



**ON
AIR**
PlayUP



Join the PlayUP team
as they make

EXPERIMENTAL BOATS

to celebrate

NATIONAL SCIENCE WEEK!



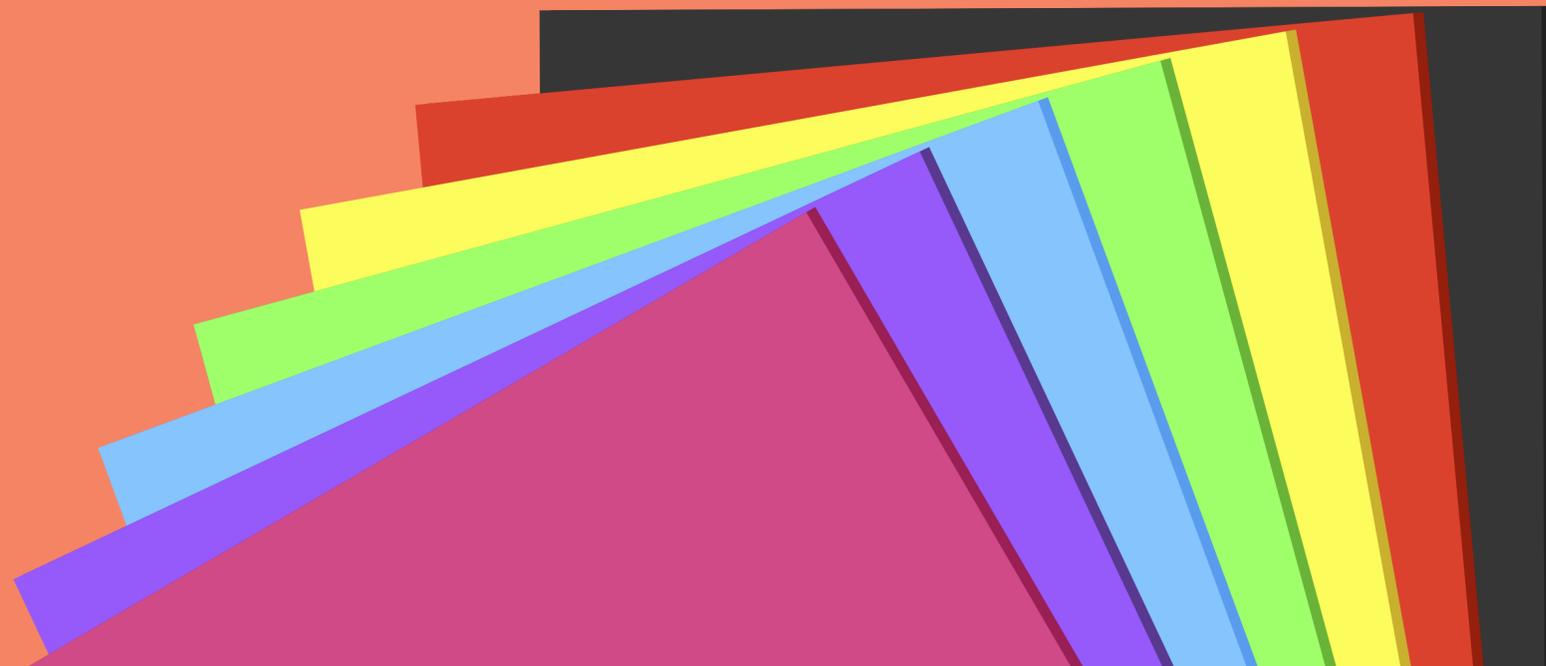
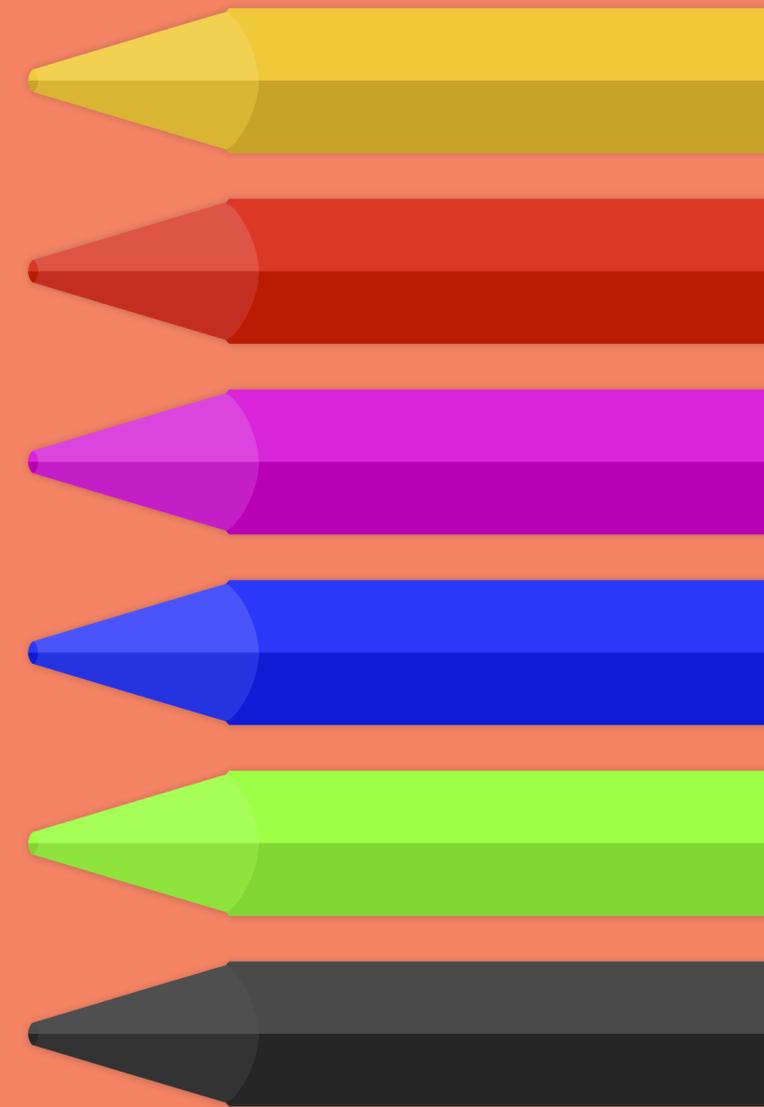
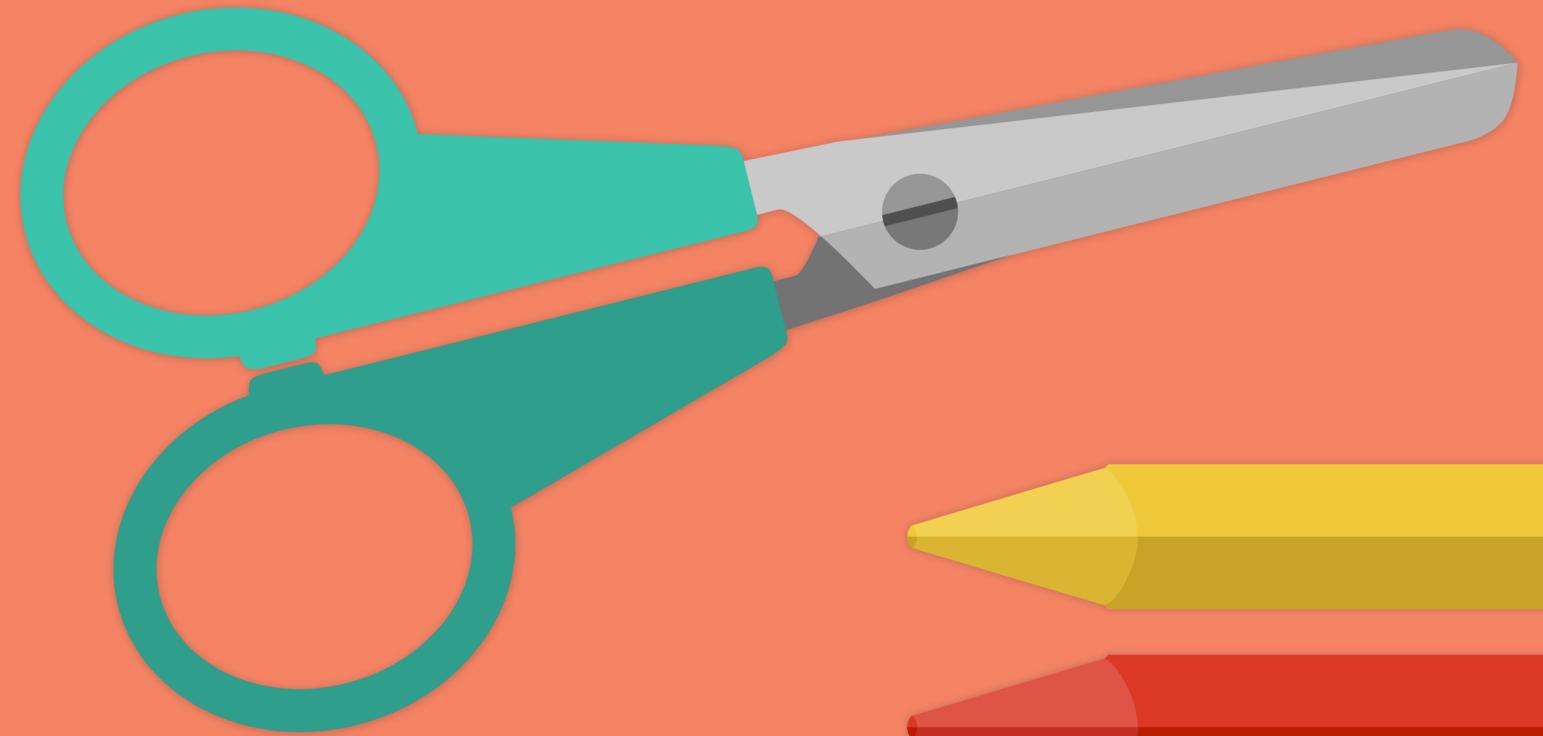
National Science Week is a time for everyone to talk science, see science and do science. Scientists ask big questions and search for answers about our world and the universe. This is a week to celebrate all scientists and don your imaginary lab coats. What questions and answers will you seek?

Australian scientists have helped us to learn about our bodies, space, the environment and more.

Did you know there have been scientists here for over 60,000 years? Some of the world's first scientists were from Aboriginal and Torres Strait Islander communities.

Materials

- Aluminium foil
- Recyclable materials
- Paper or cardboard
- **Scissors** (please be careful with these)
- **Crayons/textas/pencils**
- **Glue stick or sticky tape**



Instructions

1. Craft the hull, or body, of your boat. Select a waterproof item of recycling (like a milk bottle) or mould a boat hull from foil. Make sure your boat is waterproof. Use tape or foil to fix any leaky gaps.
2. Design something to make your boat move. You could make a sail or a cabin with solar panels on the roof.
 - a. To make a sail, roll a thin tube of paper for the mast and attach paper to make a sail.
 - b. To make a cabin with solar panels, bend a rectangular piece of paper or cardboard over the hull of your boat and stick to either side. Stick or draw on solar panels.
3. Decorate your boat. Does it need a flag, a life buoy, or racing stripes? You could make a paper scientist to sit inside.
4. Prepare a body of water and start experimenting.
 - a. Does your boat float?
 - b. How much can your boat carry? Add small items to your boat one by one to find out. Try rocks, marbles or building blocks.
 - c. How fast can your boat go? Can you blow your boat across the water?

Keep crafting:

- What have you discovered?
- How would you make your boat stronger or faster next time?



Fun at Home

Drink a volcano!



You will need:

- Soft drink or soda water
- Ice-cream
- Spoon
- Tall glass
- Paper towels or a cloth to clean up any mess

1. Fill your glass with soft drink until it's three-quarters full.
2. Prepare a spoon of ice-cream and get ready to see what happens when you drop the ice-cream into the glass of soft drink...a volcano!

Try the experiment again, but this time, try making your volcano drink by adding the ice-cream first and then the soft drink. Which method creates more lava?



Paper Strength Experiment

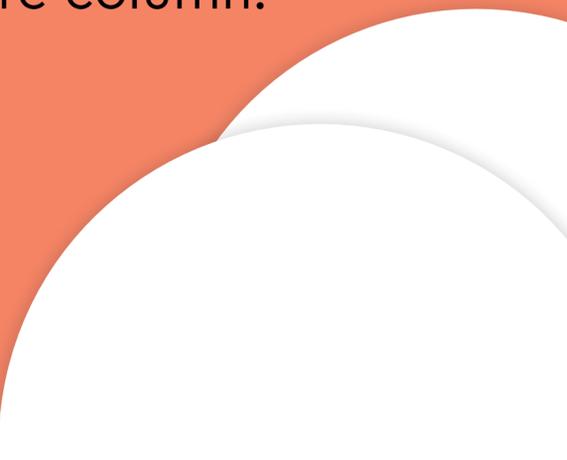


**Which paper shape is the strongest?
All you need is three pieces of paper,
sticky tape and some books.**

Step 1: To begin your experiment, use the three pieces of paper to create different-shaped columns:

- A circular column – roll the paper to create a column (like a toilet roll) and secure with sticky tape.
- A triangular column – fold your paper to create a triangular column and secure with sticky tape.
- A square column – fold your paper to create a square column and secure with sticky tape.

Step 2: Now it's time to test the strength of your paper columns. Stand the paper columns up on a table or another flat surface.

- Start by testing the circular column – carefully place one book on top, does it collapse? Can you add more books? How many books can it hold?
 - Next, try the triangular column – place the same books on top in the same order as you did for the circular column. When does the triangular column collapse? Is it stronger or weaker than the circular column?
 - Repeat your experiment with the square column. What is the result?
 - Which shape holds the most books?
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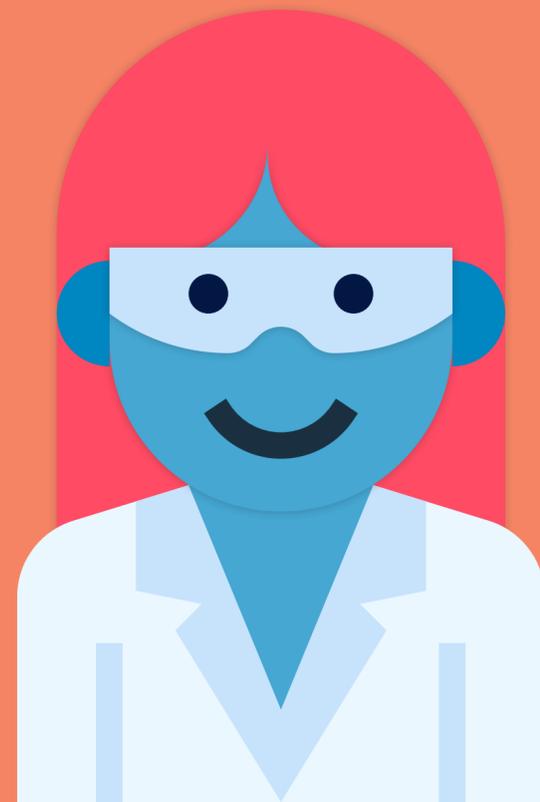
Pepper Germs Experiment

Why do we need to wash our hands to help stop the spread of viruses and other germs? Science can show us!

Put your imaginary lab coat on and try this experiment.

You will need:

- Bowl
- Water
- Pepper
- Soap



Fill the bowl with water. Sprinkle pepper across the surface of the water in a thin layer. In this experiment the pepper represents germs.

Test One: What happens when you dip one finger in the water? Do the pepper germs move away, or do you have pepper germs on your finger?

Test Two: Now, rub some soap on your finger. Dip your finger back in the water. Do the pepper germs move away, or do you have pepper germs on your finger?

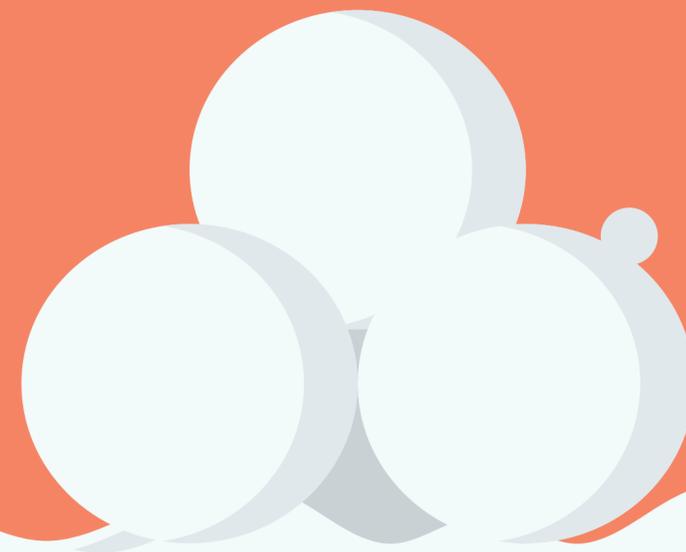
Keep experimenting: Try again using different kinds of soap. What happens if you use bubble bath or dish washing liquid? What happens if you drop soap directly into the bowl?

Snowball Experiment

Make your own snow with just 1 cup of cornflour and 1 cup of shaving cream!

1. In a bowl, fold the shaving cream into the cornflour. You can even add 5-10 drops of food colouring to make colourful snow.
2. Mix until it looks like grated cheese, then use your hands to squish the mixture into a dough.

3. If your mixture is too sticky, add some more cornflour. If it won't stick together add a little more shaving cream.
4. That's it! What shapes will you make out of your snow?



Books

Title	Authors/Illustrator
<i>Ada Twist, Scientist</i>	by Andrea Beaty
<i>The Watcher: Jane Goodall's Life with Chimps</i>	by Jeanette Winter
<i>Scientist, Scientist, What Do You See?</i>	by Chris Ferrie
<i>Young Dark Emu</i>	by Bruce Pascoe
<i>Quantum Physics for Babies</i>	by Chris Ferrie
<i>Little People, Big Dream: Marie Curie</i>	by Isabel Sanchez Vegara and Frau Isa
<i>Women in Science: 50 Fearless Pioneers Who Changed the World</i>	by Rachel Ignotofsky

Learn to spell and write tricky words with Learn A Word: <https://iview.abc.net.au/show/learn-a-word>

Here are more science experiments you can do at home: <https://www.natgeokids.com/au/discover/science/nature/science-experiments-for-kids/>

Here's an experiment for fireworks in a jar. (Don't worry, they're not real fireworks. But they're still impressive.) <https://www.youtube.com/watch?v=a0eEFwnN16g>

Learn More

www.scienceweek.net.au/

www.natgeokids.com/au/category/discover/science/

www.narragunnawali.org.au/storage/media/professional-learning/science-resource-guide-725f400019.pdf

ABC Kids Early Education STEM videos:

www.abc.net.au/abckids/early-education/stem/

Are you in Canberra during August?
Check out this special satellite selfie
event for National Science Week:

<https://inspiringtheact.org.au/satellite-selfie/>

[Links to the Early Learning Framework](#)
[- Belonging, Being and Becoming](#)

Outcome 2: Children are connected with and contribute to their world:

- Children become socially responsible and show respect for the environment

Outcome 4: Children are confident and involved learners:

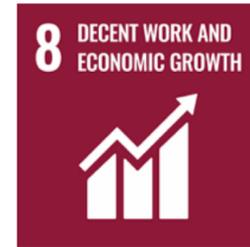
- Children develop dispositions for learning such as curiosity, cooperation, confidence, creativity, commitment, enthusiasm, persistence, imagination and reflexivity
- Children develop a range of skills and processes such as problem solving, inquiry, experimentation, hypothesising, researching and investigating
- Children resource their own learning through connecting with people, place, technologies and natural and processed materials.

Learn More

[Links to the Australian Curriculum](#)

Critical and Creative Thinking Levels 1-3

- Inquiring: identifying, exploring and organising information and ideas – pose questions; identify and clarify information and ideas
- Generating ideas, possibilities and actions – consider alternatives; seek solutions and put ideas into action
- Analysing, synthesising and evaluating reasoning and procedures—draw conclusions and design a course of action; evaluate procedures and outcomes



Aligns with United Nations Sustainable Development Goal 8.2

Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors



Aligns with the United Nations Sustainable Development Goal 9

Innovation and technological progress are key to finding lasting solutions to both economic and environmental challenges, such as increased resource and energy-efficiency.

SUSTAINABLE DEVELOPMENT GOALS

ON AIR PlayUP

**Don't forget to tune
into On Air PlayUP next
Wednesday for more fun.**



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