DUMBLEYUNG
PRIMARY SCHOOL

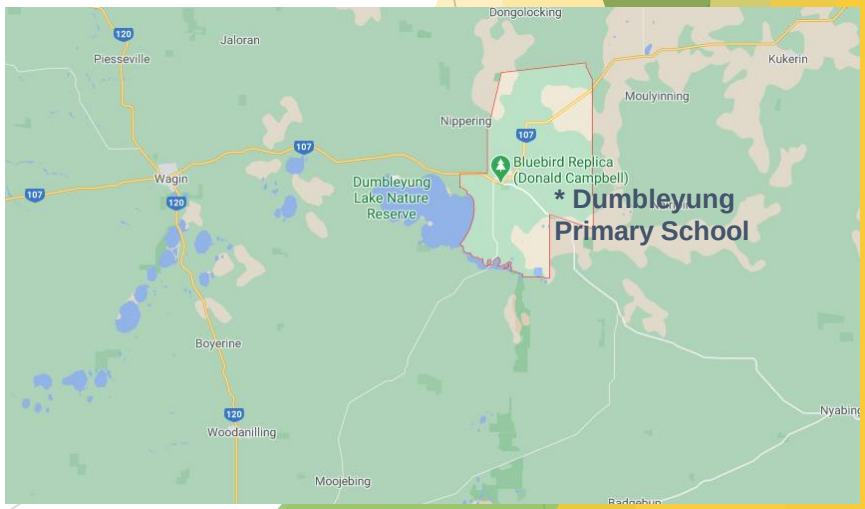
Circuit Breakers 2020

Dumbleyung Primary School

Dumbleyung Primary School

Our school is located in a small farming town called Dumbleyung in the Wheatbelt of Western Australia. We are 270 kilometres south east of Perth which is approximately a three hour drive. There are 27 kids who attend our school and there are ten staff members.

At Dumbleyung Primary School, there is a junior classroom (Kindy to Year 2) and a senior classroom (Year 3 to 6). Our students love learning about STEM and they have thoroughly enjoyed this project!



The Senior Room

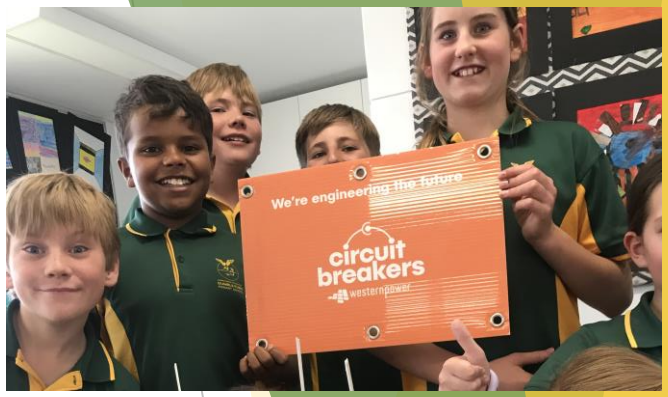
The Senior Room class have been busy building a model of our future town. Our school motto is ‘Commitment to Achieve’ which we have strived to do throughout the Circuit Breakers project. Although our class encountered many challenges, we never gave up!

Throughout this process we also focused on our school values which are learning, excellence, equity and care. We applied learning during all our Circuit Breakers lessons, especially when learning how to code the micro bits. We displayed excellence when we tried our hardest to produce our best work. Equity was evident by including everyone fairly and we showed care by trying to make sure everyone knew what they were doing so everyone could experience success!

Each student in our class kept a journal to record the key information, findings and reflections about each lesson.

We all think that this project was lots of fun and are proud of our problem solving and team work skills!

What we learnt about Western Power

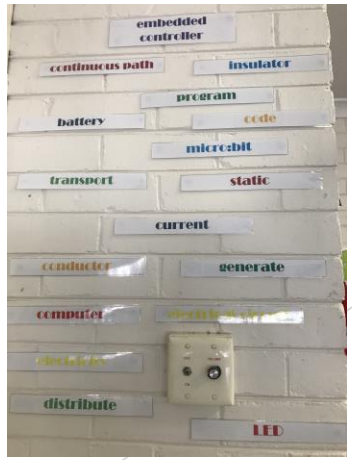


Western Power relies on a team of diverse STEM professionals which include engineers, data analysists and network controllers.

Western Power is in charge of distributing electricity to many communities across Western Australia. They solve a number of problems each day such as fixing power outages and resolving safety issues.

Western Power are eager to educate students about safety around electricity and a sustainable future for energy production.

Neil, from Western Power, came to our school to show us the safety equipment that Western Power uses daily. Western Power uses lots of safety equipment such as leather gloves, high visibility clothes, rubber boots, safety helmets, safety glasses and headlamps.



What we learnt about Landcare

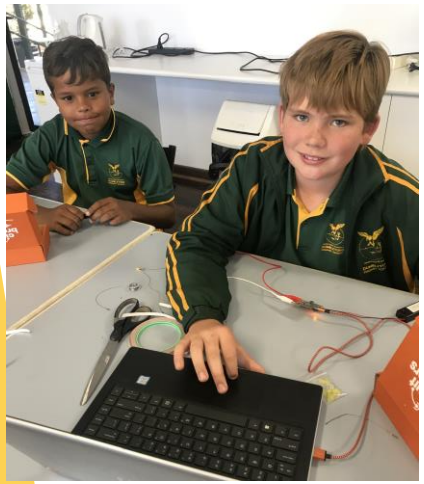
- Claudia from Landcare Dumbleyung taught us about some features that we could include in our design to make our town more sustainable and self-sufficient.
- We learnt about the advantages of planting trees to stop wind erosion, soil erosion and water logging. We also learnt that planting salt bush can be used for sheep feed as well as encouraging native birds and wildlife.
- Landcare have made contour banks to direct water to dams so water can be recycled for parks and gardens.
- Landcare encourages farmers to use renewable sources of energy such as solar panels which are better for the environment and also allow them to be more self sufficient.

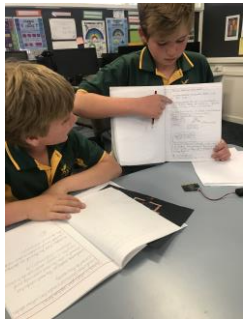
DUMBLEYUNG
LANDCARE ZONE

Landcare
Australia

What we learnt about engineers

- Engineers are problem solvers. If they get stuck figuring out a problem, they have a positive mindset and figure it out.
- Engineers need to work as a team.
- Engineers keep us safe and are working on ways on how to improve our future.
- Engineers design projects to make our lives easier.
- Engineers use critical thinking to find solutions and resolve problems.
- Engineers have to be creative to come up with new designs and technology.
- Engineers are very important because without them our lives would be very different.
- Engineering is FUN!!!





Our future town

- We decided to design the future town of Dumbleyung and focused on creating a community based, safe, sustainable and self-sufficient place to live.
- Some of the buildings and structures we included on our model are a hospital, school, police station, food shop, church, CBH, Landcare, CRC, community garden, greenhouse, windfarm, dams, pool, entertainment area, Farmer's Centre, hotel, roadhouse, oval, cultural store, waste management facility, power station and houses.
- All of our buildings are powered by energy from solar panels and the town wind farm. Our town has been designed to operate on micro grids.
- The gardens and oval are watered using recycled water from the rain tanks and town dams. We have kept large lawn areas to a minimum to save water.
- We have also included electrical signs to improve safety and communication around the town.
- Our roads are made out of recycled plastics and the main street lights are powered with LED lights.
- The community garden in the centre of town is a place for everyone to meet and enjoy time being outdoors and connecting with nature.

Our shared town ideas

Wind farm for town energy

Waste management facility to reduce waste and recycle

Community garden in centre of town

Roads made out of recycled plastics

Community crop

Western Power building and storage

Town dam to collect run off water

LED lights on main street

Town dam to collect run off water

Native gardens along main street

Landcare centre and compost garden

Community oval using harvested water

Dumbleyung Primary School

I designed Dumbleyung Primary School keeping in mind the following aspects:

Sustainability

- Water tank to give fresh water for the school
- Play ground was made out of recycled materials
- Solar panels to get renewable energy from the sun
- Native garden to save water
- Fence for safety
- Large windows for natural light

Digital Technologies

- 40km sign to let people know how fast they should go in school zone.

By Estella Scally

Hospital

I designed the hospital and health campus keeping in mind the following aspects:

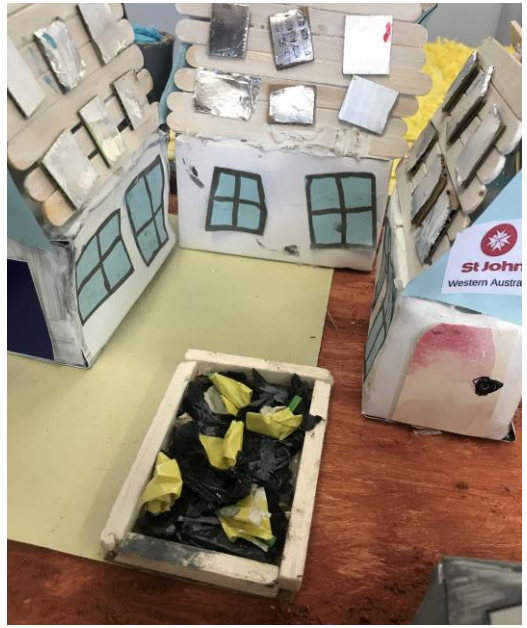
Sustainability

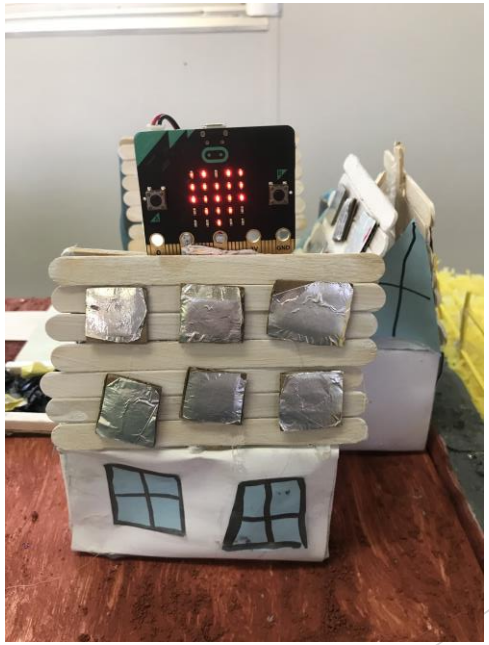
- *Solar panels on the roof to collect renewable energy from the sun.*
- *Rain water tank to collect water wisely.*
- *Compost garden to reuse waste positively.*

Digital technologies

- *Flashing heart sign to everyone can find the hospital easily.*

By Lexi Ward





Foodworks and Post Office

I designed Foodworks and the post office keeping in mind the following aspects:

Sustainability:

On my shop I have solar panels to collect power for Foodworks and the post office.
I also had a native garden so it doesn't require lots of water.
I have a water tank to collect rain water to use for the garden and shop.
I have big windows for lots of natural light so I am not using too much power.

Digital technologies:

There is a sign on the roof saying 'Foodworks' for visitors to find the shop easily.

By Jasmine Cronin

Roadhouse

I designed the roadhouse keeping in mind the following aspects:

Sustainability:

On the roof I have solar panels to collect energy from the sun.
The road house has native gardens because they don't use much water.
I also made an electric charger to power cars which is better for the environment.

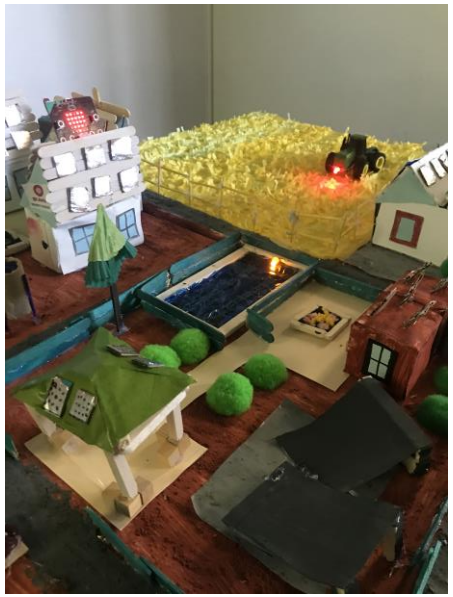
Digital Technologies:

I've used my micro:bit to make the street lights so people can see at night so they won't crash.

By Darby Ball

Pool, BBQ area and skate park

I designed the pool, BBQ area and skate park keeping in mind the following aspects:



Sustainability

- I included solar panels on the roof.
- I've included native plants and trees to reduce water usage.
- I have a water tank to collect rain water.

Digital technologies

- I coded an LED light to light up the pool after dark.

By Abbie Smith

Emergency services

I designed the emergency services buildings keeping in mind the following aspects:

Sustainability

- Solar panels on the roof to provide power for the emergency services.
- I have a rain water tank.
- The garden out the front is a combination of native plants and flowers.

Digital technologies

- I was working on creating a warning siren.

By Michael Hansen

CRC, town hall and community greenhouse

I designed the CRC, town hall and community greenhouse keeping in mind the following aspects:

Sustainability

- Water tank to store water
- Solar panels to provide renewable energy
- Natural lighting to save power
- Green house to provide food for the town

Digital Technologies

- Digital sign to show the town's daily temperature

By Cleo Ward

Farmer’s Centre

I designed Farmer’s Centre keeping in mind the following aspects:

Sustainability

- Solar panels to power my building
- Water tank to supply me with water
- Wide windows for natural light

Digital technologies

- LED light for sprayer in the community paddock

By Lucas Ball

Cultural store

I designed the cultural shop keeping in mind the following aspects:

Sustainability

- *Solar panels on the roof*
- *Water tank*
- *Native garden*

By Jamie Eades

CBH

I designed CBH keeping in mind the following aspects:

Sustainability:

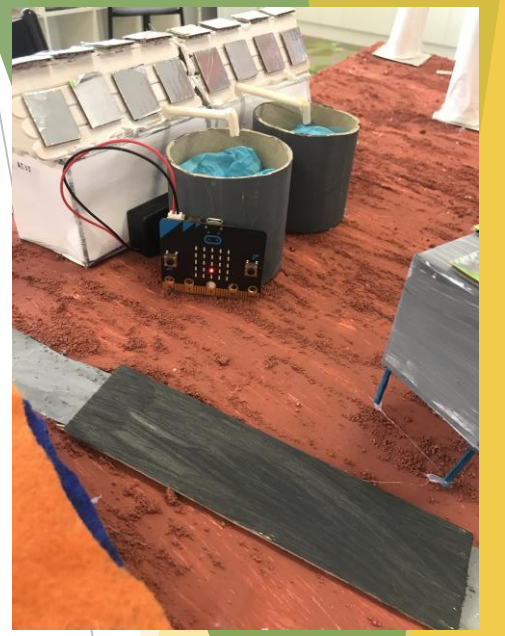
On the roof of my storage shed I have solar panels for CBH to be more self sufficient.

Next to my storage shed I have rainwater tanks to catch the runoff water so it doesn't make the salt rise from the ground. The water can also be used for CBH.

Digital Technologies:

I have an electric sign that tells you the weight of your truck at the weighing bridge.

By Flynn Bartram



Church

I designed the church keeping in mind the following aspects:

Sustainability:

•I have a shared garden with a house to reduce water usage.

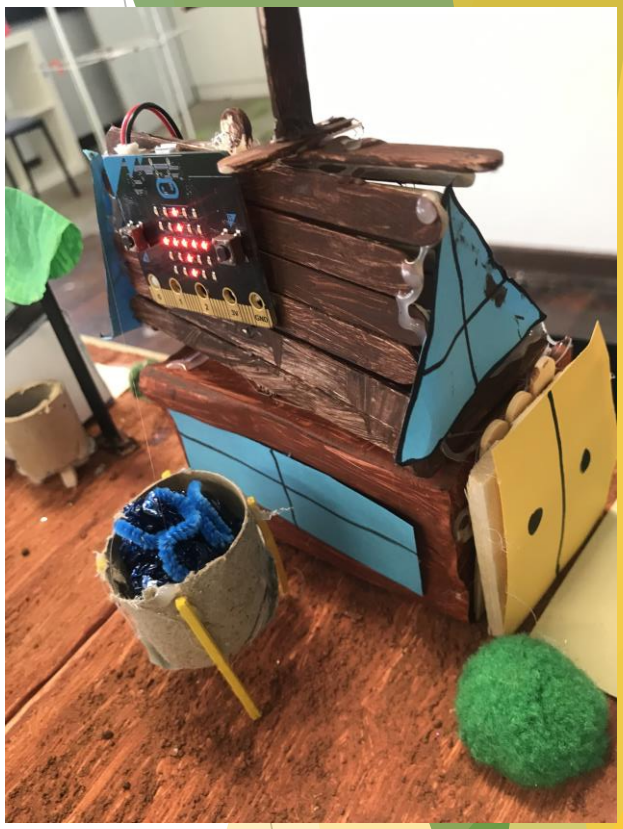
•Solar panels for storing power and using renewable energy.

•I have a water tank so I can save water.

Digital Technologies:

•I have an electrical sign so it stands out easily for visitors to the town.

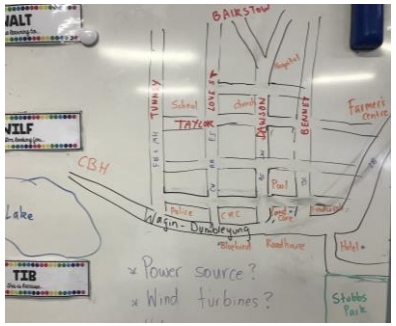
By Bridie Bartram



Our reflection

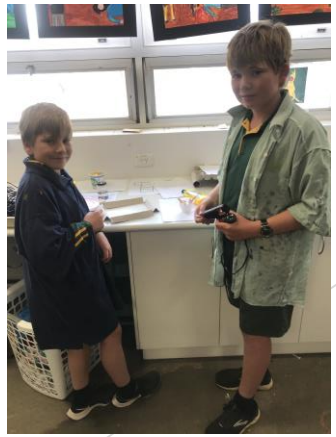
Highlights

- Coding the micro:bits
- Our visit from Neil
- Designing the town on Minecraft
- Completing the safety activities online
- Building the town in the Art room
- Working as a TEAM!



Challenges

- Downloading and saving the codes
- Note taking
- Fixing broken circuits
- Hot glue burns
- Sharing limited supplies fairly
- Time management



Thanks Western Power!!!