6M Open Day 2020

THE UNIVERSITY OF SYDNEY
STEM Teacher Enrichment Academy

STEM Challenges:

- Stacking Cups challenge
- Marble Run challenge

\+ Term 2: Science and Technology STEM Unit

Welcome to 6M Open Day

With the COVID situation, this year our Melrose Park Public School Open Day is virtual.

We welcome you into our classrooms to view a showcase of our ‘Level 1’ STEM (Science, Technology, Engineering and Mathematics) projects. We were looking forward to completing these tasks with parents, carers and our community, focusing on exploration and collaboration skills.

The second section of these slides shows our Term 2 science unit which had a STEM focus.

Roller Coaster Challenge

Build a "roller coaster" following these rules:

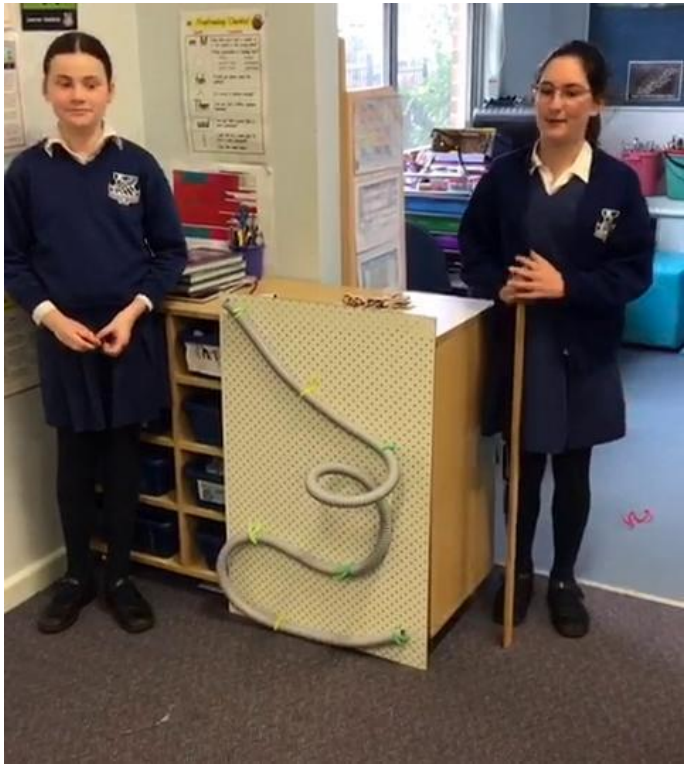
- Materials: pegboard, tubing and ties
- Marble to travel down the tube using gravity
- Marble velocity to be minimised on exit from the tube
- Board must be placed vertically against a wall
- The team whose marble travels the *least* distance on exit wins

Entry to the tube must be vertical at top left of pegboard.

Exit must be horizontal at bottom right of pegboard.

Roller Coaster Challenge

Can you change or adapt the tubing to reduce the velocity of the marble so it travels the least distance after exiting the tube?



S3 STEM Challenge: Collaborative Tower Building

Challenge

Can you work with others to make a tall tower from cups without touching the cups with your hands?

Materials

21 cups (per group) + a rubber bands with strings attached (provided).

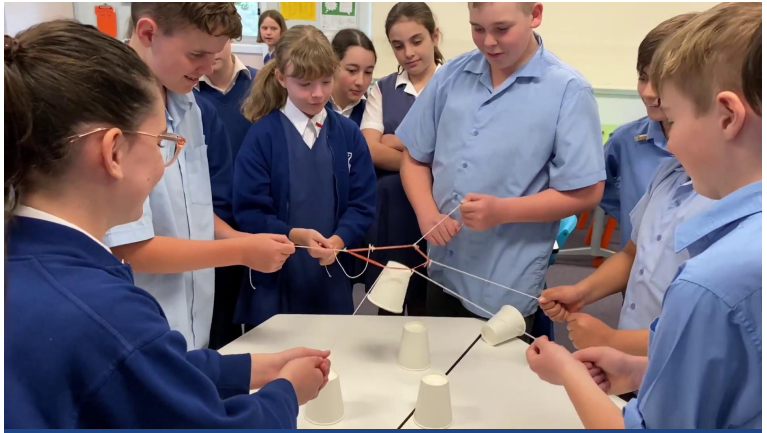
Challenge Instructions

1. Work with your group to transfer the 6 cup pyramid structure from one place to another.
2. Build the tallest tower using the rubber band to lift and place the cups onto your tower.

Groups must start again if anyone touches a cup with their hands.

S3 STEM Challenge: Collaborative Tower Building

This challenge involved collaborative group work and practical problem solving as well as an understanding of the strengths and limitations of the materials provided. These are all aspects of Level 1 (beginner) STEM skills.



Students discovered it isn’t easy to do at first, needing communication and perseverance.

We were impressed by the way students demonstrated problem solving skills and learnt from their mistakes. They talked with each other, devising strategies and eventually came up with a reliable sequence of steps that worked.

On the next slides, watch the videos of some groups to see and hear their problem solving and teamwork in action.


SUCCESS


INFORMATIVE TEXT
FICTION
DRAMA
AUTOBIOGRAPHY
PLAY


ravine
nevertheless
Instantly.
METAPHOR

6M Open Day 2020

Term 2 Science and Technology STEM Unit: electricity and circuits

Parents: we hope you enjoy seeing the students' creations in the videos on the following pages...

Group STEM task

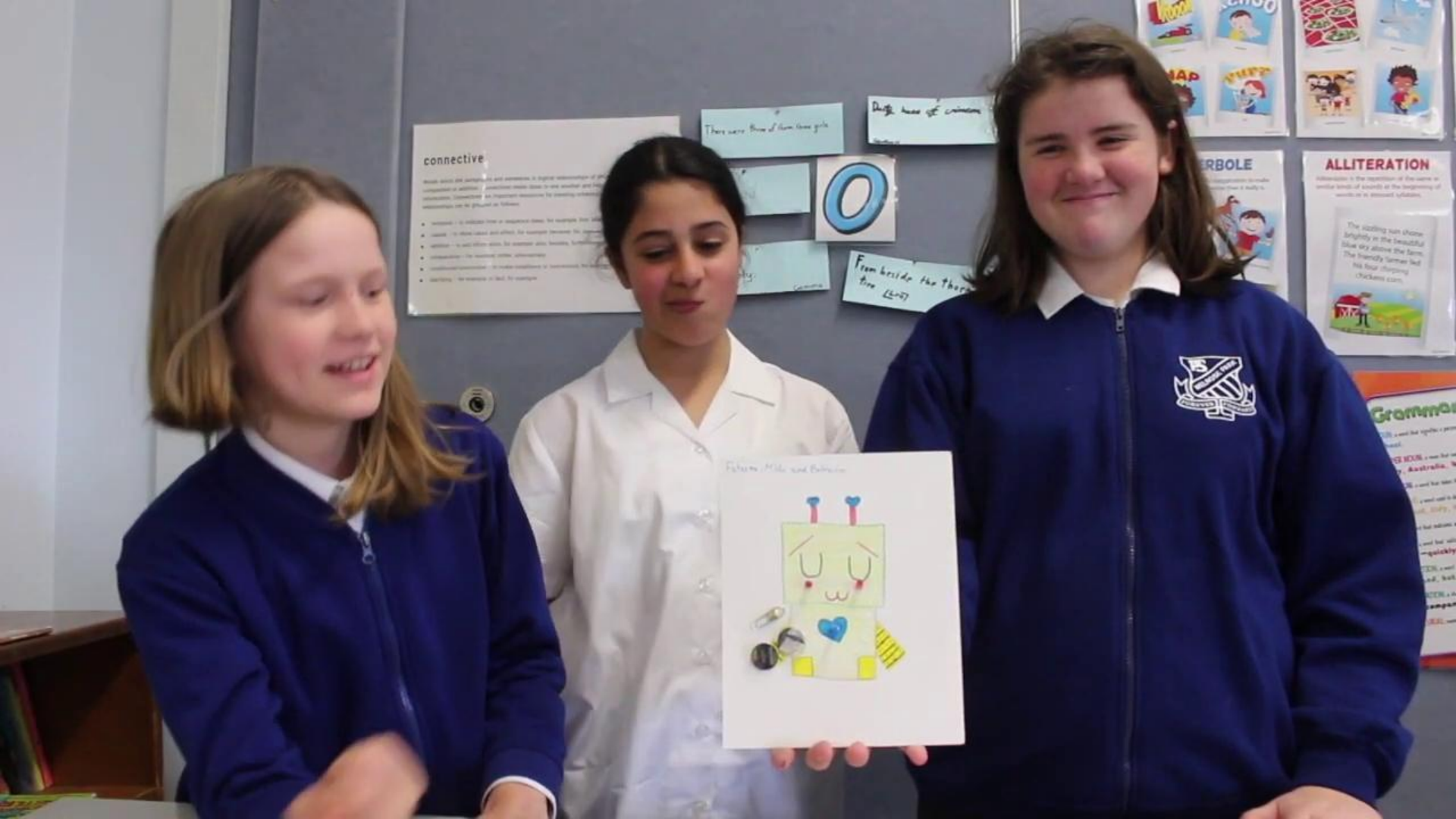
Design brief:

Your task is to create and light up a small model house or design a 2D card with at least two lights.

Design Criteria:

- Must use a minimum of two light bulbs or LEDs
- Each light must be able to switch on and off independently of the other(s)
- Use switches to turn your lights on and off.

Our design choice: _____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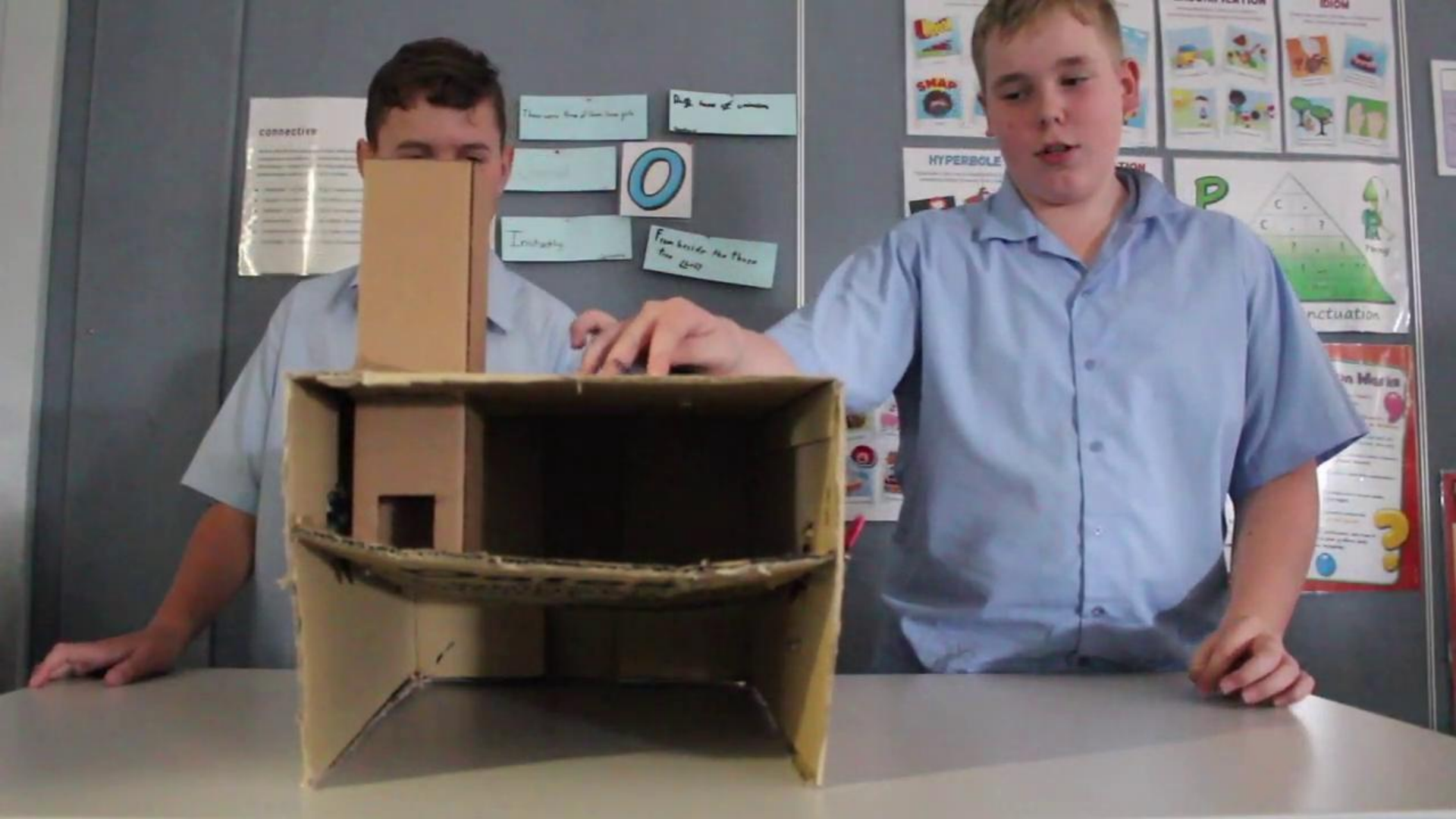
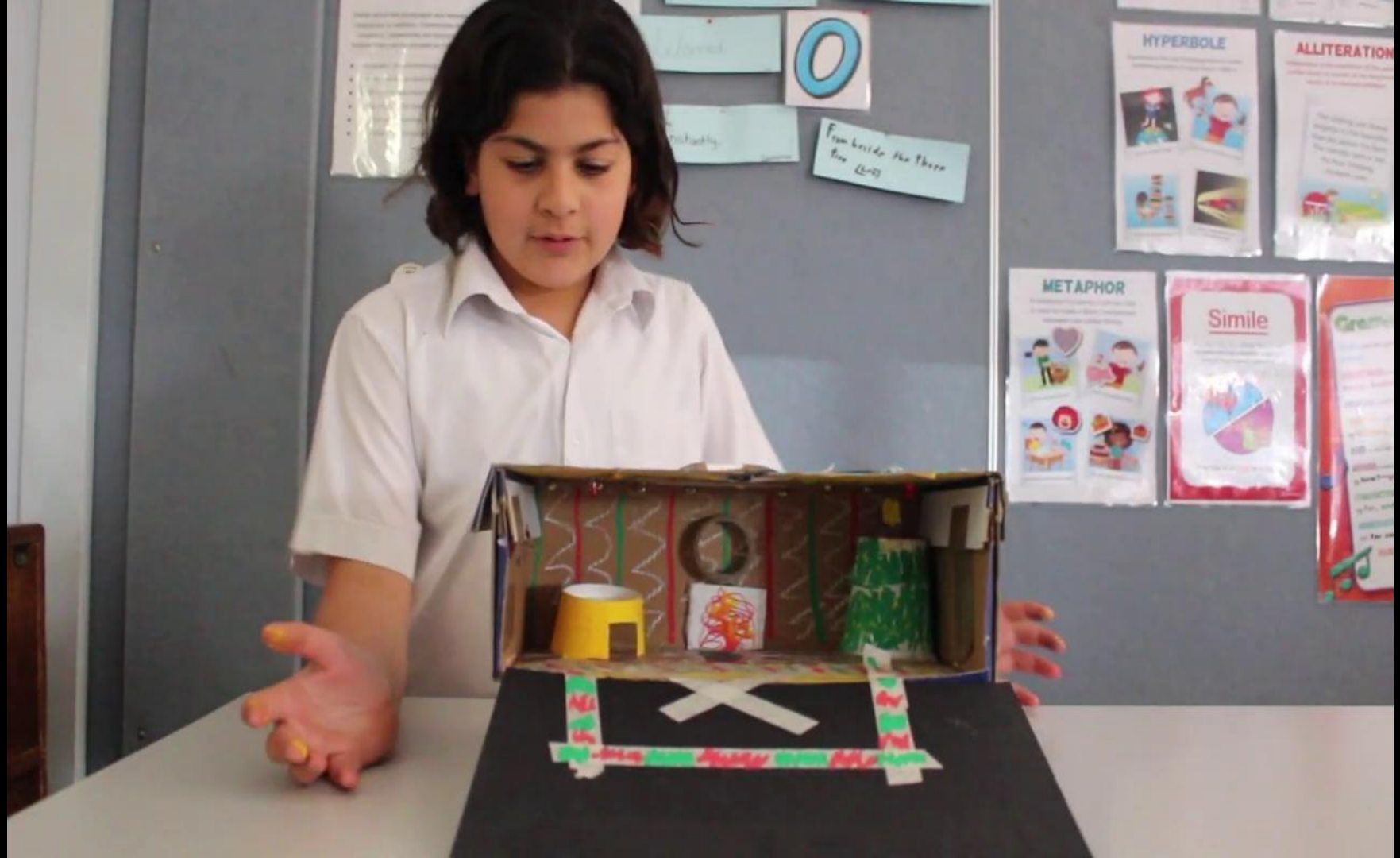
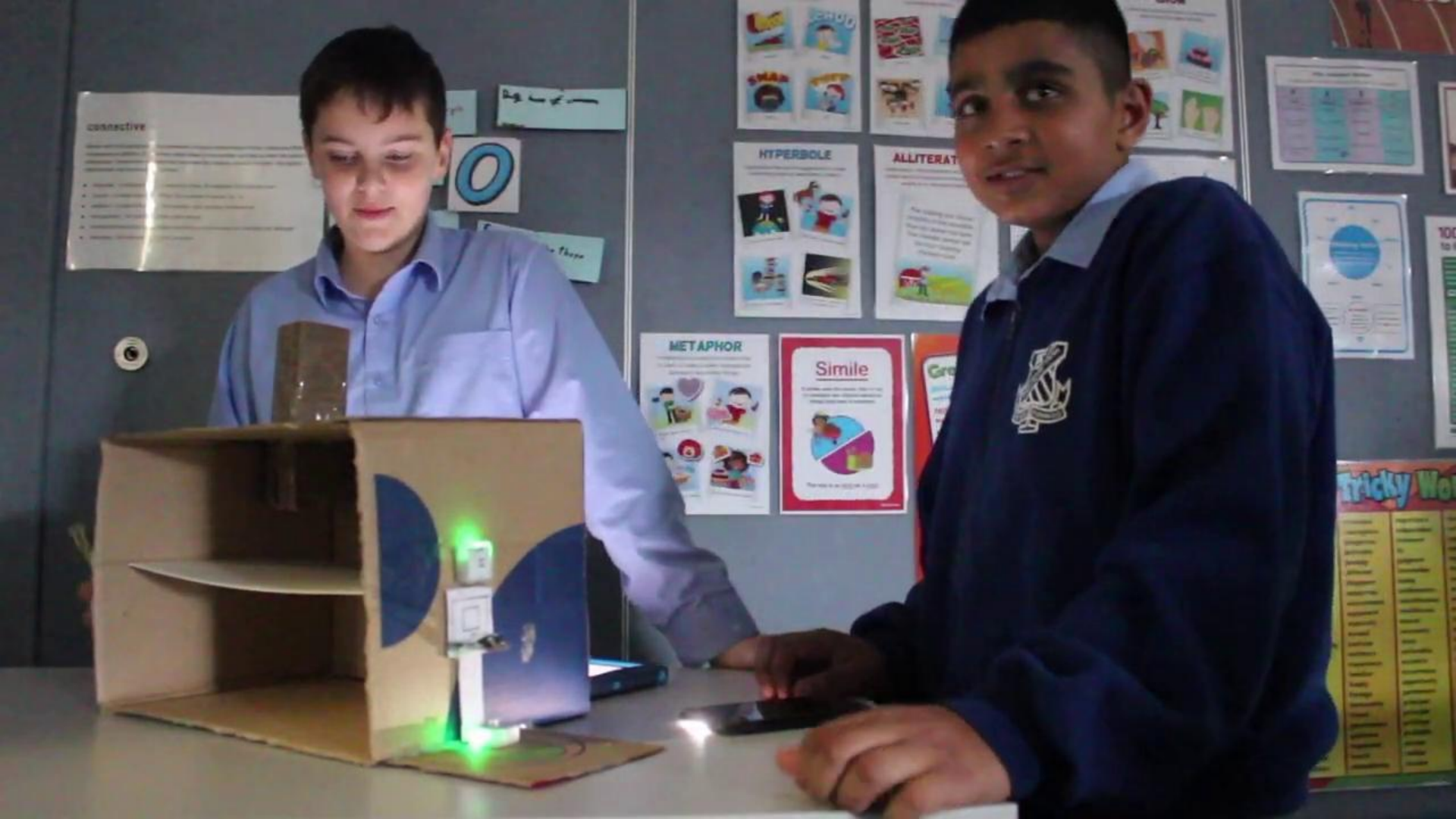

connective
HYPERBOLE
SNAP
Initially


connective
HYPERBOLE
ALLITERATION
Grammar Glossary


HYPERBOLE
ALLITERATION
METAPHOR
Simile


HYPERBOLE
ALLITERATION
Simile


connective
HYPERBOLE
METAPHOR
Simile


HYPERBOLE
ALLITERATION
Grammar Glossary
Worried
Instantly:


connective
HYPERBOLE


connective
Instantly.
ALLITERATION

Electricity and Circuits: We asked 6M to tell us what they learnt about electricity and what they enjoyed most about this unit of work? Some of this knowledge was gained during learning from home.

- How to produce electricity
- I learnt and understood how you can make a light switch and how to connect a wire to make light.
- Finally getting another light to work!
- How to conduct electricity.
- Making the electric house
- I learnt how to build a circuit - my favorite part was building the house
- Yes, I enjoyed this unit and I learnt about lots of things like about the natural sources of electricity.
- Building circuits.
- I learnt that some simple resources can make light.
- I liked learning about how to connect wires together and make it light up.
- The most fun thing was, when we were building our houses and experimenting with light circuits.
- I learned how to build a house and connect wires. I enjoyed building the house.
- I learnt that electricity can produce heat and light energy. My favourite part was when we built the circuit.
- i enjoyed making the houses and wiring the lights.
- I liked when we made the electrical circuits.
- Some things I learned were how to use electricity without pollution, and how to build a house and connect lights to make a switch. Also, about people that have built towers with a few materials and made electricity and much more. The thing I enjoyed most about this unit of work was getting to experiment with different items to create electricity.
- I enjoyed making the LED robot pic :D
- How to use a button battery and LED to generate light.
- I learnt how to make a circuit and I enjoyed the house and circuit activities.
- I enjoyed the stem project and I learnt how to wire up a house.
- I enjoyed wiring things up to make the lights work and learning about electricity and EXPERIMENTING!