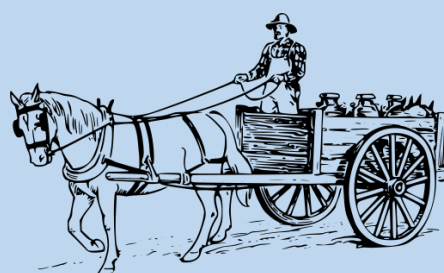


# TRAINS - FACT CARDS

1. Carefully cut each card out along the dotted lines.
2. Collect your cards all together and read through the fact cards.
3. You could even try quizzing your family and friends about the types of trains.

## EARLY TRAINS

- The first trains were single wagons that were pushed or pulled by people or animals along tracks.
- They were used to move goods, such as coal.



## STEAM TRAIN

- First type of trains.
- They use coal in a firebox to boil water until it turns to steam.
- The steam is forced through powerful pistons to give the engine the power to drive the wheels.
- At first, they moved mainly goods, but were soon used to carry passengers as well.



## DIESEL LOCOMOTIVES

- First introduced in Australia in the 1930s.
- Replaced in the 1950s by diesel electric locomotives.
- Diesel fuel powers an engine which drives a generator to make electricity.
- The electricity powers traction motors that turn the wheels.
- Were used to transport enormous quantities of materials over huge distances.
- More efficient and smoother than steam trains, and carried much heavier loads.



# ELECTRIC TRAINS

- Passenger electric trains were first introduced in the late 1870s.
- The electric engines get their power from overhead wires or through an extra third rail.
- Building an electric line is expensive so these trains are usually found in city areas where the route is busy enough to pay for the expensive set-up.
- They are faster, quieter, and simpler to run than diesel trains.



# MAGLEV TRAINS

- Do not use an engine to power them.
- They run on a guideway with magnets in the track ahead of them that move them along.
- They are smooth, fast and environmentally friendly, creating little noise or exhaust pollution.
- However, the track is expensive and there are problems moving the train from one track to another.

## DID YOU KNOW?

Some of the fastest trains can travel 300 kilometres per hour.

Most of the high-speed trains in the world are powered by electricity.

Electricity is transmitted to the train by overhead cables or through special rails running alongside the track.

Some high speed rail services can reach speeds over 300 kilometres per hour. In operation since 1964, Japan's Shinkansen (or 'bullet train') is a well-known example of a high speed passenger rail system.



## DID YOU KNOW?

The busiest railway station in the world is Shinjuku Station in Tokyo, Japan.

It has over 3.6 million people passing through the station each day. Shinjuku Station has 36 platforms, including above and underground arcades, and over 200 exits.



## DID YOU KNOW?

Australia's first steam railway line was opened in Melbourne in 1854.

A steam locomotive is powered by a steam engine. Most steam locomotives contain a boiler to generate the steam used by an engine. The water in the boiler is heated by burning combustible material - usually coal, wood or oil - to produce steam.

The steam moves pistons which are connected to the locomotive's main wheels, known as the 'drivers'. Both fuel and water supplies are carried with the locomotive, either on the locomotive itself or in wagons called 'tenders' pulled behind.

## DID YOU KNOW?

Some of the heaviest trains in the world are Australian freight trains hauling bulk goods such as coal and iron ore.

Some Australian freight trains can be more than two kilometres long and as heavy as 35,000 tonnes.

They can travel up to 80 kilometres an hour, and depending on the braking system, they can take up to a kilometre to stop.

