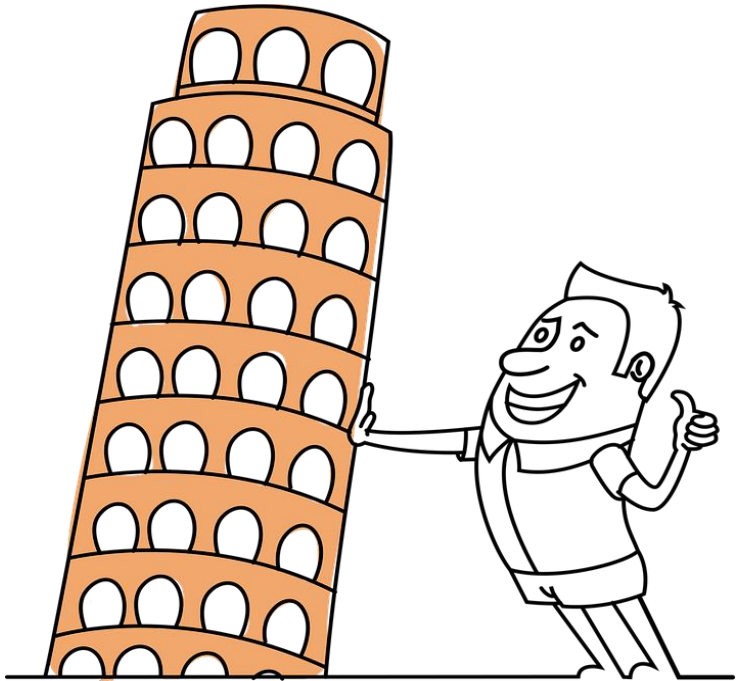
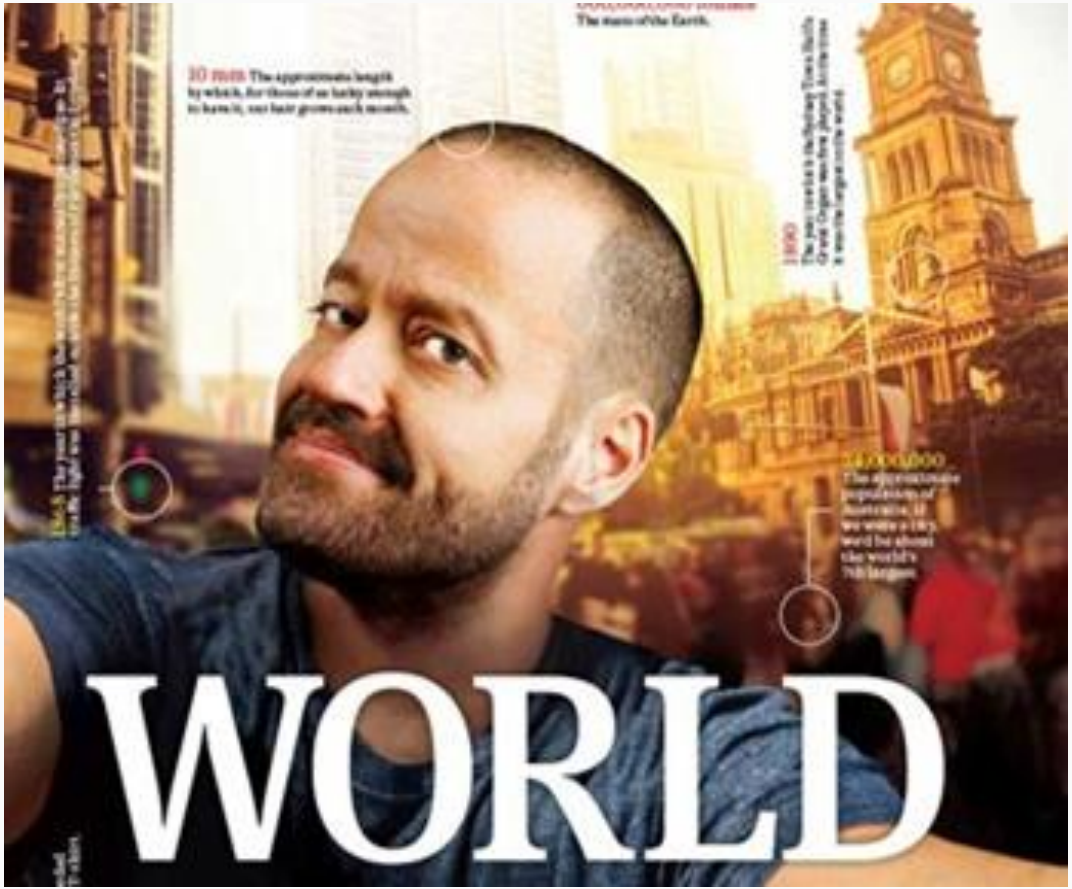
The First Year of STEM at an Australian Primary School: Promise and Uncertainty

Markus Powling

PISA



Adam Spencer’s Science Revolution



STEM @ St Mary's, North Sydney

Environment

Timetable

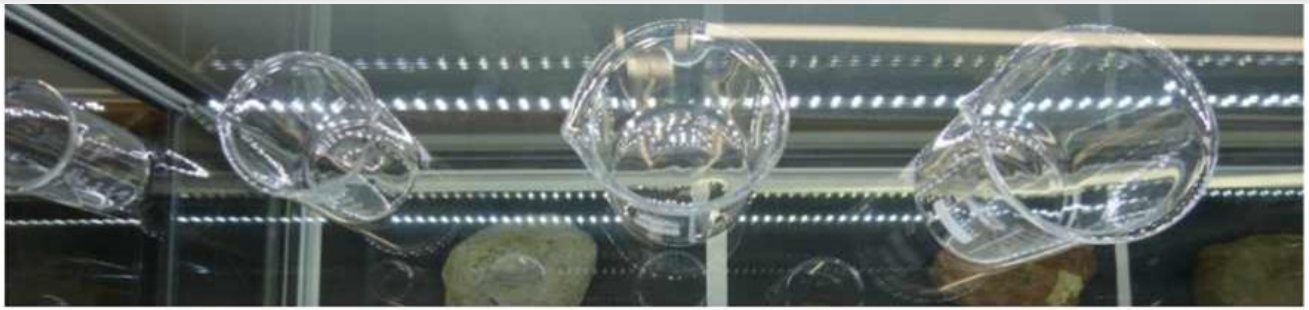
Curriculum

Resources

Foyer Area

Year 5 recording growth of seedlings

www.handsupnow.com



Stage 1 (Grades 1 and 2)

Using Lego and other materials, we build from plans or from our imaginations. There are constraints in timing and materials which make the task more difficult. How accurately can we follow someone else's instructions? Is our model a good representation? To what extent is it functional, beautiful or original?

We develop knowledge, understanding of and skills in applying the processes of Working Technologically. We will work collaboratively, make plans, carry out building work, and reflect on its success.

Stage 2 (Grades 3 and 4)

What is life? How can living things be grouped? How can we describe the life cycle of some plants and animals? These are questions we will consider in our classes this term.

Students will have the opportunity to plant seeds. They will observe and record their growth. Powerful magnifying glasses will help us observe creatures such as snails and worms so that we can better identify their features. The magnifying glasses will also be used to observe closely the structure of flowers. We will learn how the flower plays an important role in the life cycle of some plants.

Stage 3 (Grades 5 and 6)

We will learn about three states of matter: solids, liquids and gases. In the first instance, there will be activities involving water as a liquid which can, with heating or cooling, become steam or ice. There are plans to demonstrate the sublimation of dry ice.

Some changes to materials are reversible while others are not. We will have the chance to reflect on this as we dissolve substances in water. We may also melt or burn some materials and observe the results.

This term, we have our first STEM excursion -- a visit to the Australian Museum's Science Festival!

Year 6 Students' Reflections on STEM

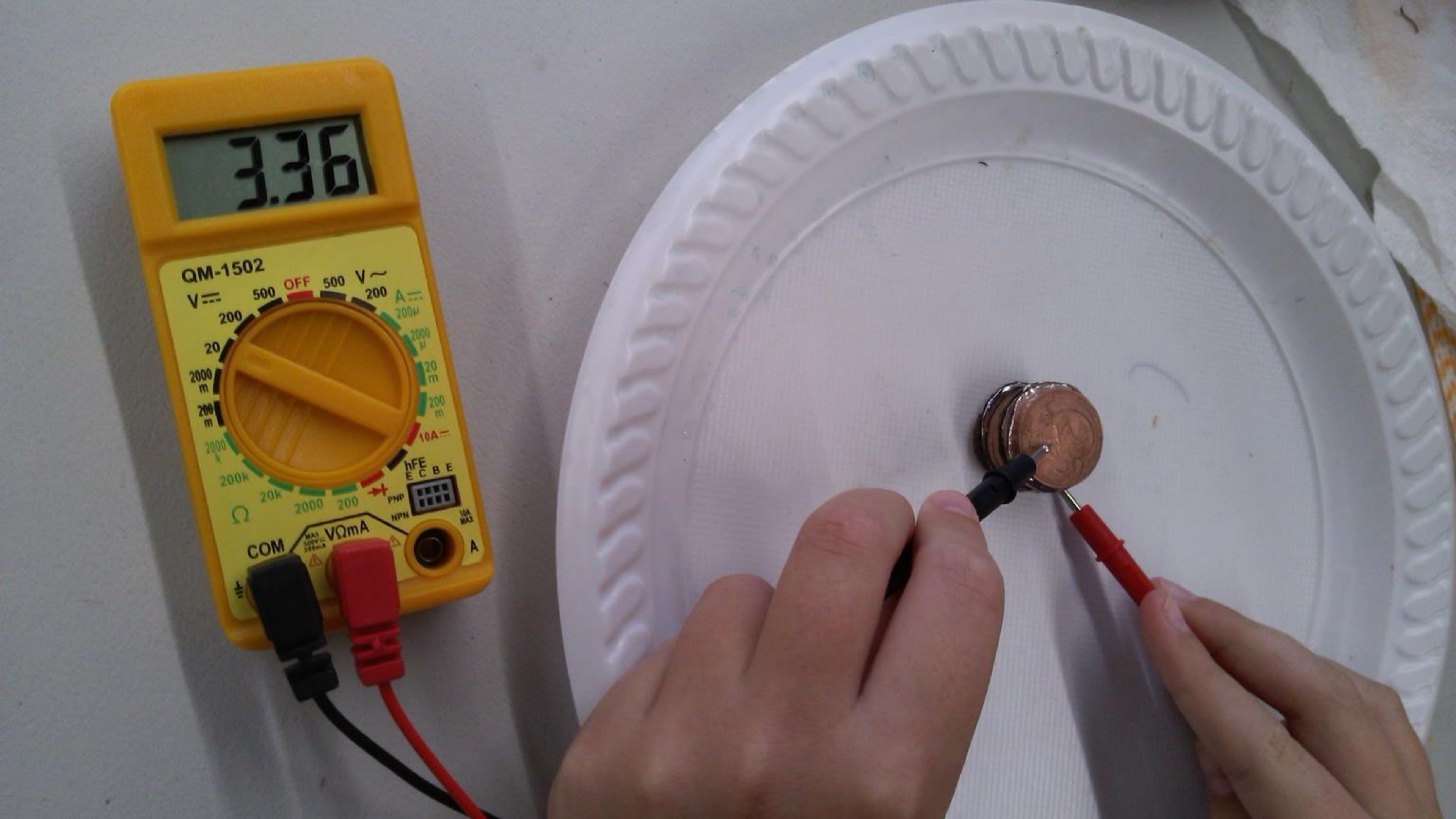
My favourite part of STEM was when we tried to make a tower that could hold a tennis ball. Altogether STEM has been fun and exciting the whole year and I wish I could stay next year to do STEM.

In STEM we have been doing various challenges and experiments … One of this year's highlights was the icosahedron workshop where we created an icosahedron out of straws and masking tape.

I enjoyed the experiments when we got to hold baby chickens and when we ran a [model] steam engine. I think all schools should have STEM because it is such a fantastic subject that I know all children would enjoy.

STEM is an amazing subject. I enjoy doing all the interesting experiments, from building a paper bridge that holds coins, to melting different substances.

I feel in STEM I can think more clearly as it opens up my true academic self.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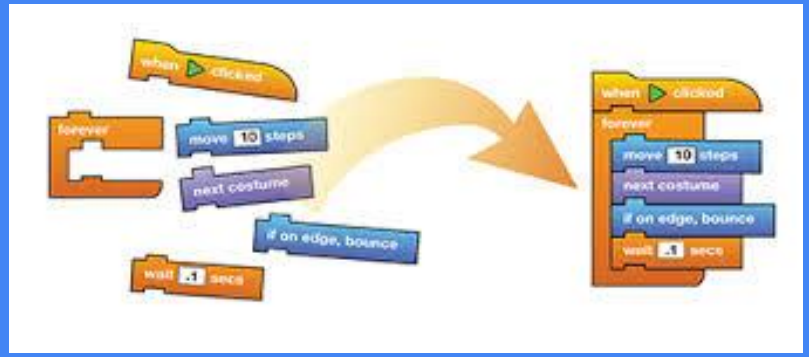
Parent Night

Three Areas of Uncertainty

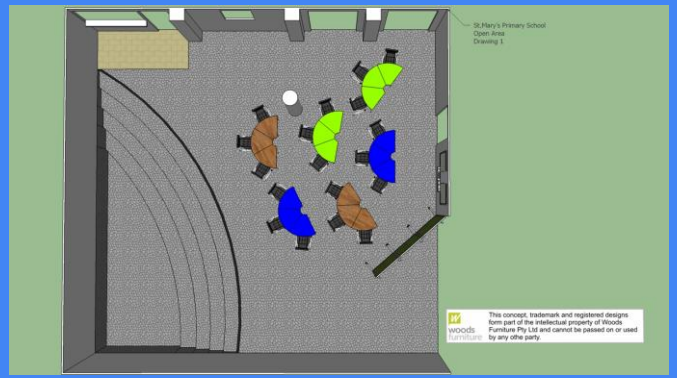
1. Two Pedagogical Cultures

Frank Crowther

2. Alternative Visions of STEM



3. The Development of STEM



Thank you.