Science

WORK SAMPLE PORTFOLIOS

These work sample portfolios have been designed to illustrate satisfactory achievement in the relevant aspects of the achievement standard.

The December 2011 work sample portfolios are a resource to support planning and implementation of the Foundation to Year 10 Australian Curriculum in English, Mathematics, Science and History during 2012. They comprise collections of different students' work annotated to highlight evidence of student learning of different aspects of the achievement standard.

The work samples vary in terms of how much time was available to complete the task or the degree of scaffolding provided by the teacher.

There is no pre-determined number of samples required in a portfolio nor are the work samples sequenced in any particular order. These initial work sample portfolios do not constitute a complete set of work samples - they provide evidence of most (but not necessarily all) aspects of the achievement standard.

As the Australian Curriculum in English, Mathematics, Science and History is implemented by schools in 2012, the work sample portfolios will be reviewed and enhanced by drawing on classroom practice and will reflect a more systematic collection of evidence from teaching and learning programs.

THIS PORTFOLIO – YEAR 6 SCIENCE

This portfolio comprises a number of work samples drawn from a range of assessment tasks, namely:

Sample 1	Investigation report – Designing and electrical switch
Sample 2	Pamphlet – Famous scientists
Sample 3	Independent report – Bouncing balls
Sample 4	Design report – Tsunami safety system
Sample 5	Persuasive text – Which disaster is the worst?
Sample 6	Worksheet – Reversible and irreversible change
Sample 7	Investigation report – Plant growth

In this portfolio, the student constructs an electrical switch and identifies the requirements for the transfer of energy in an electrical circuit (WS1). The student explains how tsunamis and earthquakes cause rapid change to Earth's surface and predicts likely effects of these events (WS4, WS5), explaining how scientific knowledge is used in decision-making to reduce impacts on human communities (WS5). The student classifies changes to materials as irreversible and reversible (WS6) and demonstrates understanding that living things are affected by environmental conditions (WS7). The student researches two famous scientists from different backgrounds and identifies how these scientists contributed to the development of science and to improving the lives of many people (WS2).

Science

The student demonstrates the ability to follow procedures to develop investigable questions (WS3, WS7) and design investigations into simple cause and effect relationships, including identifying variables to be changed and measured (WS7) and articulates potential safety risks when planning their investigation methods (WS1). The student collects, organises and interprets investigation data (WS1, WS2, WS3, WS5, WS7) and identifies where improvements to their methods could improve the data (WS1, WS3, WS4, WS7). The student constructs multi-modal texts to communicate ideas, methods and findings (WS1, WS2, WS3, WS4).

The following aspects of the achievement standard are not evident in this portfolio:

- *describe how energy can be transformed from one form to another to generate electricity*
- *describe and analyse relationships in data using graphic representations.*

Science

Work sample 1:
Investigation report – Designing an electrical switch

Relevant parts of the achievement standard

By the end of Year 6, students compare and classify different types of observable changes to materials. They analyse requirements for the transfer of electricity and describe how energy can be transformed from one form to another to generate electricity. They explain how natural events cause rapid change to the Earth's surface. They describe and predict the effect of environmental changes on individual living things. Students explain how scientific knowledge is used in decision making and identify contributions to the development of science by people from a range of cultures.

Students follow procedures to develop investigable questions and design investigations into simple cause-and-effect relationships. They identify variables to be changed and measured and describe potential safety risks when planning methods. They collect, organise and interpret their data, identifying where improvements to their methods or research could improve the data. They describe and analyse relationships in data using graphic representations and construct multi-modal texts to communicate ideas, methods and findings.

Summary of task

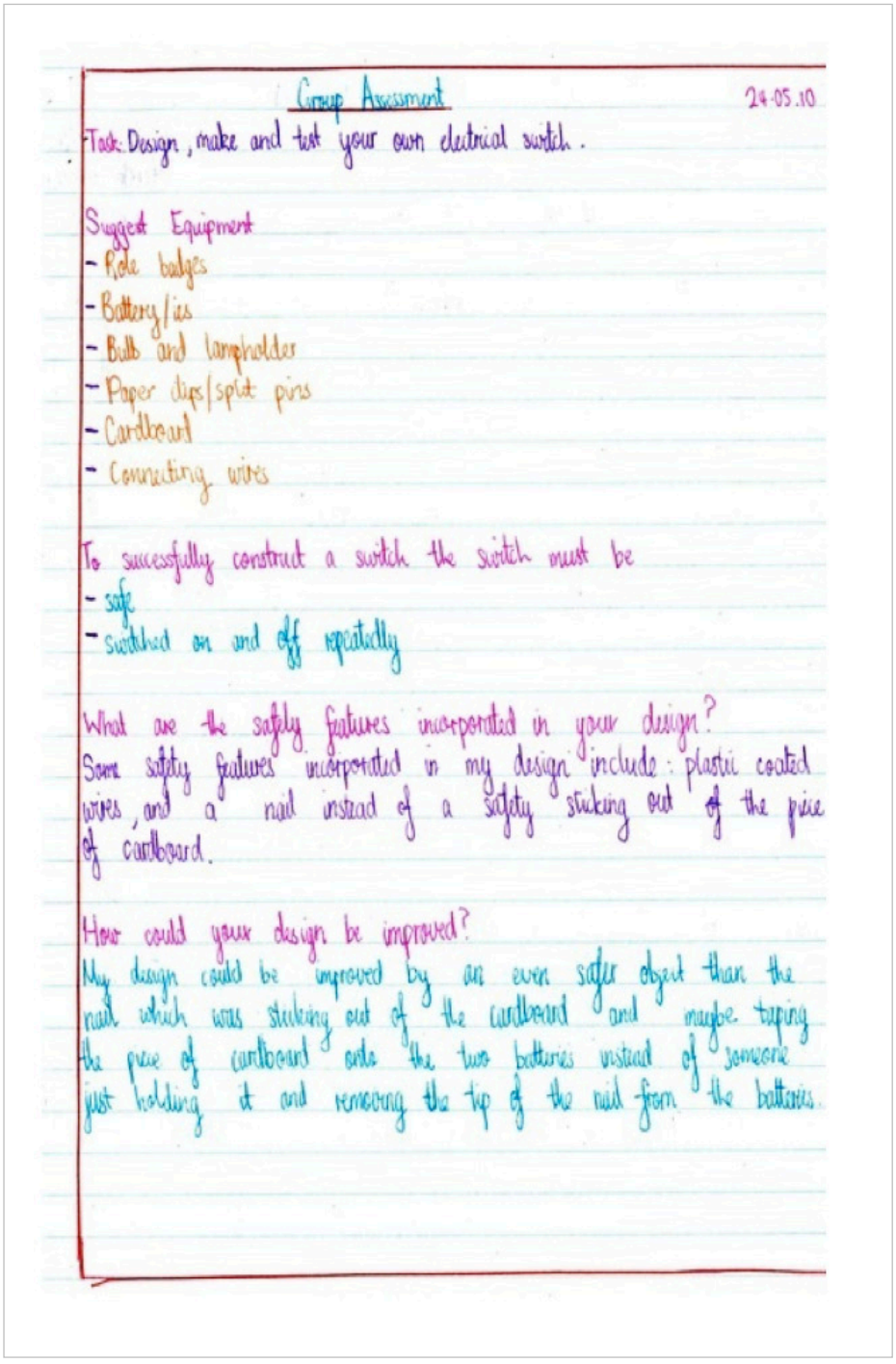
Students studied a unit of work on electrical energy. Students had explored construction of electrical circuits. The teacher had discussed safety precautions with the class. The low voltage light bulbs and batteries used in this investigation were safe to touch and cannot draw large currents or reach hazardous temperatures. The glass bulbs were relatively strong but had to be handled with care to avoid breakage.

Students were asked to design and make their own electrical switch. They were asked to:

- design an electrical switch that is both safe and able to be switched on and off repeatedly
- represent their design in a diagram
- build the electrical switch
- test the success of their electrical switch
- reflect on the design of their electrical switch and make recommendations for improvement
- communicate the findings in a report.

Science

Work sample 1:
Investigation report – Designing an electrical switch



Group Assessment 24.05.10

Task: Design, make and test your own electrical switch.

Suggest Equipment
- Role badges
- Battery/ies
- Bulb and lampholder
- Paper clips/split pins
- Cardboard
- Connecting wires

To successfully construct a switch the switch must be
- safe
- switched on and off repeatedly

What are the safety features incorporated in your design?
Some safety features incorporated in my design include: plastic coated wires, and a nail instead of a safety sticking out of the piece of cardboard.

How could your design be improved?
My design could be improved by an even safer object than the nail which was sticking out of the cardboard and maybe taping the piece of cardboard onto the two batteries instead of someone just holding it and removing the tip of the nail from the batteries.

Annotations

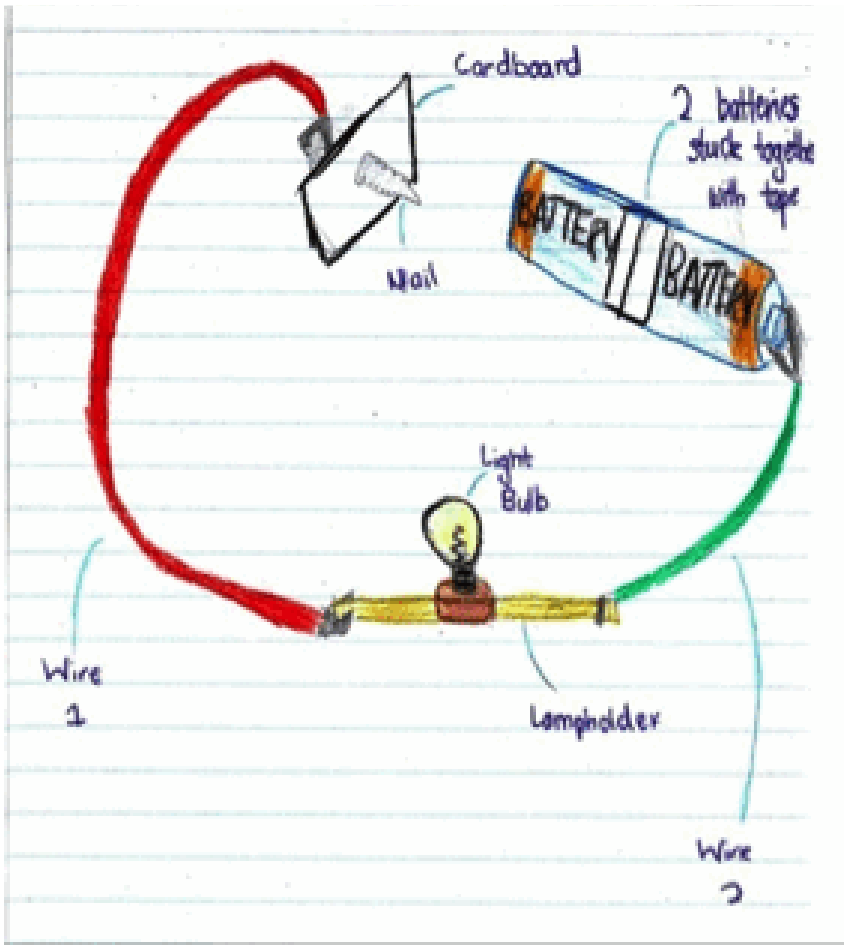
Identifies equipment required for transfer of electricity.

Identifies how safety was considered in the design.

Indicates where improvements to the method could be made.

Science

Work sample 1:
Investigation report – Designing an electrical switch



Annotations

Communicates ideas using labelled graphic representations and text.

Identifies components required for transfer of electricity.

Incorporates visual texts to illustrate results.

Acknowledgment
ACARA acknowledges the contribution of the trial school teachers and students for providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

Science

Work sample 2:
Pamphlet – Famous scientists

Relevant parts of the achievement standard

By the end of Year 6, students compare and classify different types of observable changes to materials. They analyse requirements for the transfer of electricity and describe how energy can be transformed from one form to another to generate electricity. They explain how natural events cause rapid change to the Earth's surface. They describe and predict the effect of environmental changes on individual living things. Students explain how scientific knowledge is used in decision making and identify contributions to the development of science by people from a range of cultures.

Students follow procedures to develop investigable questions and design investigations into simple cause-and-effect relationships. They identify variables to be changed and measured and describe potential safety risks when planning methods. They collect, organise and interpret their data, identifying where improvements to their methods or research could improve the data. They describe and analyse relationships in data using graphic representations and construct multi-modal texts to communicate ideas, methods and findings.

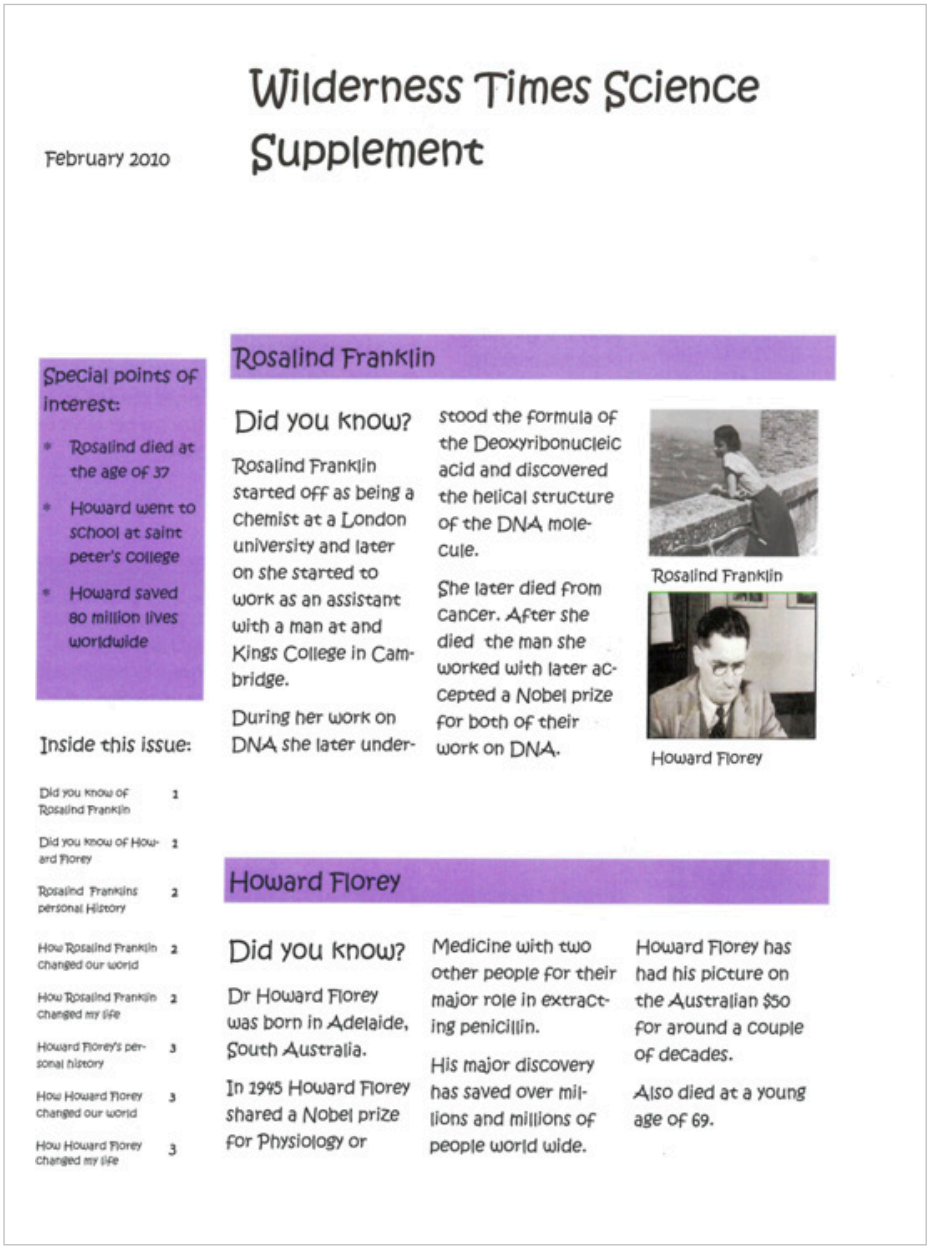
Summary of task

Students had completed a unit exploring notable contributors to the development of science.

Students were asked to research two different 'amazing' people in science, one Australian and one not. They were required to research the scientists' lives, evalutate the contribution of the work of the scientist and relect on the impact these people have had on their lives. They were given the choice of how to present their work. This student produced an illustrated pamphlet.

Science

Work sample 2:
Pamphlet – Famous scientists



Wilderness Times Science Supplement

February 2010

Special points of interest:

- Rosalind died at the age of 37
- Howard went to school at saint peter's college
- Howard saved 80 million lives worldwide

Inside this issue:

Rosalind Franklin

Did you know?

Rosalind Franklin started off as being a chemist at a London university and later on she started to work as an assistant with a man at and Kings College in Cambridge.

During her work on DNA she later understood the formula of the Deoxyribonucleic acid and discovered the helical structure of the DNA molecule.

She later died from cancer. After she died the man she worked with later accepted a Nobel prize for both of their work on DNA.

Rosalind Franklin

Howard Florey

Howard Florey

Did you know?

Dr Howard Florey was born in Adelaide, South Australia.

In 1945 Howard Florey shared a Nobel prize for Physiology or Medicine with two other people for their major role in extracting penicillin.

His major discovery has saved over millions and millions of people world wide.

Howard Florey has had his picture on the Australian $50 for around a couple of decades.

Also died at a young age of 69.

Annotations

Identifies contributions to the development of science by people from different backgrounds.

Science

Work sample 2:
Pamphlet – Famous scientists

Rosalind Franklin

Did you know?

That Rosalind Franklin died at the young age of 37.

Rosalind Franklin's Personal History

Rosalind Franklin was born in 1920 and died in 1958.

Later on in her life she had many jobs such as a British biophysicist, physicist, chemist, biologist, X-ray crystallographer and also a Chemist at London University.

Then she became an assistant to John Randall along side Maurice Wilkins at King's College at Cambridge. During her work with John Randall she later understood the formula called Deoxyribonucleic acid.

She later discovered the helical structure of the DNA molecule .

At a very young age she died of a cancer called ovarian cancer.

After her death John Randall later accepted the Nobel prize for her work on DNA.

Rosalind Franklin's Contribution to our world

Rosalind Franklin has made a really big contribution to the world by discovering what DNA looks like and this helps by curing many diseases and identifying what type of disease it is and so on.

If Rosalind Franklin didn't discover DNA the world would not have enough medicine to go round and diseases would not have cures and many people would die.

So Rosalind Franklin had made a big discovery by helping people understand the way of DNA and cures for diseases.

How Rosalind Franklin changed my life

Rosalind Franklin has changed my life by finding cures for diseases. If she didn't discover the structure of DNA and if I had a disease that no body knew about or had heard of it I would probably be very sick or of even dead.

Annotations

Identifies how research contributed to improving people's lives.

Science

Work sample 2:
Pamphlet – Famous scientists

Howard Florey

Howard Florey's Personal History

Howard Florey was born in Adelaide , South Australia 1898 and died in 1968.

At the University of Adelaide he studied medicine.

He had also a couple of jobs such as an Australian pharmacologist and a pathologist.

In 1945 he shared a Nobel prize with Ernst Boris Chain and Sir Alexander Fleming for Physiology or Medicine.

Howard Florey's discovery saved over an amazing 80 million people worldwide.

During 1973 and 1995 Florey had his portrait on the Australian $50 note.

He later died at a young age of 69.

Did you know?

Howard Florey went to Saint Peter's College in Adelaide South Australia.

Howard Florey's Contribution to our world

Howard Florey has made a huge contribution to our world by saving over 80 million people with his powerful and life saving drug penicillin.

If he didn't invent this wonderful medicine a lot of people would not live for a very long time and a lot of people would die to sickness very quickly.

His huge discovery is one of the biggest breakthroughs in medical history in the world.

How Howard Florey has changed my life

Howard Florey has changed my life because every time I have an infection I always use penicillin and if that wasn't around I would become really sick or maybe even die because of maybe really little things. If penicillin wasn't invented there would be millions of deaths every week or maybe even every day.

Annotations

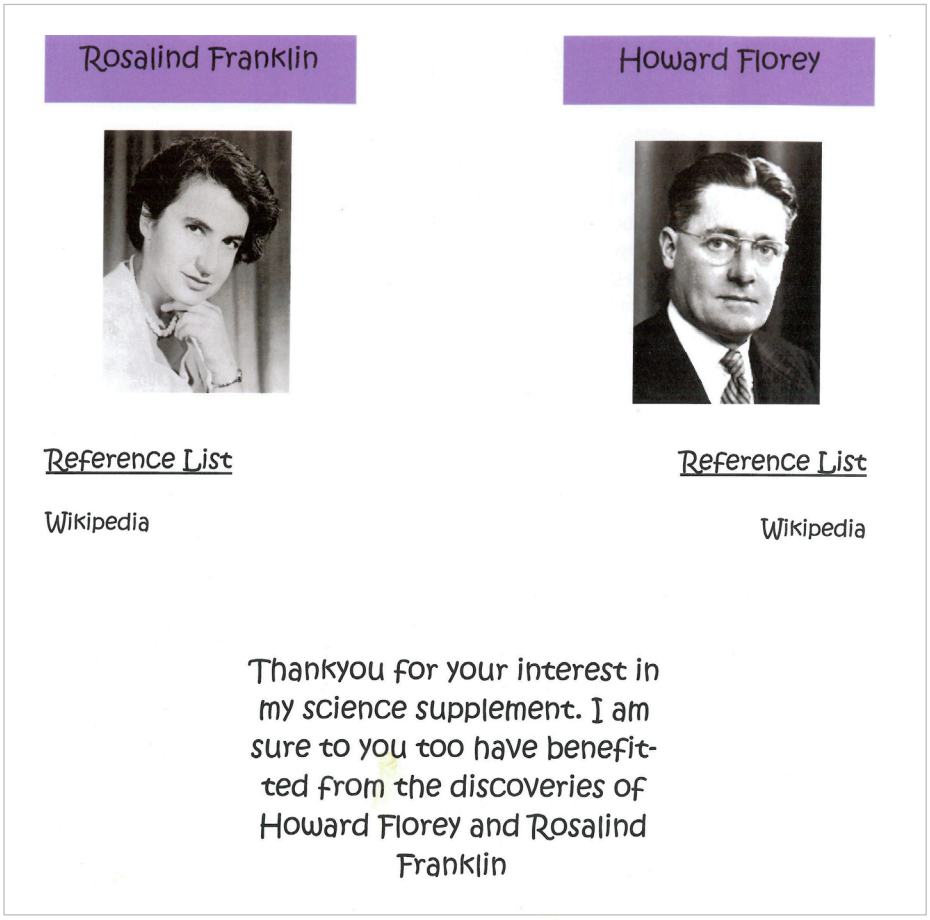
Describes the life of Howard Florey, including how his discoveries have affected people's lives.

Uses clear language including the appropriate use of scientific terms.

Identifies how scientific research has global impacts.

Science

Work sample 2:
Pamphlet – Famous scientists



Annotations

Annotations (Overview)

This work sample demonstrates an understanding of research through the collection, interpretation and organisation of data in response to the research question. The sample communicates ideas through a multimodal text.

Acknowledgment
ACARA acknowledges the contribution of the trial school teachers and students for providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

Science

Work sample 3:
Investigation report – Bouncing balls

Relevant parts of the achievement standard

By the end of Year 6, students compare and classify different types of observable changes to materials. They analyse requirements for the transfer of electricity and describe how energy can be transformed from one form to another to generate electricity. They explain how natural events cause rapid change to the Earth's surface. They describe and predict the effect of environmental changes on individual living things. Students explain how scientific knowledge is used in decision making and identify contributions to the development of science by people from a range of cultures.

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Summary of task

Students had engaged with a teacher-led experiment that involved bouncing a variety of balls to test how high they bounced.

Students worked in pairs to write an introduction and hypothesis for the investigation.

Under teacher supervision, students performed the investigation, which was recorded on video.

The photos were given to students who used them to record the height of each bounce and analyse their data.

Students were asked to work in pairs to produce a report that included their introduction, prediction, results, discussion and conclusion. The report was constructed in class time, with teacher assistance in producing the report as a multi-modal text.

Science

Work sample 3:
Investigation report – Bouncing balls

Introduction

Our science investigation is: 'Which ball bounces the highest?'

Our Problem is: we wanted to play a game where we needed a really bouncy ball other wise the game wouldn't work so we decided to investigate which ball bounces the highest.

Prediction

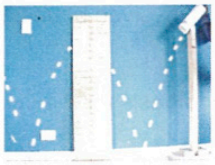
Student 1: I think that the lightest ball (which is the Yellow/ Orange ball) will bounce the highest because it has less weight to push of the ground from.

Student 2: I think that the Yellow Orange ball which is the lightest will bounce the highest because when it goes up in the air from bouncing on the ground it will be lighter than the others so it will probably bounce highest.

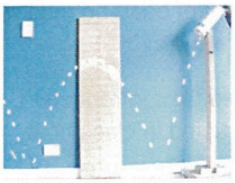
Results

The results are:

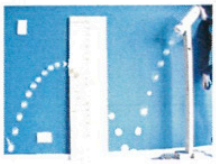
- The Yellow Orange Ball (8g, 25mm diameter) bounced up to 95cm.

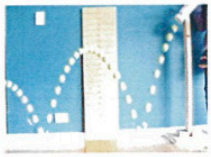


- The Multicoloured (10g, 22mm diameter) and blue mist (8g, 25mm diameter) both bounced up to 85cm.



- The Ferris Wheel (38g,45 mm diameter), High Bounce (45g, 60mm diameter) and Super Bounce (94g, 95mm diameter) all bounced up to 80cm.





Annotations

Identifies the question to be investigated.

Predicts likely outcomes and provides reasons for the prediction.

Organises and presents recorded data.

Describes interpretation of the visual data.

Science

Work sample 3:
Investigation report – Bouncing balls

- The Spiked Ball (70g, 115mm diameter) bounced up to 55cm.

Discussion

Our ball ramp was constructed correctly and produced good results.

We were surprised that some of the bigger sized balls bounced higher than the other littler ones.

Some of the balls didn't fit down our tube so we had to improvise; we decided to attach a plank onto the tube at the correct height and angle so that the balls weren't any different. The measuring board was in a spot that was too sunny so it was hard to see the measurements. If someone else was doing this experiment, we recommend using a bigger pipe and a room that's not too sunny.

In all the photos we noticed a pattern: There were more frames in the middle which means that the balls were spending more time in the middle than they were spending going up, down or even touching the ground.

Our hypothesis was right. The Yellow Orange ball was the lightest and we think that it bounced the highest because it was the lightest. We think that the air could hold the lighter balls up easier than the heavier balls, so that is why we think that the Yellow Orange Ball bounced the highest.

If someone else wanted to investigate further on this experiment they could try:

- Which surface is best for bouncing balls on?
- Which temperature is best to have the balls kept so that they can bounce higher?
- Do different temperatures affect different balls?
- Do different temperatures affect different materials, such as rubber?

Annotations

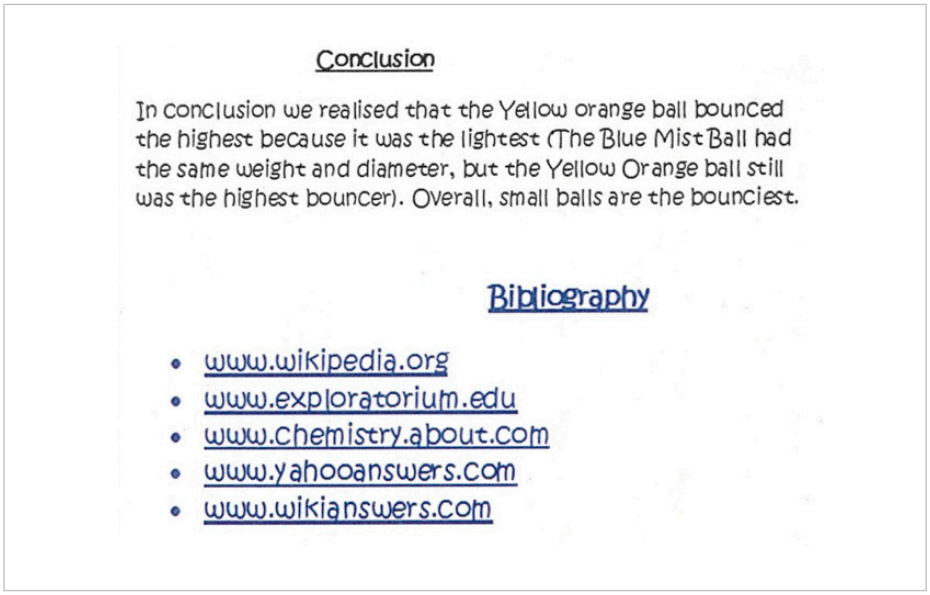
Identifies problems with the method and consequent improvements.

Describes and analyses relationships in data.

Suggests additional questions that could be investigated.

Science

Work sample 3:
Investigation report – Bouncing balls



Conclusion

In conclusion we realised that the Yellow orange ball bounced the highest because it was the lightest (The Blue Mist Ball had the same weight and diameter, but the Yellow Orange ball still was the highest bouncer). Overall, small balls are the bounciest.

Bibliography

- www.wikipedia.org
- www.exploratorium.edu
- www.chemistry.about.com
- www.yahooanswers.com
- www.wikianswers.com

Annotations

Interprets data and uses data to justify conclusion.

Annotations (Overview)

In this work sample, the student communicates ideas, methods and findings through a multimodal text.

Acknowledgment
ACARA acknowledges the contribution of the Department of Education, Tasmania for providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

Science

Work sample 4:
Design report – Tsunami safety system

Relevant parts of the achievement standard

By the end of Year 6, students compare and classify different types of observable changes to materials. They analyse requirements for the transfer of electricity and describe how energy can be transformed from one form to another to generate electricity. They explain how natural events cause rapid change to the Earth's surface. They describe and predict the effect of environmental changes on individual living things. Students explain how scientific knowledge is used in decision making and identify contributions to the development of science by people from a range of cultures.

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Summary of task

Students had completed a unit on natural disasters and the effects they have on Earth's surface and on communities.

Students were asked to individually research

- how earthquakes and tsunamis occur
- whether Australia is prone to such events
- how these events have been managed in the past, and how they could be managed better.

Students were then asked to individually design a safety system that could be used to protect Australia's coast line from the threat of a tsunami. They were asked to construct a model, test their design, revise their design and explain how it had been modified from their original design.

Science

Work sample 4:
Design report – Tsunami safety system

Shaky Ground

Task 1

How do Earthquakes and Tsunamis occur?

Earthquakes are a sudden shaking of the ground caused by the movement of tectonic plates.

Earthquakes occur when 2 plates meet. This is because the plates move. This movement causes stress within the plates.

A tsunami occurs when the tectonic plates under the sea bed move into one another cause one to rise. This causes the water above it to form a tsunami.

Is Australia prone to such events?

Yes on 28th of December 1989, an earthquake measuring 5.5 on the Richter scale hit Newcastle. The epicentre was 15 km south-southwest from the city centre.

How can these events be managed better?

Magnitude measures the amount of energy released during an earthquake. It measures how strong the earthquake was at its focus. The most widely recognised and used forms of measurement for earthquakes is the Richter scale.

Task 2

Design a safety system to protect Australia's coastline

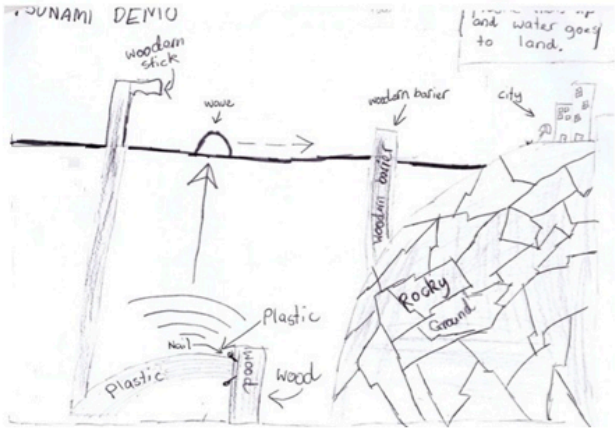
Safety System: Sea Wall

Annotations

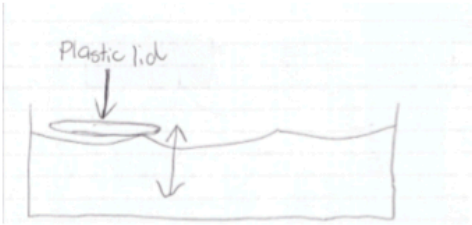
Explains how earthquakes and tsunamis are formed and cause rapid change to Earth's surface.

Science

Work sample 4:
Design report – Tsunami safety system



I will push the plastic up and down to form the wave and I think the wall will stop it.



Task 3

How effective is the above design? What modifications will you make?

My original design was solid and the water would start to go off. My second design will have holes in it to relive the pressure and so the water won't go off.

Annotations

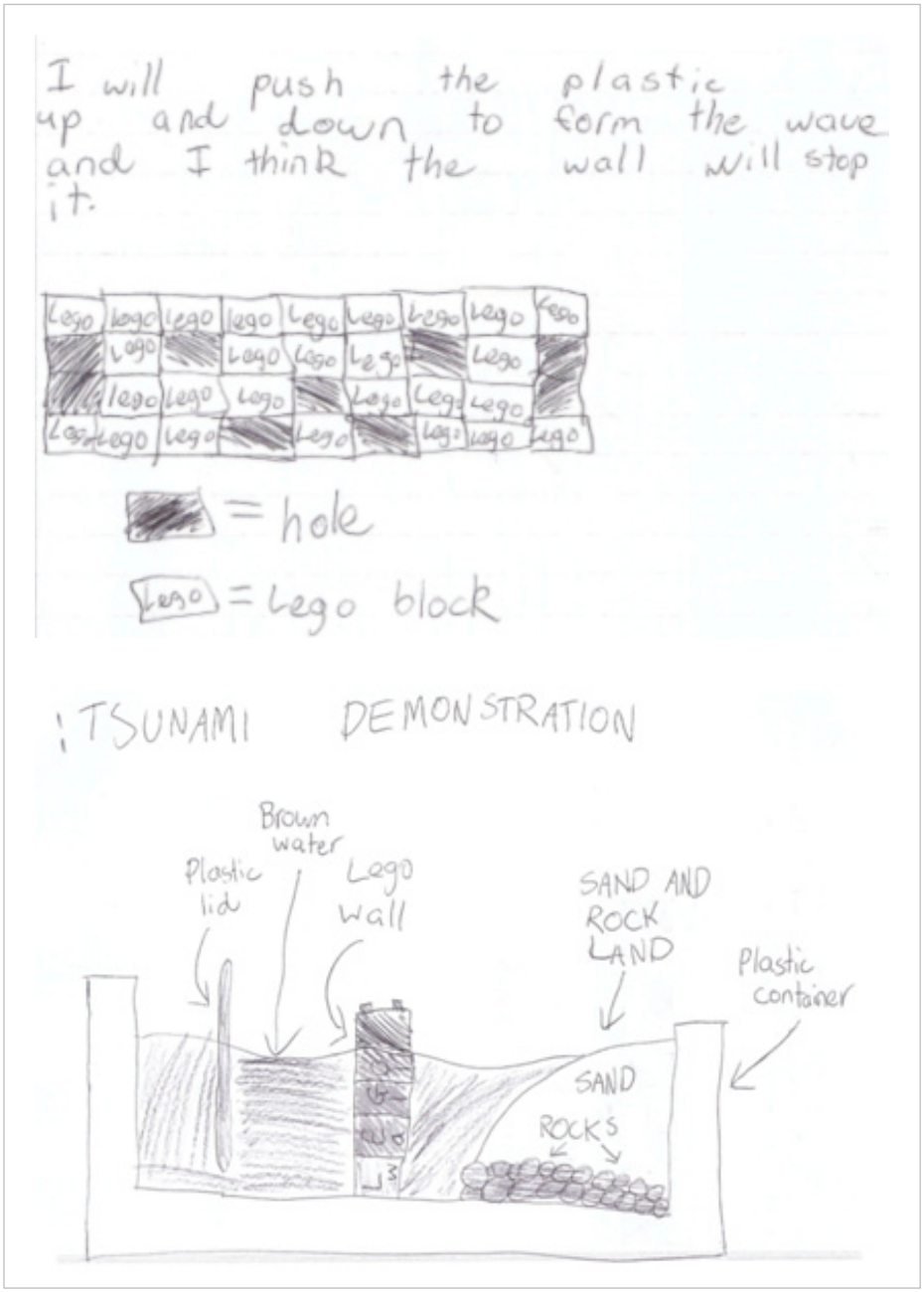
Demonstrates how tsunamis are caused through a labelled diagram.

Illustrates model for wave formation.

Describes modifications to method (wall design) to improve data (reduction in volume of water surging over the wall).

Science

Work sample 4:
Design report – Tsunami safety system



Annotations

Illustrates modified design – inclusion of holes to enable water to pass through the wall.

Illustrates final design showing model of tsunami effects and safety system.

Annotations (Overview)

This work sample communicates ideas through text and labelled diagrams.

Acknowledgment
ACARA acknowledges the contribution of Catholic Education Archdiocese of Brisbane for providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

Science

Work sample 5:
Persuasive text – Which disaster is the worst?

Relevant parts of the achievement standard

By the end of Year 6, students compare and classify different types of observable changes to materials. They analyse requirements for the transfer of electricity and describe how energy can be transformed from one form to another to generate electricity. They explain how natural events cause rapid change to the Earth's surface. They describe and predict the effect of environmental changes on individual living things. Students explain how scientific knowledge is used in decision making and identify contributions to the development of science by people from a range of cultures.

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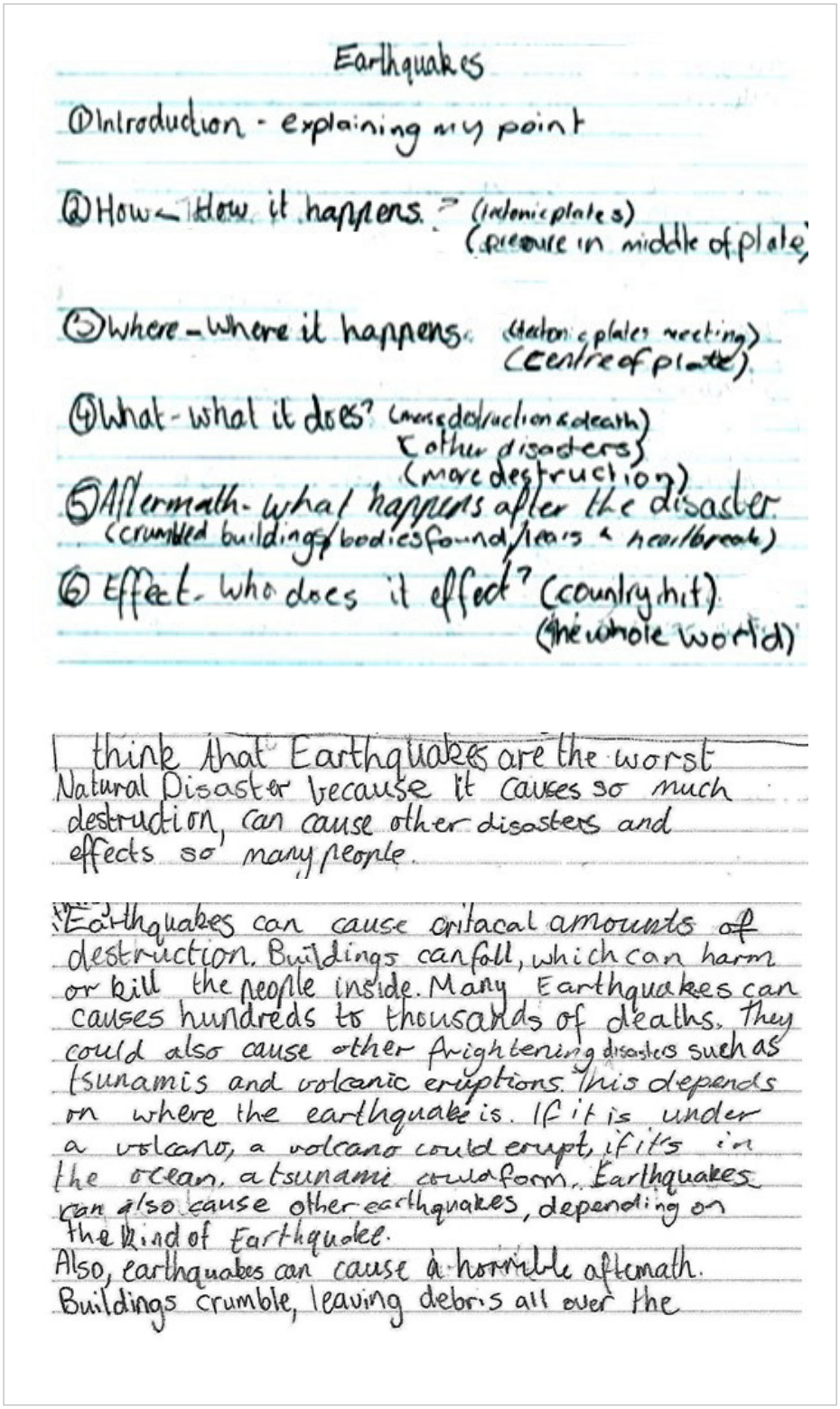
Summary of task

Students explored the cause and effects of a range of natural disasters. They had discussed that in addition to rapidly altering Earth's surface, natural disasters impact communities.

Students were asked to plan and write a persuasive text in answer to the question, 'Which natural disaster is worst?' Students used their class notes as the basis for generating their ideas. They revised their notes and completed a plan in one lesson and wrote the piece in a second lesson.

Science

Work sample 5:
Persuasive text – Which disaster is the worst?



Earthquakes

①Introduction - explaining my point

②How ~~How~~ it happens. (tectonic plates)
(pressure in middle of plate)

③Where - where it happens. (tectonic plates meeting)
(centre of plate)

④What - what it does? (causes destruction & death)
(other disasters)
(more destruction)

⑤Aftermath - what happens after the disaster.
(crumbled buildings / bodies found / tears & heartbreak)

⑥Effect - who does it effect? (country hit)
(the whole world)

I think that Earthquakes are the worst Natural Disaster because it causes so much destruction, can cause other disasters and effects so many people.

Earthquakes can cause critical amounts of destruction. Buildings can fall, which can harm or kill the people inside. Many Earthquakes can causes hundreds to thousands of deaths. They could also cause other frightening disasters such as Tsunamis and volcanic eruptions. This depends on where the earthquake is. If it is under a volcano, a volcano could erupt, if it's in the ocean, a tsunami could form. Earthquakes can also cause other earthquakes, depending on the kind of Earthquake.
Also, earthquakes can cause a horrible aftermath. Buildings crumble, leaving debris all over the

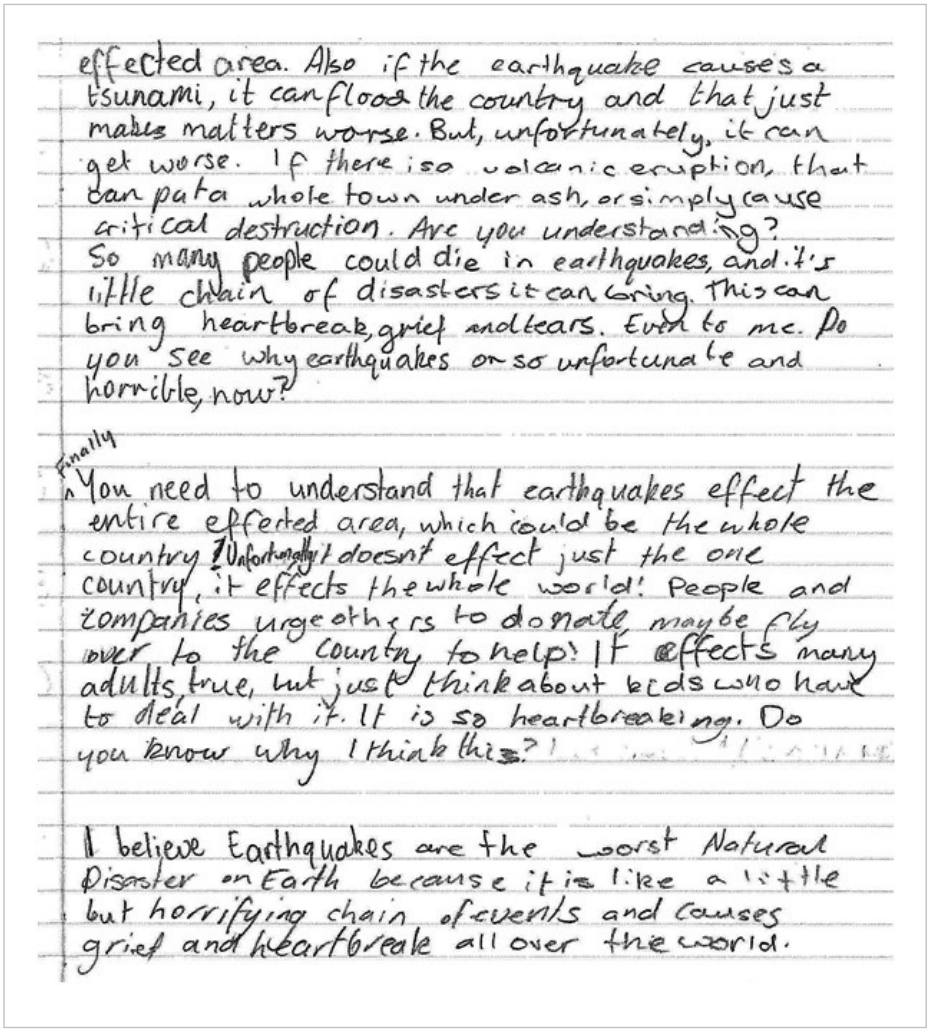
Annotations

Organises collected data (research information).

Describes the variety of changes to the Earth's surface that can result from an earthquake.

Science

Work sample 5:
Persuasive text – Which disaster is the worst?



effected area. Also if the earthquake causes a tsunami, it can flood the country and that just makes matters worse. But, unfortunately, it can get worse. If there is a volcanic eruption, that can put a whole town under ash, or simply cause critical destruction. Are you understanding? So many people could die in earthquakes, and it's little chain of disasters it can bring. This can bring heartbreak, grief and tears. Even to me. Do you see why earthquakes are so unfortunate and horrible, now?

Finally

You need to understand that earthquakes effect the entire effected area, which could be the whole country! Unfortunately it doesn't effect just the one country, it effects the whole world! People and companies urge others to donate, maybe fly over to the country to help! It effects many adults, true, but just think about kids who have to deal with it. It is so heartbreaking. Do you know why I think this?

I believe Earthquakes are the worst Natural Disaster on Earth because it is like a little but horrifying chain of events and causes grief and heartbreak all over the world.

Annotations

Suggests how science understanding can inform personal decision making, i.e. argues that the impact of an earthquake provides a strong reason to provide aid to areas affected.

Annotations (Overview)

In this work sample, the student communicates science ideas and findings using scientific language.

Acknowledgment
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Science

Work sample 6:
Worksheet – Reversible and irreversible change

Relevant parts of the achievement standard

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Students follow procedures to develop investigable questions and design investigations into simple cause-and-effect relationships. They identify variables to be changed and measured and describe potential safety risks when planning methods. They collect, organise and interpret their data, identifying where improvements to their methods or research could improve the data. They describe and analyse relationships in data using graphic representations and construct multi-modal texts to communicate ideas, methods and findings.

Summary of task

Students studied a unit of work on changes to materials. They explored a range of changes, including melting, freezing, dissolving, burning and rusting, and classified these as reversible or irreversible.

Students were asked to complete the worksheet independently as a summary of what they had learned over the unit.

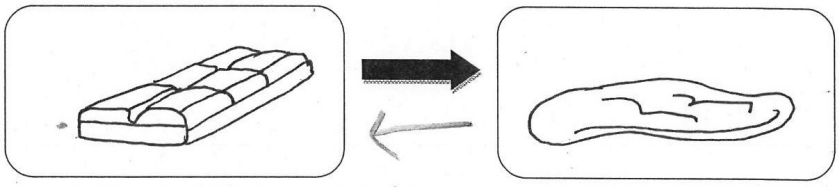
Science

Work sample 6:
Worksheet – Reversible and irreversible change

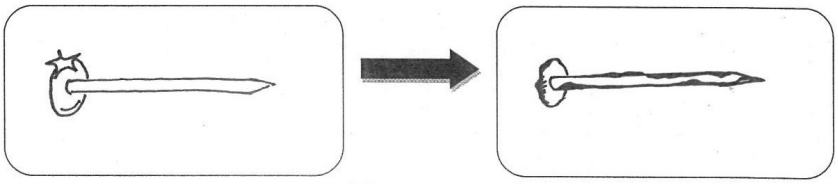
Reversible and irreversible changes – Part A

Look at each of the changes and fill in the blanks to say whether the changes are reversible or irreversible.

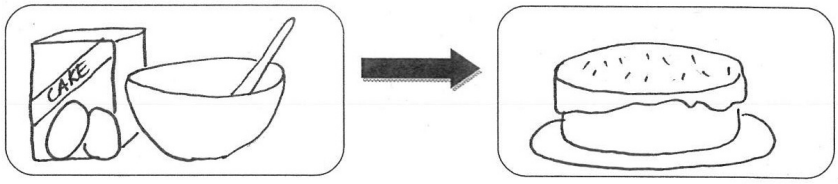
For the reversible changes, draw another arrow below the first one, pointing the other way.



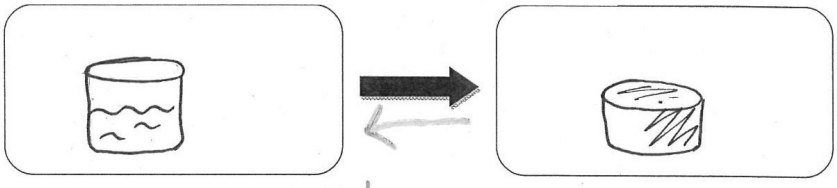
Melting chocolate is a reversible change



A nail rusting is an irreversible change



Baking a cake is an irreversible change



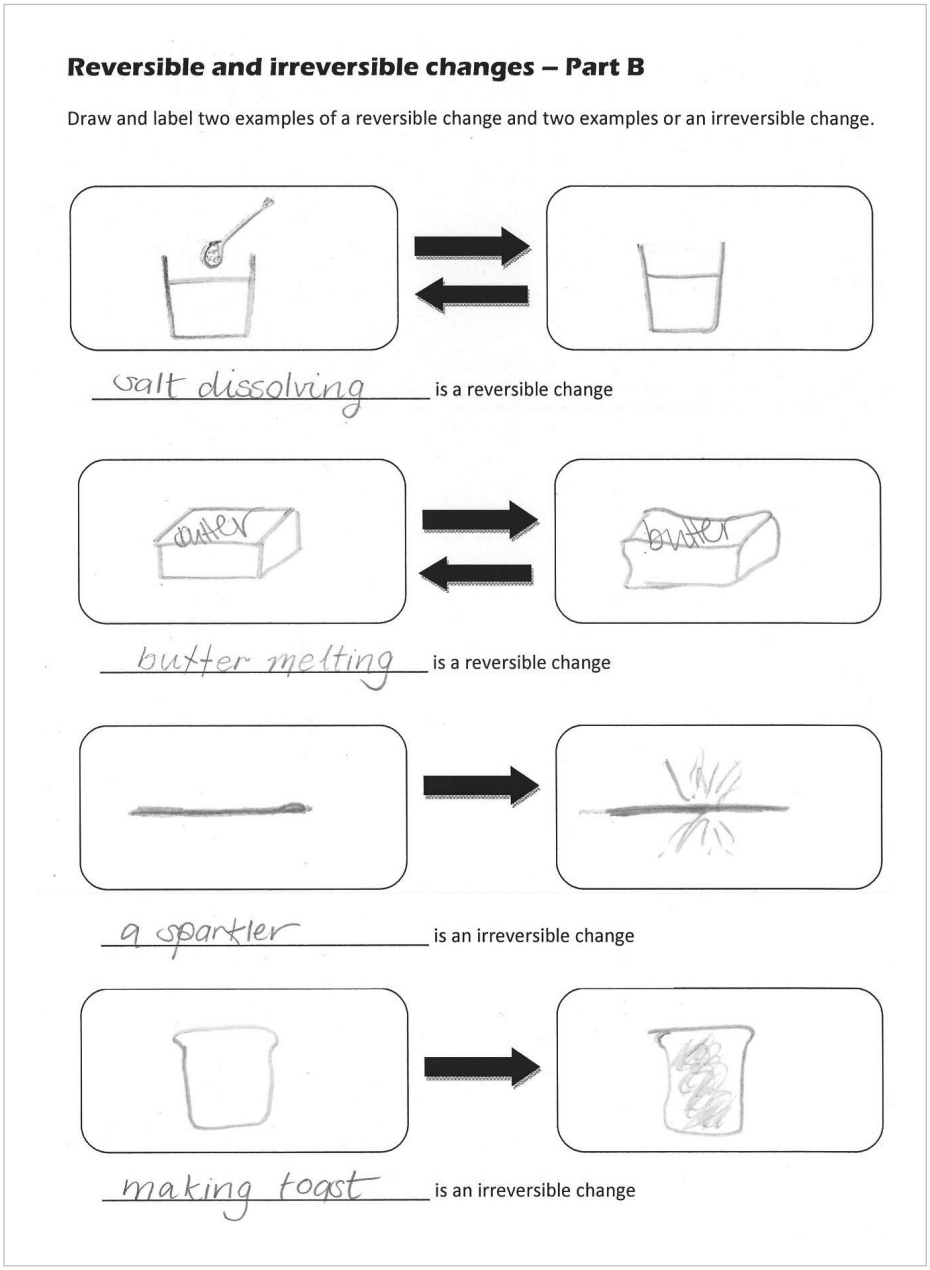
Water freezing is a reversible change

Annotations

Correctly classifies changes as reversible or irreversible.

Science

Work sample 6:
Worksheet – Reversible and irreversible change



Reversible and irreversible changes – Part B

Draw and label two examples of a reversible change and two examples or an irreversible change.

salt dissolving is a reversible change

butter melting is a reversible change

a sparkler is an irreversible change

making toast is an irreversible change

Annotations

Correctly selects their own examples of reversible and irreversible change.

Annotation (Overview)

In this work sample the student constructs a multimodal text to communicate ideas.

Acknowledgment
ACARA acknowledges the contribution of the trial school teachers and students for providing the tasks and work samples. The annotations are referenced to the Australian Curriculum achievement standards.

Science

Work sample 7:
Investigation report – Plant growth

Relevant parts of the achievement standard

By the end of Year 6, students compare and classify different types of observable changes to materials. They analyse requirements for the transfer of electricity and describe how energy can be transformed from one form to another to generate electricity. They explain how natural events cause rapid change to the Earth's surface. They describe and predict the effect of environmental changes on individual living things. Students explain how scientific knowledge is used in decision making and identify contributions to the development of science by people from a range of cultures.

Students follow procedures to develop investigable questions and design investigations into simple cause-and-effect relationships. They identify variables to be changed and measured and describe potential safety risks when planning methods. They collect, organise and interpret their data, identifying where improvements to their methods or research could improve the data. They describe and analyse relationships in data using graphic representations and construct multi-modal texts to communicate ideas, methods and findings.

Summary of task

Students had completed a unit exploring the effect of physical environmental conditions (amount of light, water, nutrients, shelter etc) on living things.

Students were asked to work in pairs to design their own investigation into the effects of a single variable on plant growth. They refined their question through small group discussion and designed their own method. They were provided with a simple investigation report pro forma to follow. They were requested to include a discussion of how they would improve their investigation in the conclusion. Students drafted their report and then developed a final copy for assessment.

Science

Work sample 7:
Investigation report – Plant growth

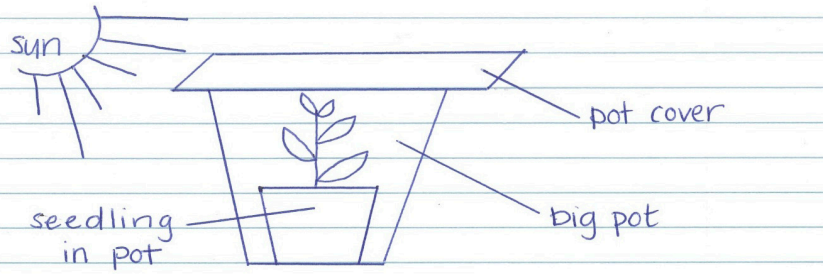
Effect of light on Plant Growth

Aim: To see if the amount of light effects how well plants grow.

Hypothesis: The plant with no cover (most light) will grow ~~best~~ most

Method:

1. Buy three small plants that are the same
2. Make ~~three~~ two covers - one that's clear and one that's black
3. Put the pots with the seedlings on a sunny window sill.
4. Leave for 5 days
5. See which plant looks the healthiest



Things I will keep the same:
- colour of big pot
- time in sun
- place kept
- size of big pot
- type of plant

Things I will change:
- pot cover (no cover, translucent, opaque)

Things I will measure:
- how healthy the plant looks
- how many leaves
- how tall it is

Annotations

Develops an investigable question.

Designs an investigation into a simple cause and effect relationship (the amount of light and plant 'health').

Constructs a diagram to illustrate the experimental set up.

Identifies variables to be changed and measured.

Science

Work sample 7:
Investigation report – Plant growth

Results:

Day 1 Plants = mint

No cover	Clear cover	Black cover
The plant is quite green and healthy. It is 12.5 cm tall. It has 23 leaves. Some leaves have a tiny bit of brown spots.	The plant is quite green and healthy. It is 10.2 cm tall. It has 18 leaves. Some leaves have some little holes in them but I can't see any bugs.	The plant is quite green and healthy. It is 14 cm tall. It has 27 leaves (but some are new and little). Some leaves have brown spots.

Day 5

No cover	Clear cover	Black cover
Leaves have gone brown and fallen off. 8 leaves fell off. Some at the ends are still green. The soil is very dry. The plant looks stressed.	The plant has new little leaves! It is green and healthy. If you stretch it out it is 16.4 cm long! (one bit) There was drops of water on the cover.	The plant looks a bit yellower? Or paler. A bit stressed. There are some new leaves but little. Still only 14.8 cm tall.

Discussion:

The pot with the clear cover had the most growth and the healthiest plant. It got new leaves and got taller. I think this was because the cover made it like a greenhouse because it let the light in and kept the moisture in too.

Annotations

Collects data – qualitative observations and some measurements.

Organises data in simple tables.

Interprets data and attempts to provide reasons for observed trends.

Science

Work sample 7:
Investigation report – Plant growth

I think that the pot with no lid didn't work because all the water evaporated and even though it had ~~water~~ light the plant got stressed from drying out. So it was hard to tell how it really compared to the plant with the clear cover.

The plant with the black cover grew a bit but not as much as the plant with the clear cover. It looked paler green and a bit stressed but not dry. I thought it would die but it didn't.

I think that not having a cover made this an unfair test. The covers trap moisture in the pot so the plants don't dry out. To test if the cover does make a difference you could water the plants by the same amount every day so they didn't dry out.

Counting the leaves didn't really work because some leaves are big and some are small? Another way would be to pull off all the leaves and weigh them but you couldn't do that at the start.

Conclusion:

Even though this experiment didn't really work you could still tell that plants grow best when they have light and water. But I couldn't tell which one was more important.

Annotations

Interprets data and attempts to provide reasons for observed trends.

Compares observations to predictions.

Identifies issues in the method and attempts to identify improvements to the method.

Constructs a conclusion based on data and acknowledges uncertainty.

Annotations (Overview)

In this work sample, the student communicates ideas, methods and findings through a multimodal text.

Acknowledgment:
ACARA acknowledges the contribution of the trial teachers providing the tasks and work samples. The annotations are referenced to the Australian curriculum achievement standards.