Science

Year 7
Below satisfactory

WORK SAMPLE PORTFOLIO

Annotated work sample portfolios are provided to support implementation of the Foundation – Year 10 Australian Curriculum.

Each portfolio is an example of evidence of student learning in relation to the achievement standard. Three portfolios are available for each achievement standard, illustrating satisfactory, above satisfactory and below satisfactory student achievement. The set of portfolios assists teachers to make on-balance judgements about the quality of their students' achievement.

Each portfolio comprises a collection of students' work drawn from a range of assessment tasks. There is no pre-determined number of student work samples in a portfolio, nor are they sequenced in any particular order. Each work sample in the portfolio may vary in terms of how much student time was involved in undertaking the task or the degree of support provided by the teacher. The portfolios comprise authentic samples of student work and may contain errors such as spelling mistakes and other inaccuracies. Opinions expressed in student work are those of the student.

The portfolios have been selected, annotated and reviewed by classroom teachers and other curriculum experts. The portfolios will be reviewed over time.

ACARA acknowledges the contribution of Australian teachers in the development of these work sample portfolios.

THIS PORTFOLIO: YEAR 7 SCIENCE

This portfolio provides the following student work samples:

Sample 1 Investigation report: Separating mixtures
Sample 2 Investigation report: Water purification
Sample 3 Presentation: Should we recycle water for drinking?
Sample 4 Video analysis: Forces in sport
Sample 5 Poster: Super suits
Sample 6 Report: The Earth–sun–moon system
Sample 7 Worksheet: Classification
Sample 8 Written test: Living together
Sample 9 Investigation poster: Parachute design

In this portfolio, the student describes a range of techniques to separate a pure substance from a mixture (WS1, WS2) and applies knowledge of the effects of unbalanced forces on motion through sports science and parachute design investigations (WS4, WS5, WS9). The student explores the cycling of water through Earth systems and explains how sustainable use of water is related to understanding of the water cycle (WS2).

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The student explains how the relative positions of the Earth, sun and moon are related to seasons on Earth (WS6). The student demonstrates understanding of the effect of environmental changes on feeding relationships (WS8) and uses classification to group and differentiate organisms (WS7). The student describes how scientific knowledge has been used to address the problems of water conservation (WS2) and athlete performance (WS5) and indicates how the solution might impact various groups in society differently (WS5).

The student constructs an investigation to answer a question (WS9) and identifies variables to be changed and measured (WS1, WS9). The student identifies improvements to investigation methods that could improve the quality of the data collected (WS1, WS2, WS9). The student identifies trends in data (WS1, WS9), summarises data from different sources (WS3) and uses evidence to support investigation conclusions (WS1, WS2, WS3, WS9). The student communicates ideas, methods and findings using scientific language and a range of appropriate representations (WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8, WS9).

Investigation report: Separating mixtures

Year 7 Science achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

> *By the end of Year 7, students describe techniques to separate pure substances from mixtures. They represent and predict the effects of unbalanced forces, including Earth's gravity, on motion. They explain how the relative positions of the Earth, sun and moon affect phenomena on Earth. They analyse how the sustainable use of resources depends on the way they are formed and cycle through Earth systems. They predict the effect of environmental changes on feeding relationships and classify and organise diverse organisms based on observable differences. Students describe situations where scientific knowledge from different science disciplines has been used to solve a real-world problem. They explain how the solution was viewed by, and impacted on, different groups in society.*
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Summary of task

Students had been learning about various techniques that can be used to separate a mixture. They had completed a series of guided practical tasks where each technique was practised and applied to a common mixture. Students had also demonstrated safe working practices in the laboratory and had obtained their 'Bunsen burner licence'.

In this investigation, students were required to separate pistolite (iron ore) and salt from a mixture that also contained sand, birdseed and gravel. Three 100-minute lessons were provided to plan, undertake and complete a report on the investigation. A scaffolded worksheet was provided and students were encouraged to review their previous practical and theory work on the topic.

Students were advised that Bunsen burners present fire hazards. They were required to tie back their hair, ensure the bench space was clear of other materials and ensure they did not leave the open flame unattended. They were reminded that the equipment would be hot and could cause burns if not handled using appropriate techniques.

Investigation report: Separating mixtures

Separation of Iron and Salt from a mixture

Aim *(Write a brief aim for the investigation, what is the purpose?)*

The Aim of this experiment is to find the quantity of the salt and iron pissolites from a crushed rock sample.

Materials *(In the space below write a list of all of the equipment used during the investigation.)*

Crushed rock sample	Heat proof mat	filter paper
bunsen burner	sieve	funnle
tripod	magnet	Beakers (x2)
clay triangle	gauze mat	conical flask
tong	evaporating dish	News paper
watch glass	scales	stirring rod

Method *(DO NOT USE MORE THAN 50 ML WATER)*

1. Spread Crushed rock sample out on Newspaper.
2. Run magnet over crushed rock sample to collect all iron pisolites
3. weigh iron pisolites on watch glass.
4. Sieve the rock sample to separate the rocks and seeds from the salt and sand.
5. place the salt and sand in a beaker and add water.
6. Stir the water and wait for salt to disolve.
7. Decant the salt water from the sand and pour into a beaker
8. Pour decanted water into a filter and wait until clear water has filtered through.
9. Pour water into evaporating dish.
10. Place evaporating dish on tripod above bunsen burner.
11. turn bunsen burner on and wait for the water to evaporate.
12. turn bunsen burner off and place evaporating dish on scales using tongs.
13. Record your results.

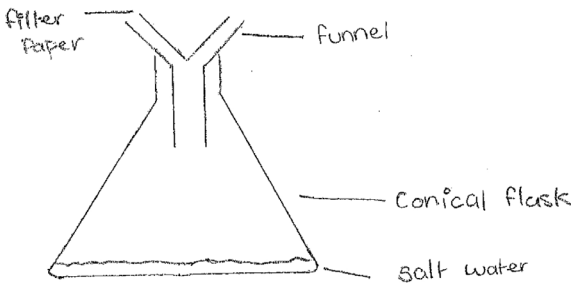
Annotations

Outlines method to separate iron and salt from a mixture.

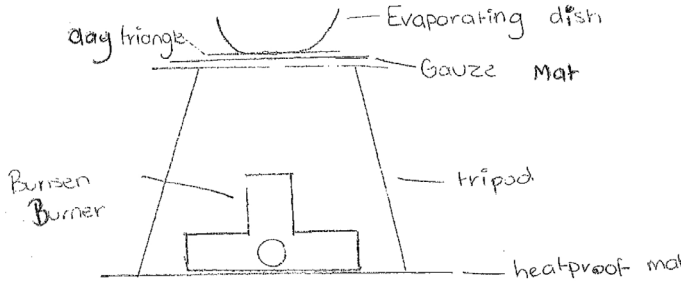
Investigation report: Separating mixtures

Diagrams of 2 of the procedures *(Make sure diagrams are drawn correctly in pencil and labelled.)*

1. Filtration



2. Evaporation



Results

1. **Iron ore recovery**

Teacher measurement of initial Mass of iron pisolites [redacted] g

Mass of Watch glass 33 g

Mass of Watch glass and iron pisolites 39.2 g

Mass of iron pisolites finally 6.2 g

Loss / gain in iron pisolites mass 0 g

Annotations

Uses scientific diagrams to represent separation techniques.

Records data collected and compares recovered quantities to original quantities.

Investigation report: Separating mixtures

2. **Salt recovery** PB JC

Teacher measurement of initial Mass of salt 5.8 / 10/8 [redacted] g

Mass of Evaporating basin 38.5 g

Mass of evaporating basin and salt 62.1 g

Mass of salt finally 23.6 g

Loss / gain in salt mass 19.8 g

Discussion *(answer the following questions in the spaces provided)*

Did you lose or gain iron? Why? What experimental errors were there with the iron?

No, There was no iron lost or gained and there were no experimental errors.

Did you lose or gain salt? Why? What experimental errors were there with the salt?

Yes, There was a gain in the salt.

Suggest 3 improvements to the separating procedures

- Place something over the evaporating dish so salt dosn't spit.

Conclusion *(In sentences: could you isolate the iron and the salt? Were your techniques very accurate? How could the procedure be improved)* In conclusion, we were able to isolate the salt and iron but did not get the right calculation of the salt.

Annotations

Identifies discrepancies in data.

Suggests an improvement to the method.

Annotations (Overview)

Uses scientific language and diagrams to communicate methods and findings.

Investigation report: Water purification

Year 7 Science achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

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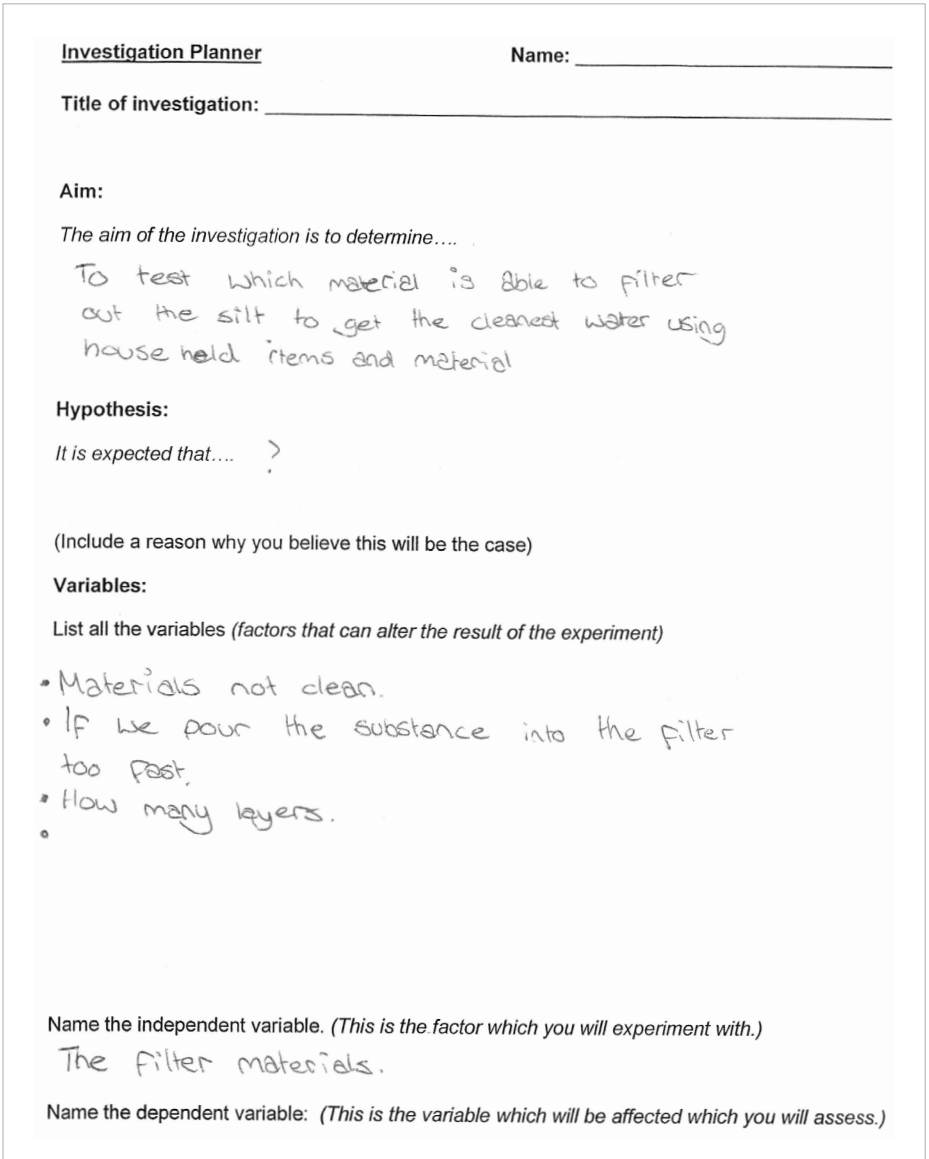
Summary of task

Students were investigating the ways in which different substances could be separated from a range of mixtures. They had undertaken guided practical tasks using filtration apparatus and were familiar with basic measuring equipment. Students were also aware of the requirements for carrying out fair tests and the need to control variables.

In this task, students worked in groups of three to design and conduct an investigation comparing how well household materials filter polluted water. Each group was given 150 mL of polluted water. Students were required to supply their own filtering materials and other household equipment. Three 50-minute lessons were allocated to complete the scaffolded planning worksheet, three lessons to undertake the experiment and two lessons for the final scientific report.

Students were warned not to ingest the polluted water.

Investigation report: Water purification



Investigation Planner **Name:** _____

Title of investigation: _____

Aim:

The aim of the investigation is to determine….

To test which material is able to filter out the silt to get the cleanest water using house hold items and material

Hypothesis:

It is expected that…. >

(Include a reason why you believe this will be the case)

Variables:

List all the variables *(factors that can alter the result of the experiment)*

- Materials not clean.
- If we pour the substance into the filter too fast.
- How many layers.
-

Name the independent variable. *(This is the factor which you will experiment with.)*

The filter materials.

Name the dependent variable: *(This is the variable which will be affected which you will assess.)*

Annotations

Identifies the independent variable.

Investigation report: Water purification

Water Purification

Name:

Colleagues:

Introduction: This experiment is to test various types of filtration material

Reasons why: May be able to increase knowledge when in times of drought and hardships, especially for the use in third world countries.

Aim: The aim of this experiment was to determine which material filtered the dirty water the best.

Hypothesis: It was expected that the contaminated water would drip through the materials cleaner than before it was poured into the filter.

Method: The tops of three bottles were cut off and placed in the bottle the opposite side up; this was done so the lid could act like a funnel. We then placed the materials we used into the lid; we made sure the materials were inserted properly. After we did this we placed the bottle on a white piece of paper so we could observe the filtered water easily. The contaminated water was then poured into the filters, and observed.

Results:

	Material	Appearance of Filtrate	Appearance of Filter
1.	Tea Towel	Clearest water out of all of the filters	Caught almost all of the dirt, was very dirty afterwards
2	Paper Cone	Was not successful, water went straight through	There were small rings of dirt on the inside of the paper
3	Thick Sponge	Was second most effective filtrate. Looked more pale that expected.	Could see small particles of dirt, was not the best choice of filter

Annotations

States a simple aim for the investigation.

Describes a method for the investigation.

Constructs an appropriate table to record qualitative data.

Investigation report: Water purification

Discussion: The best result of the *Water Purification* experiment was the filter using the Tea Towel. The filtrate was transparent and after a few times through the filter looked like it was bottled water. The second best filter that was used was the filter that used the thick sponge. The water was still dirty, but nowhere near as dirty as expected. The least effective Filter was the filter that used the paper cone. The paper cone split about 3 minutes after the contaminated water was poured into the filter; therefore the water looked the same as before it had been poured in.

We slowly poured the contaminated water into the filter that was using the tea towel , we did this a couple times afterwards because we weren't satisfied with the first result, as well as we were trying to improve the turnout of the filtrate. It improved by a lot.

We did the same process with the thick sponge as well as the paper cone; however we did not re-filter these

Conclusion: In conclusion the tea towel was the most successful filter that was used out of the three materials. It provided the clearest evidence of filtration out of the three options.

Annotations

Analyses data to draw conclusions relevant to the investigation aim.

Annotations (Overview)

The student uses scientific language and representations to communicate methods and findings of an investigation.

Presentation: Should we recycle water for drinking?

Year 7 Science achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

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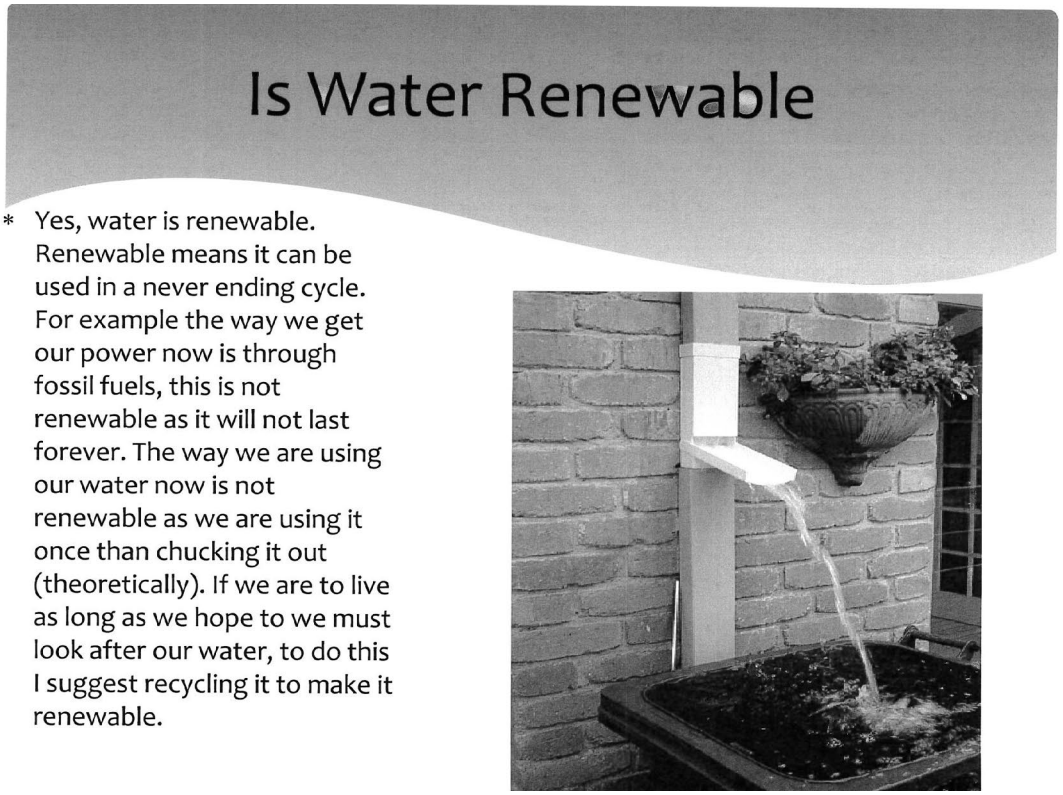
Summary of task

This task was undertaken at the end of a unit of work on water as an important resource. Throughout the unit, students performed various experiments and tests on water samples. They investigated the water cycle from Indigenous perspectives and analysed water use throughout the world. They also researched media reports on the issue of recycling water.

The question posed to students was, 'Should waste water be recycled and used for drinking?' Students were given approximately two weeks to complete the task, including four lessons to carry out their research. Students were asked to present their findings using a visual aid of their choice.

Presentation: Should we recycle water for drinking?



Annotations

Describes water as a renewable resource.

Presentation: Should we recycle water for drinking?

Water cycle

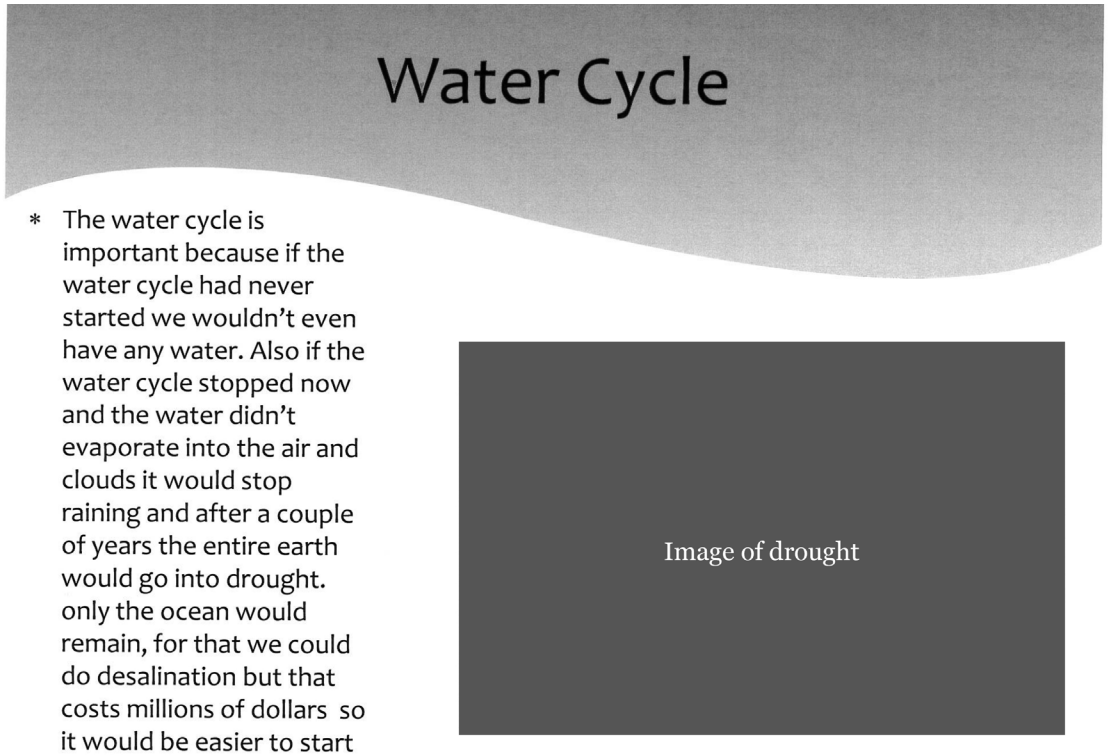
* The water cycle shown in the previous slide uses very complex words I would like to explain some of these complicated words some of them are:
* Evaporation: This is when water from the sea, ground, lakes, etc. goes into the air up into the clouds when in the clouds the water cools up enough to turn back into water and that is why it rains because the cloud can't hold anymore water.
* Transpiration: this is exactly like evaporation except the water comes from plant sweat.
* Condensation: This is like when an inanimate object sweats like when you take a cold bottle out of the fridge and leave it out of the fridge for a little while condensation is the watery film over it.
* Precipitation: this is what comes out of a cloud with to much condensation in it, precipitation is rain, sleet, hail, fog etc.

Image of rain

Annotations

Describes water cycle processes with reference to movement of water between the Earth systems.

Presentation: Should we recycle water for drinking?



Annotations

Differentiates between fresh water and salt water in considering water availability.

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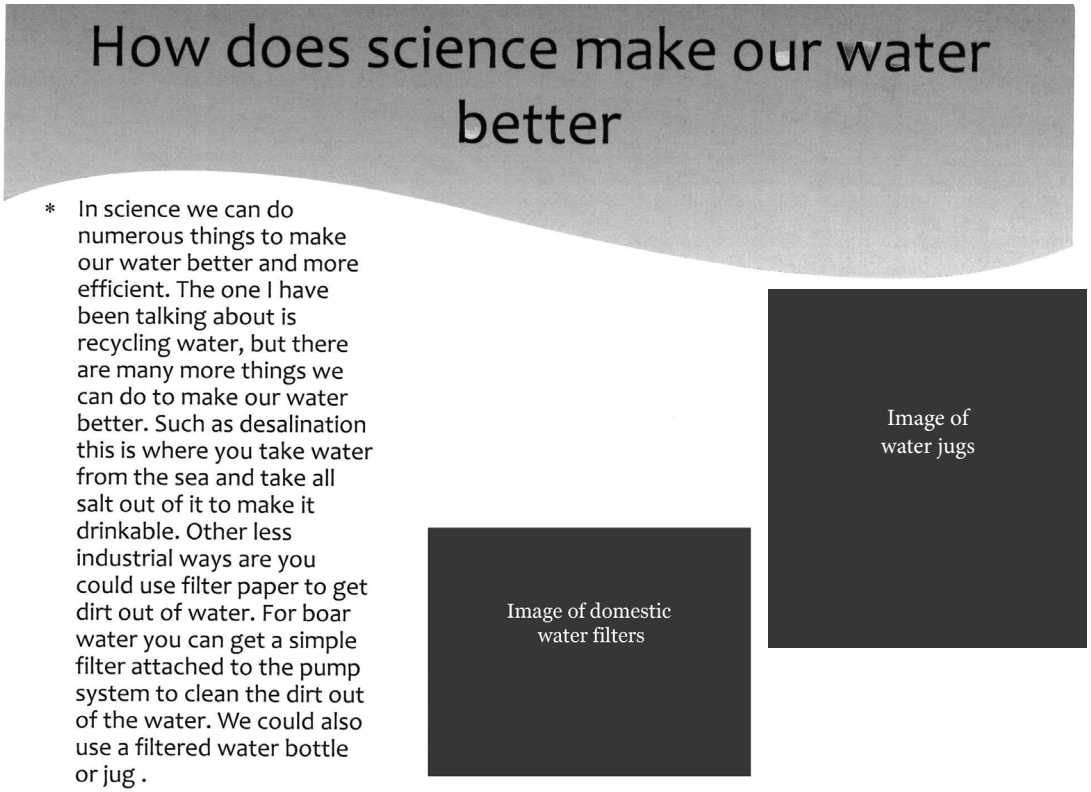
Presentation: Should we recycle water for drinking?



Annotations

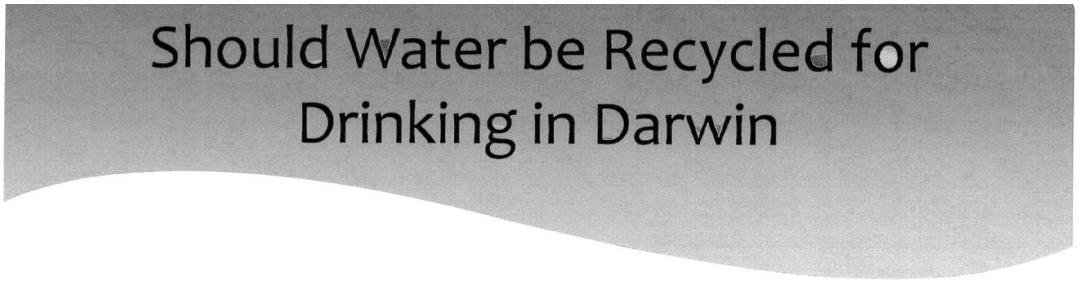
Identifies some contributions of science and scientists to efficient water use.

Science

Year 7

Below satisfactory

Presentation: Should we recycle water for drinking?



* Yes I believe water should be recycled for our drinking water the reason being that we ***will run out*** of water someday so we need to be prepared and why not start now the water we are using in toilets and showers is fresh and clean we should use all of this water to it's full potential people may think they are going to be drinking other humans waste but through research I have learnt that recycled water is 99.9999999% clean leaving a 00.0000001% chance of bacteria or waste that is a literal 1 in a million chance. The water in our world will eventually run out if we use it as we are now maybe not for a long time but I ask you...
If not now when!?
If not recycled than how!?

Annotations

Evaluates recycled drinking water with reference to the quality of the water.

Annotations (Overview)

The student constructs arguments and utilises a range of data to form conclusions. The student uses scientific language and representations to communicate ideas and research findings.

Video analysis: Forces in sport

Year 7 Science achievement standard

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Summary of task

Students were part way through a unit investigating forces. They had explored the effect of pushes and pulls, gravity and friction on the motion of objects. They had discussed the concepts of balanced and unbalanced forces, and how these could be inferred by analysing the motion of objects.

In this task, students were asked to take on the role of a sports scientist and make observations about an athlete's performance in pole vaulting. After watching a short video clip of an athlete competing in this event, students considered the forces involved and their effects on the athlete's motion and the pole. They used force arrows to show the direction and relative size of the forces and were asked to make predictions based on scenarios in which the forces were changed. Students also considered how the athlete's performance could be improved in light of their understanding of the forces involved.

Video analysis: Forces in sport

Simple Machines and Sport

In an effort to improve performance at the next Olympics, the Australian Institute of Sport has decided to recruit you as a trainee **Sport Scientist** because of your knowledge of simple machines and levers. A Sport Scientist (also known as a **Biomechanist**) makes observations and interprets data in relation to sporting performance and provides advice to coaches about how to help their athletes improve. Watch the following clip to learn more about biomechanics:

http://www.ausport.gov.au/participating/coaches/videos/intermediate/basic_biomechanics

The sport you have been chosen to assist with is **Pole Vault**. This is a track and field event where the athlete uses a long, flexible pole (usually made of fibreglass or carbon fibre) to help them leap over a bar. Ancient Greeks, Cretans and Celts competed in pole vaulting events. It has been an Olympic sport for men since 1896 and women since 2000.
Source: http://en.wikipedia.org/wiki/Pole_vault

http://olympics.time.com/2012/06/27/how-they-train-pole-vaulting-with-joel-stein/

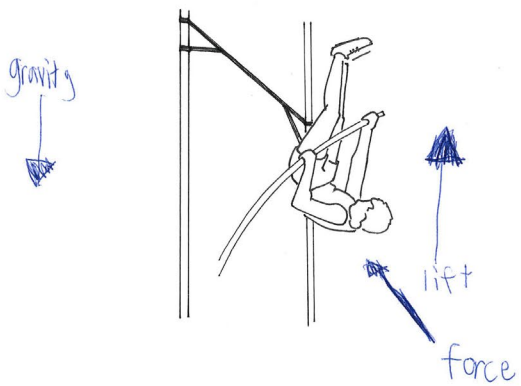
Watch the following clip of Steve Hooker, an Australian Olympic athlete, competing to qualify for the London Olympics and then answer the questions below.

http://www.youtube.com/watch?v=eYoEWZqFjNM&NR=1&feature=endscreen

1. Thinking about the athlete and his complete journey, list as many forces as you can that are involved in pole vaulting and explain briefly the effect of each force on the athlete or the pole.

Gravity - going up down
Momentum going up over the pole
Pushing to get off the ground.
Friction touching eachother
Lever to get over the pole

2. On the diagram below draw an arrow to show the direction and relative size of each of the forces acting on the athlete. The athlete is travelling upwards and about to go over the bar.

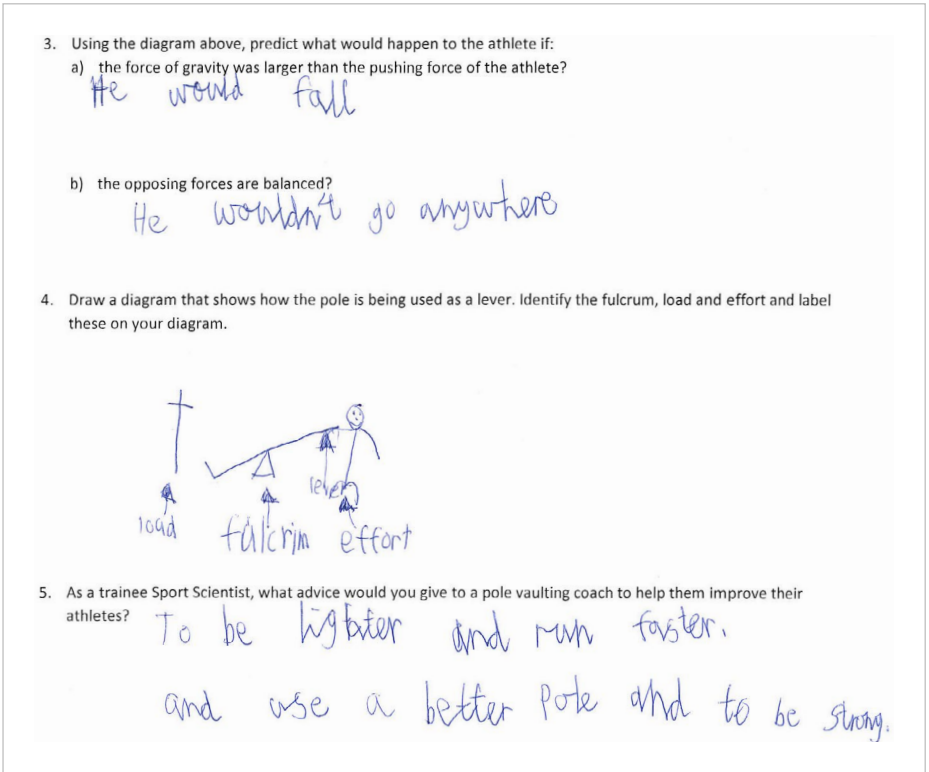


Annotations

Identifies that gravity, friction and pushing forces are involved in pole vaulting.

Uses arrows to represent upward and downward forces.

Video analysis: Forces in sport



3. Using the diagram above, predict what would happen to the athlete if:
   a) the force of gravity was larger than the pushing force of the athlete?
   He would fall
   b) the opposing forces are balanced?
   He wouldn't go anywhere
4. Draw a diagram that shows how the pole is being used as a lever. Identify the fulcrum, load and effort and label these on your diagram.
   load fulcrum effort
5. As a trainee Sport Scientist, what advice would you give to a pole vaulting coach to help them improve their athletes?
   To be lighter and run faster.
   and use a better Pole and to be strong.

Annotations

Predicts an effect of unbalanced forces on a pole vaulter.

Identifies that balanced forces can be associated with an object at rest.

Annotations (Overview)

The student communicates ideas using scientific language and representations.

Poster: Super suits

Year 7 Science achievement standard

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Summary of task

Students were investigating the forces that act on athletes and objects in various Olympic sports. They were familiar with concepts such as friction, gravity, thrust and buoyancy and the way that they impact on motion. They had considered examples in which scientific knowledge of forces had been used to improve the performance of athletes.

In this task, students were required to answer a series of questions relating to the forces that act on swimmers and the role that improved swimsuits have had on swimmers' performance. Students were encouraged to use their workbooks and carry out research to help them answer the questions. They were required to present their answers in the form of a small poster. Students commenced the task during a 100-minute lesson and completed it in their own time over the following week.

Science

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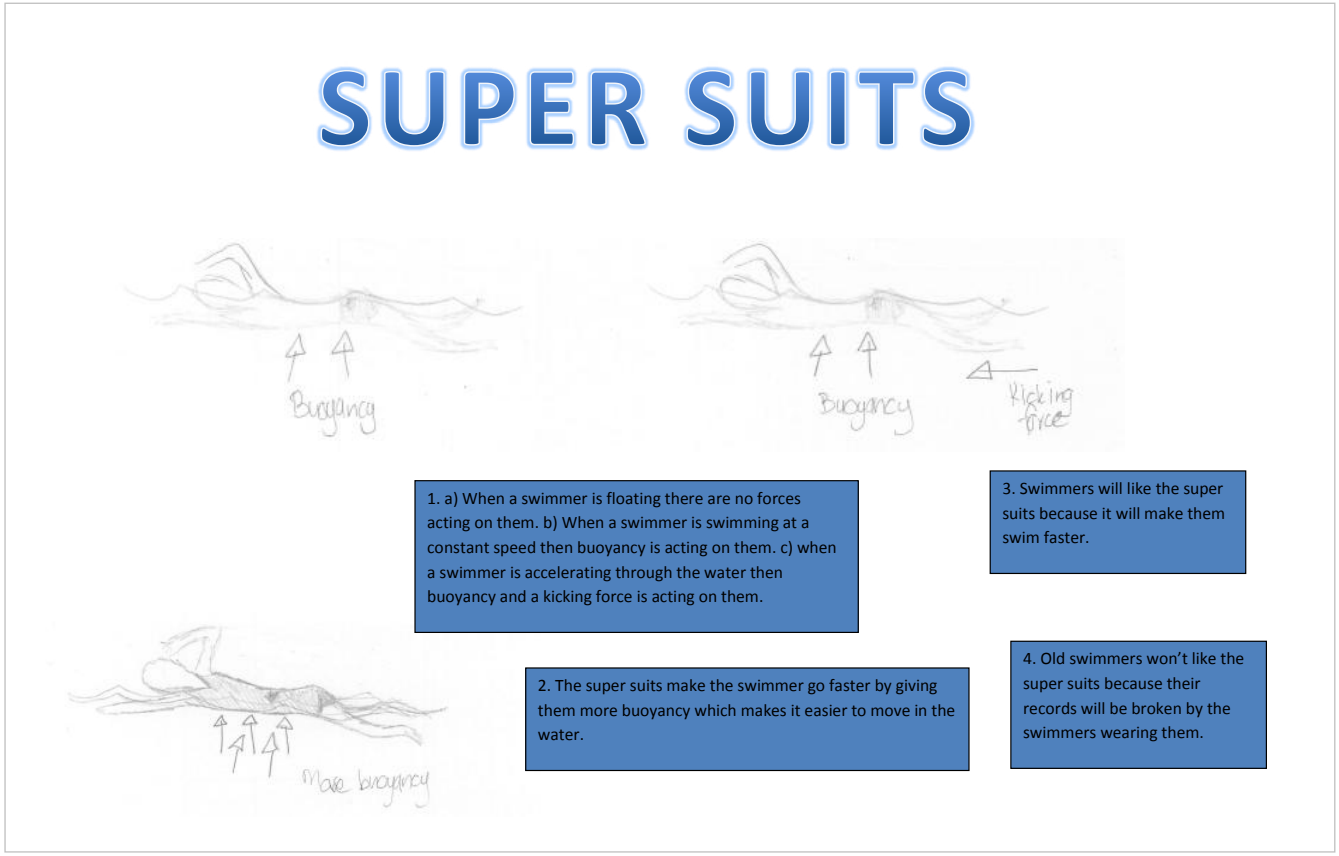
Below satisfactory

Poster: Super suits



Annotations

Constructs a diagram to show a force acting on a moving object.

Identifies societal groups who viewed the development of the super suits positively and negatively and gives a reason for their view.

Annotations (Overview)

The student uses language and representations to communicate science ideas.

Report: The Earth–sun–moon system

Year 7 Science achievement standard

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Summary of task

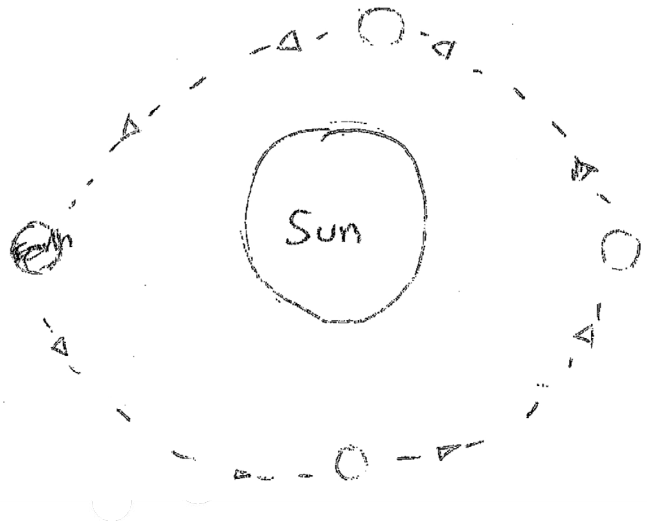
Students had been investigating the Earth–sun–moon system, including manipulating physical and digital models and engaging in role plays to explore the relative movement of each body.

Students were asked to provide a written or word processed response to a number of questions relating to the Earth–sun–moon system. Students began the task in class during a 50-minute lesson, and were required to complete the task for homework. Students were encouraged to draw on their existing knowledge and understanding and undertake research to ensure that their answers were factually correct.

Report: The Earth–sun–moon system

Explain why we have season on Earth

5. Because of the angle of the Earth. & also the distance.



6. It affected people in the past Because they couldnt Grow crops During Certian seasons, therefore food was Scarce.

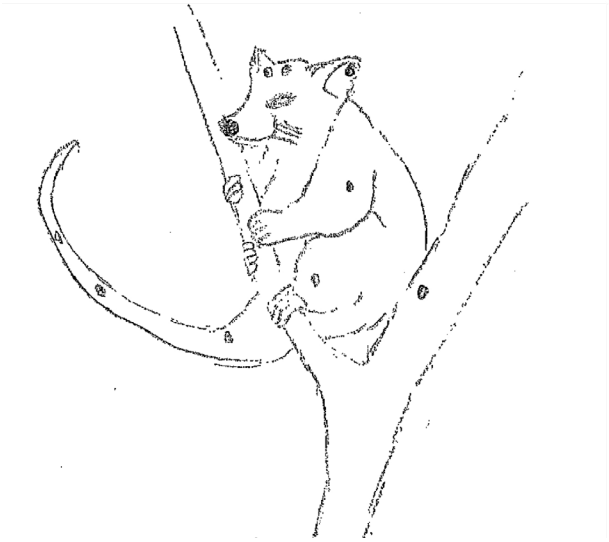
Annotations

Identifies that the tilt of Earth on its axis is related to the seasons.

Identifies that seasons affect people in their daily lives.

Report: The Earth–sun–moon system

7. "Bunya the possum can be seen in the constellation known to us as the Southern Cross. This can always be seen at night in Melbourne. The tip of the Southern Cross is the nose of the possum and his tail hangs down to the left. Bunya ran away from Tchingal the Emu and hid in a tree for so long he turned into a possum"



Annotations

Annotations (Overview)

The student communicates ideas and findings using appropriate scientific language and representations.

Worksheet: Classification

Year 7 Science achievement standard

The parts of the achievement standard targeted in the assessment task are highlighted.

> *By the end of Year 7, students describe techniques to separate pure substances from mixtures. They represent and predict the effects of unbalanced forces, including Earth's gravity, on motion. They explain how the relative positions of the Earth, sun and moon affect phenomena on Earth. They analyse how the sustainable use of resources depends on the way they are formed and cycle through Earth systems. They predict the effect of environmental changes on feeding relationships and classify and organise diverse organisms based on observable differences. Students describe situations where scientific knowledge from different science disciplines has been used to solve a real-world problem. They explain how the solution was viewed by, and impacted on, different groups in society.*
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> *Students identify questions that can be investigated scientifically. They plan fair experimental methods, identifying variables to be changed and measured. They select equipment that improves fairness and accuracy and describe how they considered safety. Students draw on evidence to support their conclusions. They summarise data from different sources, describe trends and refer to the quality of their data when suggesting improvements to their methods. They communicate their ideas, methods and findings using scientific language and appropriate representations.*

Summary of task

Students had investigated developing and using dichotomous keys to classify various groups of living and non-living things. They had discussed the role of classification generally, and its specific role in science.

Students were required to make observations at a local wildlife park and to complete a number of tasks related to classifying the animals at the park. They were required to complete the task individually.

Worksheet: Classification

WHY CLASSIFY?

There are millions (maybe tens of millions) of different species on Earth – some organisms are clearly different, whilst others share many similar features. Compare a kangaroo and emu – they appear very different, but what features do kangaroos and emus have in common? What features make them different?

Complete the table below:

Feature	Kangaroo	Emu
Live on land	√	√
Feathers	X	√
Fur	✓	X
Pouch	✓	X
Long neck	X	✓

Many organisms share common features, which allow them to be grouped – this is classification. Scientists classify organisms to make them easier to identify. The classification system begins with very big groups (lots of organisms) and moves down into smaller groups (fewer organisms).

Questions:

1) Explain *why* scientists classify living organisms? To put them in groups.

2) Explain *how* scientists group organisms? They put them into plants and animal groups.

Annotations

Identifies some observable features of kangaroos and emus.

Identifies that scientists classify organisms to group them.

Worksheet: Classification

WHAT IS A DICHOTOMOUS KEY?

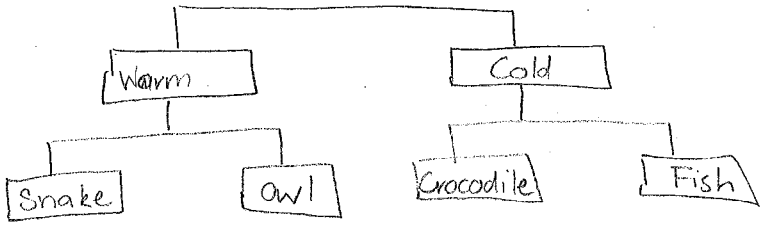
The word **dichotomous** means "divided in two parts". A dichotomous key consists of a series of two-part statements that describe the characteristics of living or non-living things. Each step of a dichotomous key presents two choices. Making the choice about a particular characteristic leads to a new branch of the key. Eventually you will be led to the name of the living or non-living thing that you are trying to identify.

Living things can be divided into five major kingdoms: Monera, Protista, Fungi, Plants and Animals. There are two main groups within the animal kingdom. Do you know what they are? Write their names in the space below.

Warm blooded and cold blooded

Your task is to create a **dichotomous key** that can be used to classify 6 different wildlife park animals. Be sure to choose animals from the two main groups that you identified above.

Fish
Crocodile
Snake
Owl



Annotations

Annotations (Overview)

The student uses language to communicate scientific ideas and findings.

Written test: Living together

Year 7 Science achievement standard

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Summary of task

Students had undertaken a unit of work on ecosystems and the ways in which biotic components interact within ecosystems. They completed various field, online and classroom-based activities where they explored the features of different ecosystems, the ways in which organisms interacted, and the impact of environmental changes on those relationships.

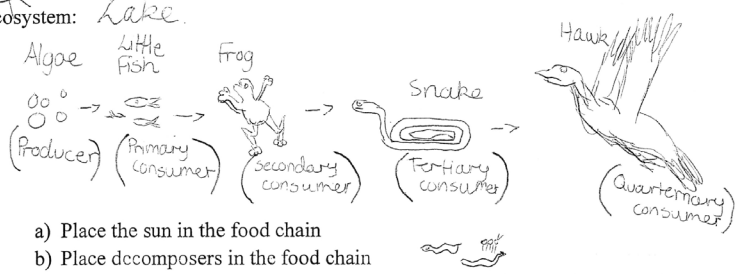
Students completed a written test at the end of the unit. They were provided with 50 minutes to complete the test. This work sample includes a selection of the test questions.

Written test: Living together

4. Create a food chain using the following animals: Place a name for the ecosystem, insert the arrows, draw and name the organism and label the consumer

- hawk, algae, small fish, snake, frog,

Ecosystem: Lake



a) Place the sun in the food chain
b) Place decomposers in the food chain
c) What would happen to this food chain if a plague of locusts destroyed the population of algae? Explain in detail.

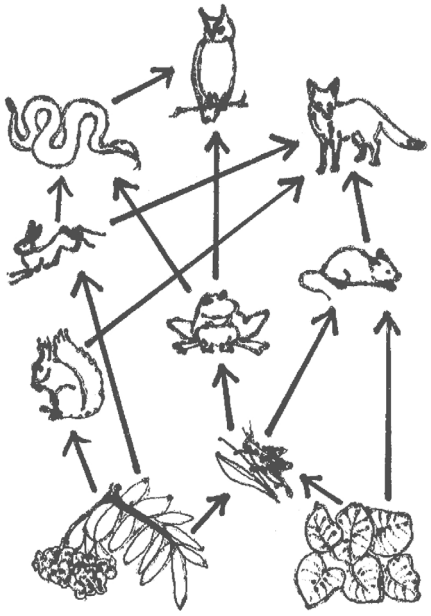
The Hawk would die and then the decomposers would.

Annotations

Constructs a plausible food chain using appropriate representations.

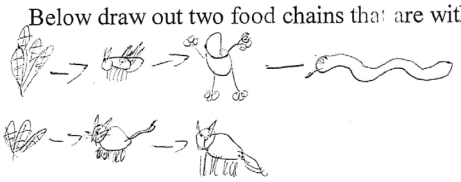
Classifies organisms according to their feeding relationships.

Written test: Living together



5. A Food Web illustrates many food chains and consumers

i) Below draw out two food chains that are within this food web



ii) If the rabbits were killed by hunters what would happen to the food web?

Their would be less snakes.

iii) What are the top predators within this food web?

Fox, Owl, Snake

iv) What ecosystem would this food web be in?

All of it

v) If the berries were all picked by humans to eat, what would happen to food web?

Their would be less grasshoppers & Squirrels

Annotations

Identifies two different food chains within a food web.

Makes plausible predictions about the effect of prey population change on a predator population.

Identifies that changes to producer populations impact primary consumer populations.

Annotations (Overview)

The student uses scientific language and constructs appropriate representations to communicate ideas.

Investigation poster: Parachute design

Year 7 Science achievement standard

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Summary of task

As part of a unit on unbalanced forces, students were assigned the task of investigating parachute design and constructing an experiment into one variable. Students independently selected their investigation question and designed an experimental method. They were required to present their method and findings in the form of a poster for an audience of their peers.

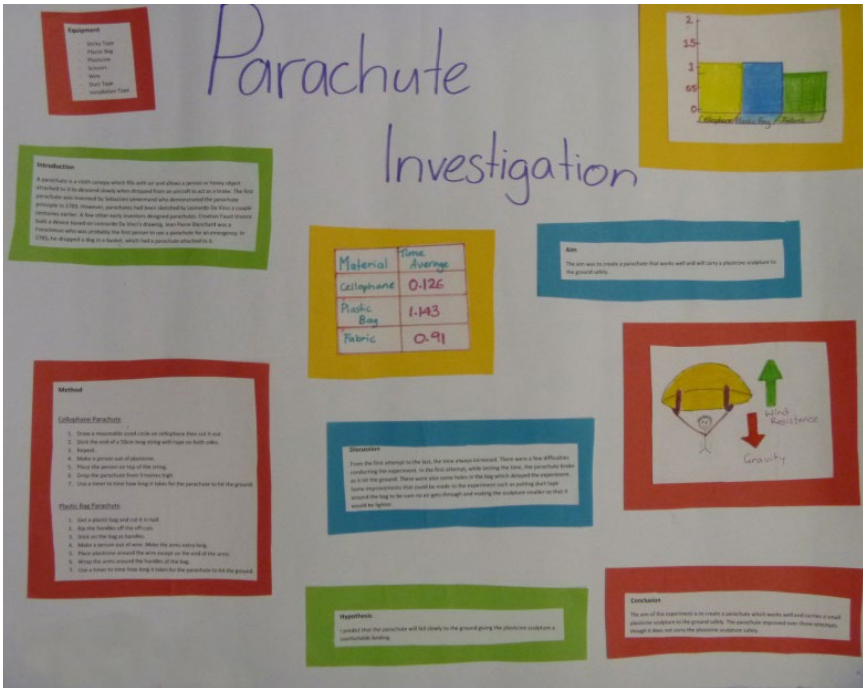
Students were provided with three lessons in class to design and conduct their investigation. They completed the work in their own time.

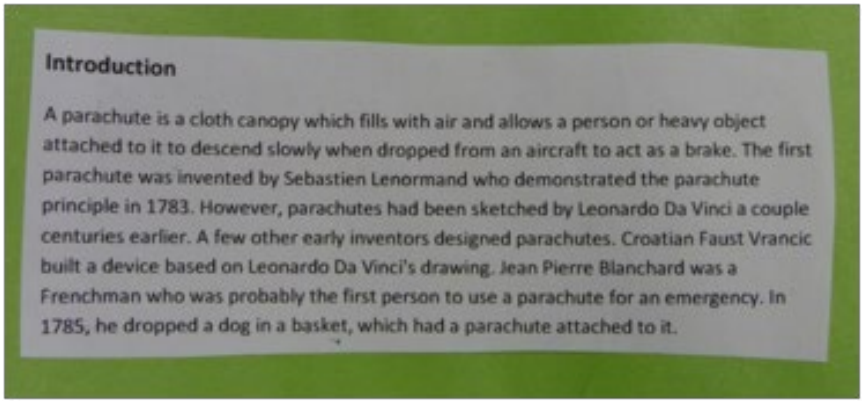
Science

Year 7

Below satisfactory

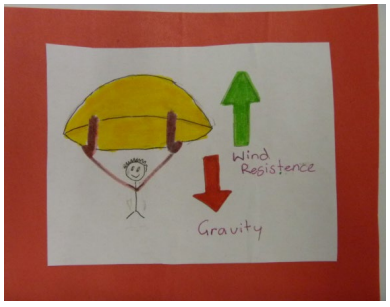
Investigation poster: Parachute design





Introduction

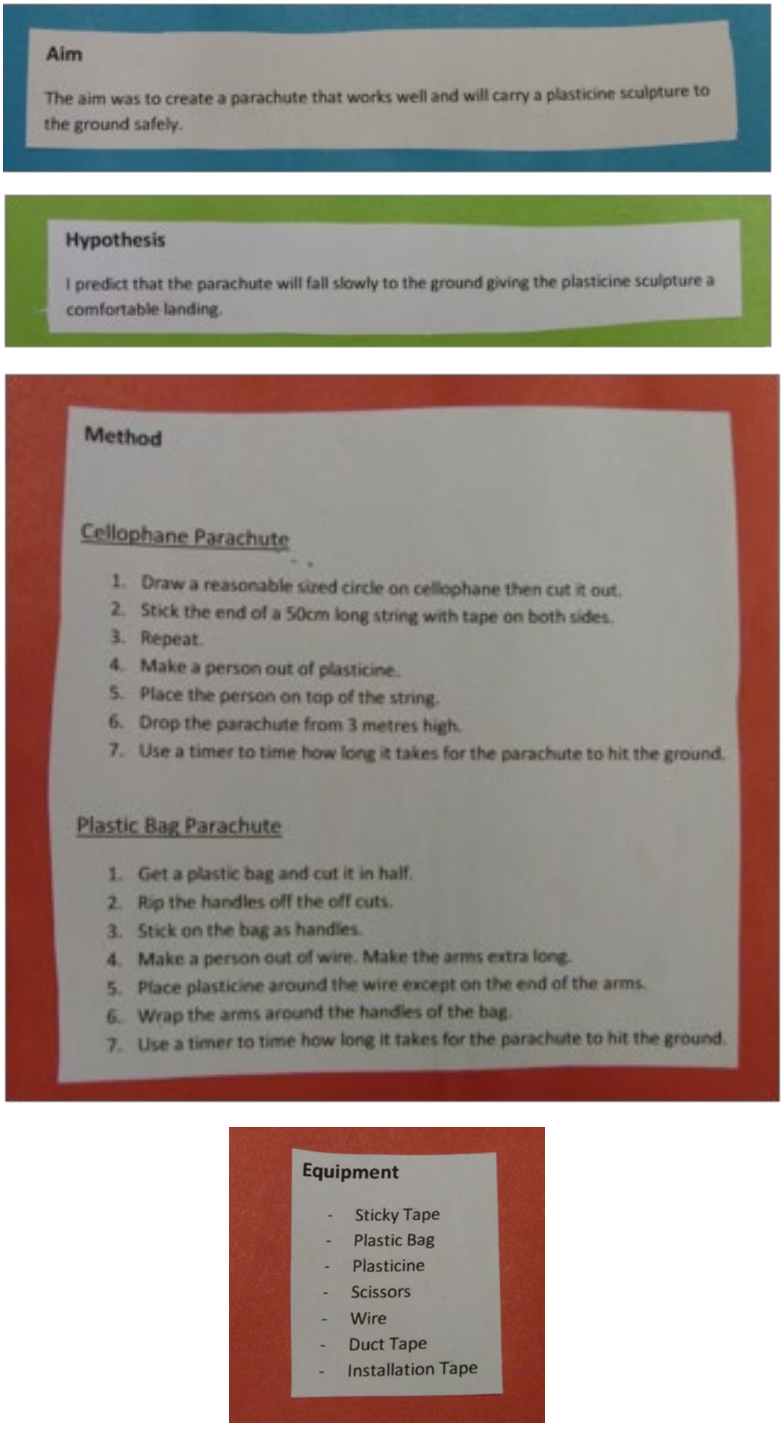
A parachute is a cloth canopy which fills with air and allows a person or heavy object attached to it to descend slowly when dropped from an aircraft to act as a brake. The first parachute was invented by Sebastien Lenormand who demonstrated the parachute principle in 1783. However, parachutes had been sketched by Leonardo Da Vinci a couple centuries earlier. A few other early inventors designed parachutes. Croatian Faust Vrancic built a device based on Leonardo Da Vinci's drawing. Jean Pierre Blanchard was a Frenchman who was probably the first person to use a parachute for an emergency. In 1785, he dropped a dog in a basket, which had a parachute attached to it.



Annotations

Constructs a force diagram to indicate the effects of gravity and wind resistance on the movement of the parachute.

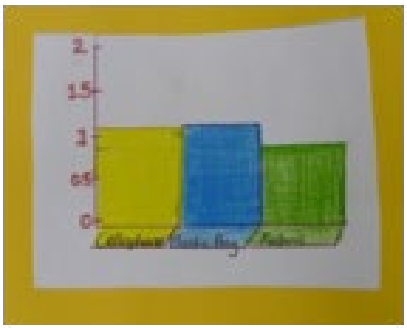
Investigation poster: Parachute design

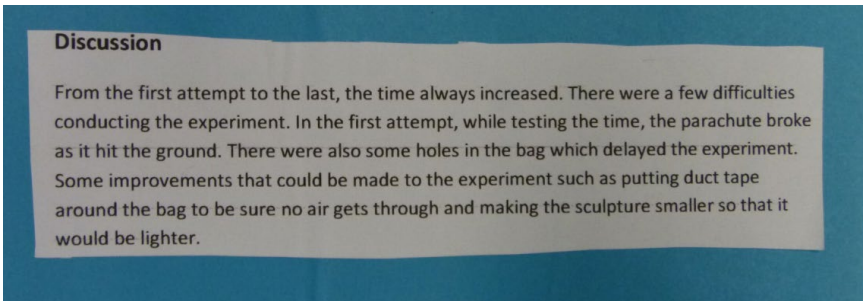


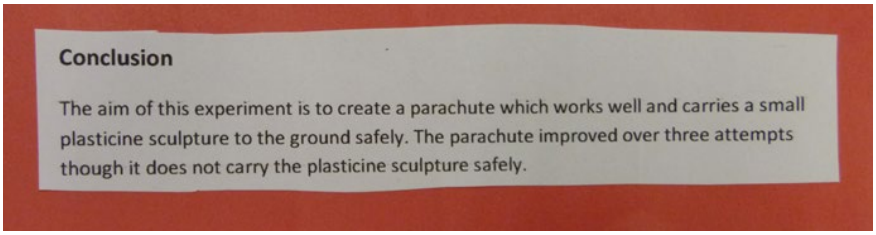
Annotations

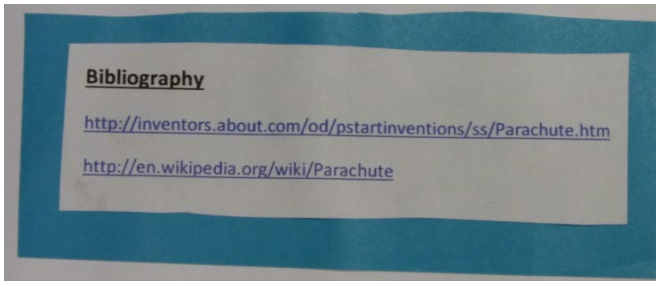
Plans a method and indicates that parachute material is the variable to be tested.

Investigation poster: Parachute design









Annotations

Constructs a table and a graph to represent data, using some graphing conventions.

Suggests improvements to the method and equipment used.

Draws a conclusion based on evidence gathered through investigation.

Acknowledges information sources.

Annotations (Overview)

Attempts to communicate methods and findings of an investigation in poster form with some use of scientific language and suitable representations.