diesel electric locomotives have been the backbone of railways throughout the world. Look inside a diesel electric locomotive and discover how it works and how it is driven. This exhibition features diesel locomotive Class 1250 No.1262 which entered service in 1961 and retired in 1987. It travelled 2.7 million kilometres during its service.

Suggested stimulus questions and ideas:

- Focus students' attention on the model train timeline display case in front of the diesel. How have trains changed over time? (discuss changes in appearance, purpose, means of locomotion or energy sources)
- What has stayed the same?
- Locate the numbers on the large blue and yellow diesel locomotives. What are they for? (they represent the "names" of each engine for identification purposes: each engine had its own unique number)
- Change the destination of the train by turning the handle on the front right side of the blue diesel.
- Look at the parts inside the motor and the information on the interpretive panels and ask students to explain the process of how a diesel electric engine worked.
- Go into the driver simulation area in the yellow diesel. Let children take turns driving the train (if time permits).
- In the simulation area, look at the sink, hotplates, windscreen wipers, rotating seats, and the instruments. Why did these locomotives have sinks and hotplates in the cabins?

ZONE 5: ALL ABOARD

Discover an amazing array of railway items on the object wall – everything from rail signs, station scales, marker lamps, an ambulance chest, cow catcher, boiler, wig wag signal, a sewing machine and much more. Check out the A10 No.6 locomotive, the oldest working locomotive in Australia, built in 1865. There are also two old wooden carriages to investigate – Carriage No.7 (built in 1866) which was manufactured in England and assembled at the Rockhampton Railway Workshops, and Brake Van No.52, built in 1884 in Maryborough.

A10 No.6 Locomotive

Suggested stimulus questions and ideas:

- Why is this steam locomotive special? (it was constructed in 1865 and is still operational. It is the oldest working steam locomotive in Australia)
- Read the interpretive panel about the locomotive shown in the picture.
- Watch the video and describe how steam was used to power the locomotives.
- What do you think it would have been like to drive this locomotive?

Carriage No.7 and Brake Van No. 52

Suggested stimulus questions and ideas:

- How are these carriages different from modern train carriages?
- Is there anything that is still the same?
- Who would have travelled in these carriages? Why?
- What do you think it would have been like to travel in one of these carriages?

Object Wall

Suggested stimulus questions and ideas:

- Investigate the montage of artefacts displayed overhead on the object wall and match their location and shape to a description on the long interpretive panel.
- Ask students to choose an object that they find interesting, find out what it is from the interpretive panel, and discuss with the others what that object is and what its purpose was or how it was used.
- Is their chosen object still used today? If not, what has replaced it?

Boiler Shop Theatrette

This space is used for delivering of school and early learning programs throughout the year. If you have chosen to add a Museum educator-led program to your visit, it will be conducted in this air-conditioned space.

ZONE 6: MODEL RAILWAY

The Model Railway depicts nine scenes from Queensland's extensive rail network. It includes Brisbane suburban lines, inland routes to grain-growing districts and outback towns, the coastal route, lines to coal mines in central Queensland, and privately operated cane railways. There is even a dinosaur dig site at Winton! You can see footage of our model railway in this video.

Suggested stimulus questions and ideas:

- What different types of trains and rail services are represented in the model?
- Why have railways been used in so many different areas around Queensland?
- Encourage students to search for different things on the model, such as boats loading coal (to reinforce what they have seen in Moving Goods), tunnels, bridges, and agricultural districts.
- Ask students to find some of the different types of animals located on different parts of the model, including cattle, camels, horses, kangaroos, chickens, cats, dogs, pigs, and a crocodile.
- Point out that the images on the screens are cameras attached to the model trains to allow them a closer view of the models, and encourage them to push the different buttons gently to change the screens.
- Ask the children to share their personal experiences about train rides they have been on in Queensland or other places.

ZONE 7: IPSWICH RAILWAY WORKSHOPS

This zone focuses on the employees and their work at the Ipswich Railway Workshops, which played an essential role in the development of Queensland Railways. Generations of blacksmiths, carpenters, painters, metalworkers, and other craftsmen built and repaired locomotives, wagons, carriages and railmotors at the Ipswich Railway Workshops.

Suggested stimulus questions and ideas:

- Enter the exhibition space via the ramp to see patterns used for casting various locomotive parts and fittings for machinery. Discuss with students what patterns were used for and watch the short video on how patterns were made.
- When entering the space, watch a video about the historic site and learn about the many different buildings and personal stories of workers.
- Encourage students to listen to the soundscape at the kitchen table display and discuss what event the recording is about (the end of the steam era). What impact did this have on workers at the time?
- Observe the range of tradesmen's tools on display. What is still used today? What has been replaced?
- Discuss the trades represented in the large images on the back wall of the different workshops in the past. Compare and contrast between the past and the present, including the workers' clothing, the tools and machinery.
- There are several builders' plates on display. What is a builder's plate? What information is on a builder's plate?
- Ask students to find out what is meant by the term "foreigner" and to find some examples of these.
- There was a famous saying, "*If it could be made, it could be made at the Workshops*". Discuss with students what they think this means and why it was a sense of pride for the workers (i.e. how they identified with this as being a part of the Workshops social and cultural identity).

ZONE 8: RAIL IN QUEENSLAND

Since the opening of the first line in 1865, railways have been an important part of Queensland life. Rail shaped the development of towns and industries, created opportunities for travel, and greatly improved communication. In a state as vast as Queensland, the rail network was vital in overcoming the tyranny of distance. It was through rail that Queensland communities became connected.

Suggested stimulus questions and ideas:

- View the video called *The Triumph of the Narrow Gauge* (4.35min).
- Why did Queensland choose a narrow gauge railway system and what were its advantages?
- What were some disadvantages of the narrow gauge, for example in relation to interstate travel and goods transport?
- Examine and discuss the visual timeline of the development of rail in Queensland in relation to other national and world events.
- Examine the signals and forms of communication. How were they used and how have they changed over time?
- Talk about the different uniforms worn by different Queensland Rail occupations and what their roles were.
- Draw students' attention to the old wooden suburban carriage which can be seen through the back window. These were used on the Brisbane suburban system from 1912 into the 1980s.
- Encourage students to imagine travelling in these carriages (no air conditioning, open windows, noisy, soot from the engine, etc.). How does this compare with travelling in modern passenger (electric) trains?
- What significant impacts did World War I and World War II have on the railways?

ZONE 9: PLATFORM 9

Since its invention, rail has grown to become one of the major forms of transport in the world. In Queensland, passengers have travelled by rail since the mid-1860s. Trains have carried millions of passengers on long distance journeys – whether travelling to the seaside, visiting distant relatives, or leaving home.

Suggested stimulus questions and ideas:

- As students walk along the recreated platform, encourage them to listen to the sounds of the train being prepared for its journey, such as passengers finding their seats, and railway staff making final preparations before departure.
- Ask students to describe what they are hearing and what they think it would have been like to travel on a long-distance train journey in the past.
- Look at the display box of a school student's suitcase packed with items for boarding school and use this a stimulus for discussion comparing and contrasting school life in the past and today.
- Examine the items on the other side of the platform, such as the luggage trolley. Who would have used this and what was its purpose?
- What other items are on display on the platform and what were their purposes?
- Look into the 2nd class carriage (BV 269) from 1882 and talk about the materials used, such as wood and leather. Why are there no plastics, fibreglass or other materials that are used in modern passenger trains?
- Look through the window of the 1936 refreshment car (AL/F 1248) to see its upholstered chairs and decorative wood panelling. Who would have travelled in this carriage? Where may they have been going?

ZONE 10: NIPPERS RAILWAY

The youngest person working in a railway track gang was often referred to as a ‘Nipper’.

This zone is a dedicated children’s play area that features an interactive railway. You may wish to allow younger children to explore and discover the zone for themselves, under your supervision. It is recommended that only one class at a time plays in this space. Please ensure students are mindful of other visitors.

ZONE 11: MIGHT AND MUSCLE

Today over 7,000 kilometres of railway connects people and places across Queensland. Many of the tracks in use today trace their origins back over 150 years to the state's first railway builders, who worked with picks and shovels to build new paths across the challenging environment.

Explore the tools and machinery used in the construction of Queensland railway lines from the early days of hand-powered tools and equipment to the advent of steam engine technologies, and petrol- and diesel-powered machinery. Learn about life on the line for these railway workers and their families over time. See Queensland's last surviving Bayer Garratt steam locomotive (built 1950), one of the largest and most powerful types of steam engine used on the Queensland Railways.

Suggested stimulus questions and ideas:

- Look at the images of past railway camps and Camp Wagon CW119 (built 1968) to learn about the lifestyle of railway workers and their families in times gone by. What do you think life on the line was like for these people?
- Examine the different types of tools and discuss their uses. Are any still in use today? If not, what has replaced them?
- Ask students to describe the different types of machines which used steam technology. How did this type of technology assist in building the railways and other infrastructure in Queensland?
- What are some of the features of the Beyer Garratt steam locomotive that make it different from the other steam locomotives in the Museum?
- Compare and contrast how the different machines moved, and the energy needed to power them, from the hand-powered red pumper trolley through to the steam engines and petrol and diesel tractors.
- What types of energy sources may be used in the future for this type of heavy construction work?

ZONE 13: RAIL TODAY

In the 19th century, rail ruled supreme as the fastest and most efficient means of land transport. By the 1950s, rails supremacy was challenged by the aeroplane and the motor vehicle. Today rail is experiencing a revival with the development of high-speed trains, together with the desire of many people to savour the experience of travelling on long distance tourist trains.

Suggested stimulus questions and ideas:

- Watch at the videos: *Trains without Frontiers* (7:25min) and *Visions and Dream* (5:30min).
- Discuss the advantages of rail transport in heavy haul, such as for mining and transporting shipping containers.
- What is a Maglev train? How does it work?
- Consider if the Maglev is a serious competitor for passenger traffic over air and road. Why or why not?
- Discuss the advantages and disadvantages of very high-speed trains.
- Ask students to share their own experiences of high-speed rail travel in other countries (if applicable).
- Imagine you live in the year 2099. What will trains look like then? What energy sources will power them? What will travel on them? (students may extend upon their ideas through making prototypes in Maker Space where they can participate in the future transport challenge)
- If time permits, students can take turns driving the tilt train simulator.

ZONE 14: OTHER RAILWAYS

Queensland's railways included not only the Queensland Rail network, but also a number of other systems. These included the huge sugar cane railway 610mm gauge system, timber tramways, underground mine systems, as well as railways carrying passengers and goods to small communities not served by the main network. Trains were also used during World War I and World War II as a means of moving troops and equipment.

Perry No. 3: "Flash" (built 1948)

Suggested stimulus questions and ideas:

- What was this locomotive used for? (sugar cane train)
- Discuss the manual cutting of sugar cane and the loading onto wagons in the past (refer students to images on interpretation panel).
- How is sugar cane cut today?
- How is sugar cane transported to sugar mills today?
- Why is Flash painted bright yellow? (improved visibility at crossings in cane fields and at night)

Hunslet 327 (built 1916)

This steam locomotive was manufactured in Leeds, England and was used for moving ammunition, supplies and soldiers on the Western Front during World War I. After the war, it was brought to the sugarcane fields of North Queensland. In recent years it has been restored by Queensland Rail and Queensland Museum to its original form.

Suggested stimulus questions and ideas:

- Why were trains used during World War I? What were some of the advantages and disadvantages of using trains?
- How were trains used during the War? (for example, ambulance trains and recruitment trains)
- Why do you think the Hunslet was painted in a dull, dark colour?

Gold Diesel No. 1281 (built 1965)

This engine officially entered service on 30 July 1965, the day of the railway centenary celebrations. It had been painted in a distinctive gold livery with blue and white markings and was named Century in honour of the occasion. It was used at the railway centenary celebrations held at Grandchester along with the A10 steam locomotive. It then frequently hauled the Queensland Rail's premier passenger train, the Sunlander, on its journey to Cairns.

Suggested stimulus questions and ideas:

- Ask students to find its name on the small interpretive panel under the train. Why was it called that?
- Ask students to compare and contrast it with the blue diesel from Zone 4 (for example, it's appearance and its use).

ZONE 15: BOILER SHOP GALLERY

This space often features collections and exhibits from other museums and learning institutions. Check the Museum's website to what is on display in this space at the time of your visit.

Please enter through the glass doors. Doors remain closed for climate control, but unless signposted, you are welcome to enter and explore.

ZONE 16: MUSEUM COLLECTIONS AND STORAGE

As you pass through this area, look through the windows to see some of the Museum's objects and archival collection. Part of this space is not open to visitors, but you are welcome to view the workings behind the scenes from the windows and gate.

Suggested stimulus questions and ideas:

- Many of these items have to be kept in controlled conditions, for example air-conditioned storerooms with temperature and humidity set at varying levels according to the items stored. Why do you think this is done?
- Why is it important to have museums?
- Have you been to other museums and seen different collections? Where did you go and what did you see?
- Read the interpretive banners and look at the images on *Tracking Queensland: Major Mileposts for Rail* and discuss the different images and milestones for rail in Queensland over time.

8-9-10 Road (Restricted area)

Students can get a glimpse of an operational Queensland Rail workshop through the fence. From this area back, Queensland Rail works on the maintenance and restoration of the heritage locomotives, carriages and wagons. Although public access is prohibited, students may be able to see some of these items, as well as tools and heavy machinery still used in the Workshops today.

ZONE 17: THE BOGIE SHOP

This brick building was first used in January 1902. For over sixty years it was the Foundry where a very large range of parts for locomotives, rolling stock and infrastructure was cast. Casting was done in iron, brass and aluminium using wooden patterns made by highly skilled pattern makers. This building and the Boiler Shop are fine examples of Federation era industrial workshops.

During World War II, not only did the Foundry produce castings for railway use, but also was employed in the war effort producing different types of metal casings and fittings for defence force ships. In 1965, the Foundry was moved to the Queensland Rail Redbank Workshops, and this building became the Bogie Shop until the late 1990s. Bogies are the undercarriages of a railway vehicle, including the wheels. It is now used for storage of some of the Museum's larger collection items.

This building is not open to visitors, but you are welcome to view the workings behind the scenes from the fence and view the arrangement of the different workshops on site (separate buildings performing different functions in the manufacture of rolling stock and related equipment). At the far end is the "Traverser", a movable platform which transferred equipment and rolling stock between the different shops as construction progressed. It ran along the wide-spread rails that run along the ground between the two rows of buildings.

ZONE 18: SCIENCENTRE AND MAKER SPACE

Students unleash their inner scientists at the *Sciencentre*, located between Zones 4 and 5. They can follow their curiosity, ask questions, test ideas, and use their imaginations in this fun and experience-rich environment. Find out more about the science and technology of the railways and learn how science is a part of the things we do every day.

Sciencentre

Explore the world of science through play with over 20 interactive stations across five areas:

1. Orientation: Being a Scientist

2. Electricity and Magnetism

3. Steam and Air

4. Forces and Motion

5. Simple Machines and Engineering

A *Sciencentre* Exhibition Guide is available online and provides an overview of the experience, including information about the different stations and highlights things to do, think about and discuss.

Maker Space

Students imagine and design solutions to challenging questions posed at the Maker Space. They can make their own creation from a range of materials provided and test out their designs. They can also share their thinking with others and build on each other's ideas.

Suggested stimulus questions and ideas:

Through a process of challenge, think, make, test, and improve, students will consider questions about:

- How will we move in the future?
- How will we travel?
- How will we transport our food and resources?

Students can develop their own solutions to display on the Maker Space wall or to take home.