Science

Year 2
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 2 SCIENCE

This portfolio provides the following student work samples:

Sample 1 Investigation: How to make water clean
Sample 2 Design task: Materials swap
Sample 3 Investigation: Pushing cars
Sample 4 Investigation: Water at home and at school
Sample 5 Worksheet: Life stages
Sample 6 Worksheet: Science in daily life
Sample 7 Investigation: Rocky road
Sample 8 Worksheet: Classifying mixtures

In this portfolio the student describes changes to the position of objects as a result of applying a push (WS3) and changes to living things, particularly growth and changes in behaviour (WS5). The student considers water as a resource and identifies its uses in daily life (WS4). The student investigates the properties and uses of a variety of materials and mixtures (WS2, WS7, WS8) and considers the best mix of materials to construct an object for a particular purpose (WS2, WS7). The student links science practices to activities in daily life, such as food production (WS7).

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The student demonstrates the ability to predict outcomes of investigations (WS1, WS3, WS7) and uses informal measurements (for example, ‘clear’, ‘biggest’, ‘harder’) when recording and comparing observations (WS1, WS3, WS7). The student conducts investigations (WS1, WS3, WS4, WS7), follows teacher instructions to record and represent observations (WS1, WS2, WS3, WS4, WS5, WS6, WS7) and communicates ideas to others using drawing, written text and labelled diagrams (WS1, WS2, WS3, WS4, WS5, WS6, WS7, WS8).

Investigation : How to make water clean

Year 2 Science achievement standard

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

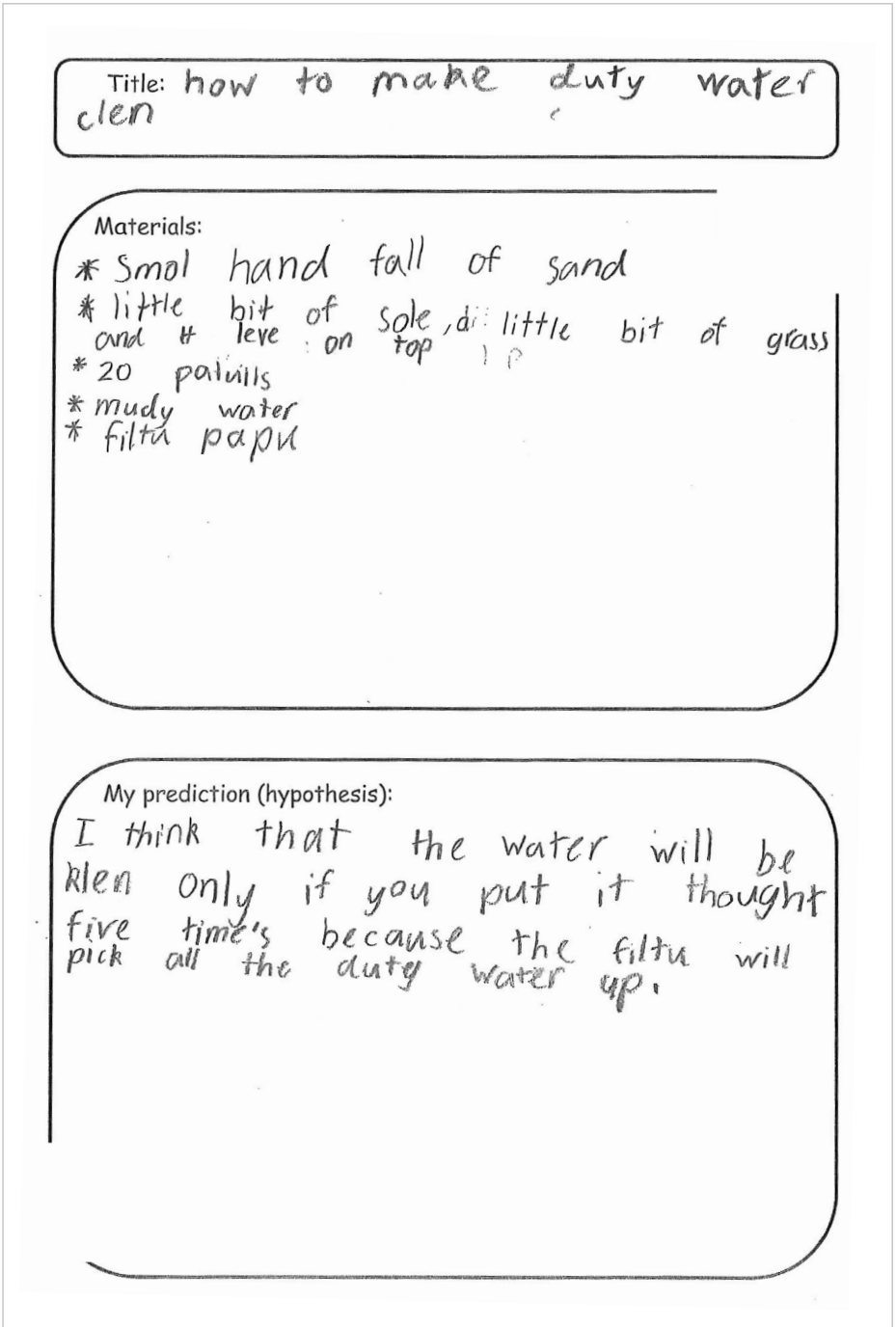
> *By the end of Year 2, students describe changes to objects, materials and living things. They identify that certain materials and resources have different uses and describe examples of where science is used in people's daily lives.*
>
> *Students pose questions about their experiences and predict outcomes of investigations. They use informal measurements to make and compare observations. They follow instructions to record and represent their observations and communicate their ideas to others.*

Summary of task

Students had engaged in class discussions about the use and cleanliness of water as part of a focus on sustainable use of resources. They had been explicitly taught how to construct a procedural text.

The students were shown a range of materials that could be used to filter dirty water. They chose between filter paper, cotton wool and gauze to construct their filter, then designed an experiment to investigate whether they were able to filter the water successfully. Students were provided with a template to help them to construct their investigation report, and the teacher took photos of their procedure to help them to construct the steps of the investigation.

Investigation: How to make water clean

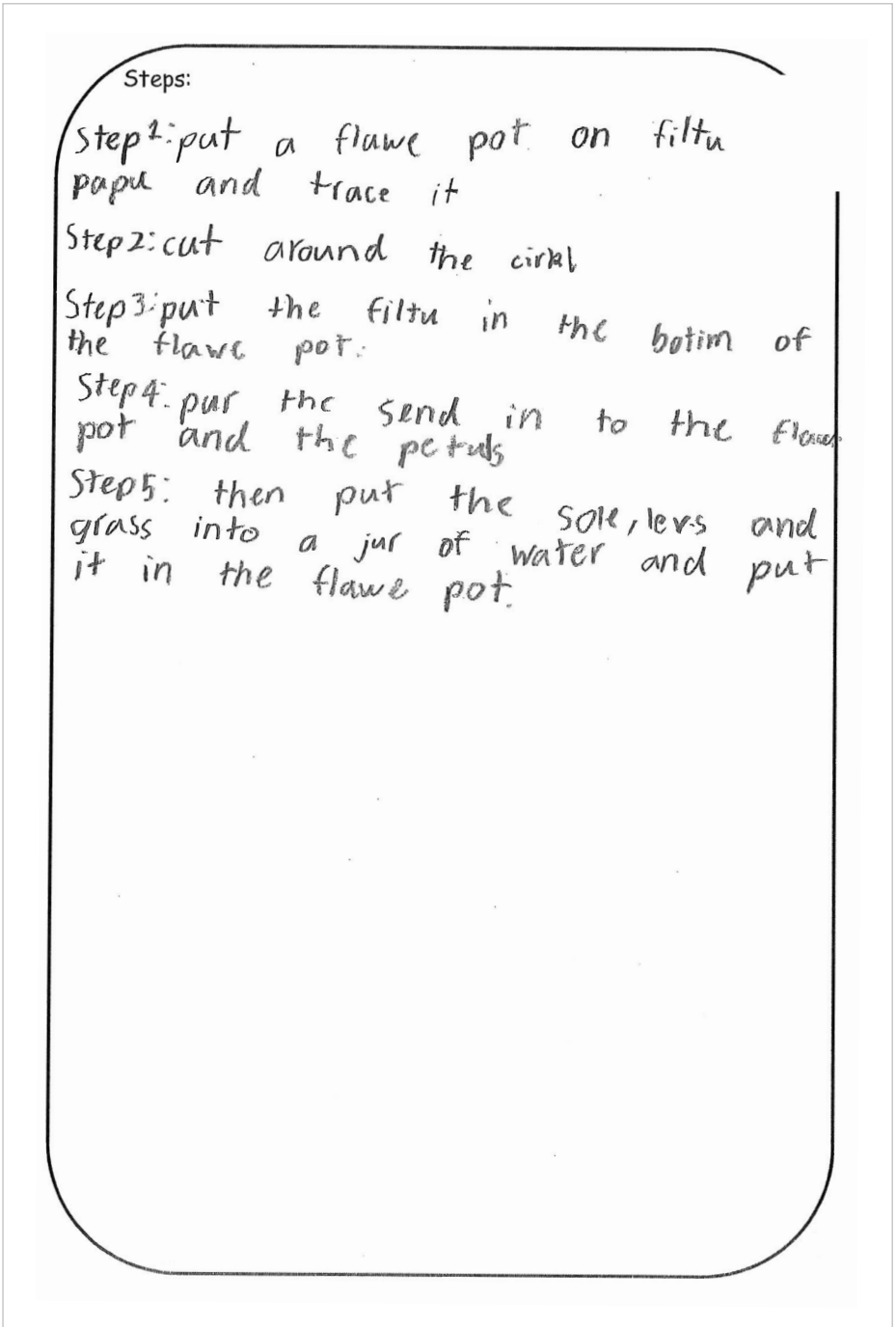


Annotations

Uses informal measurements to construct the investigation method.

Makes a plausible prediction about the effect of the filter.

Investigation: How to make water clean



Annotations

Records steps to investigate the effect of the filter.

Investigation: How to make water clean

Annotations

Records observations of the results, including informal measurements of the speed at which the water is filtered, and the quality of the filtered water.

Compares observations with predictions and identifies differences.

Annotations (Overview)

The student communicates ideas, investigation steps and observations through written text.

Design task: Materials swap

Year 2 Science achievement standard

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

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>
> *Students pose questions about their experiences and predict outcomes of investigations. They use informal measurements to make and compare observations. They follow instructions to record and represent their observations and communicate their ideas to others.*

Summary of task

Prior to undertaking this task, students participated in a materials treasure hunt around their classroom. They were asked to find all of the places where certain materials were used and provide an explanation for their use. For example, glass can be found in windows and doors because it is clear, which means we can see through it.

For the task itself, students focused on the materials in an umbrella. They were asked to identify the materials and consider why different materials were used. Students then completed a 'materials swap' in order to improve the umbrella. They were asked to draw their umbrella and explain which materials they had replaced and why.

Design task: Materials swap

Annotations

Suggests a plausible reason for the choice of material for one part of the object.

Identifies alternative materials to replace three different parts of the object.

Identifies that the object is made up of different materials.

Annotations (Overview)

The student communicates ideas through text and an annotated diagram.

Investigation: Pushing cars

Year 2 Science achievement standard

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

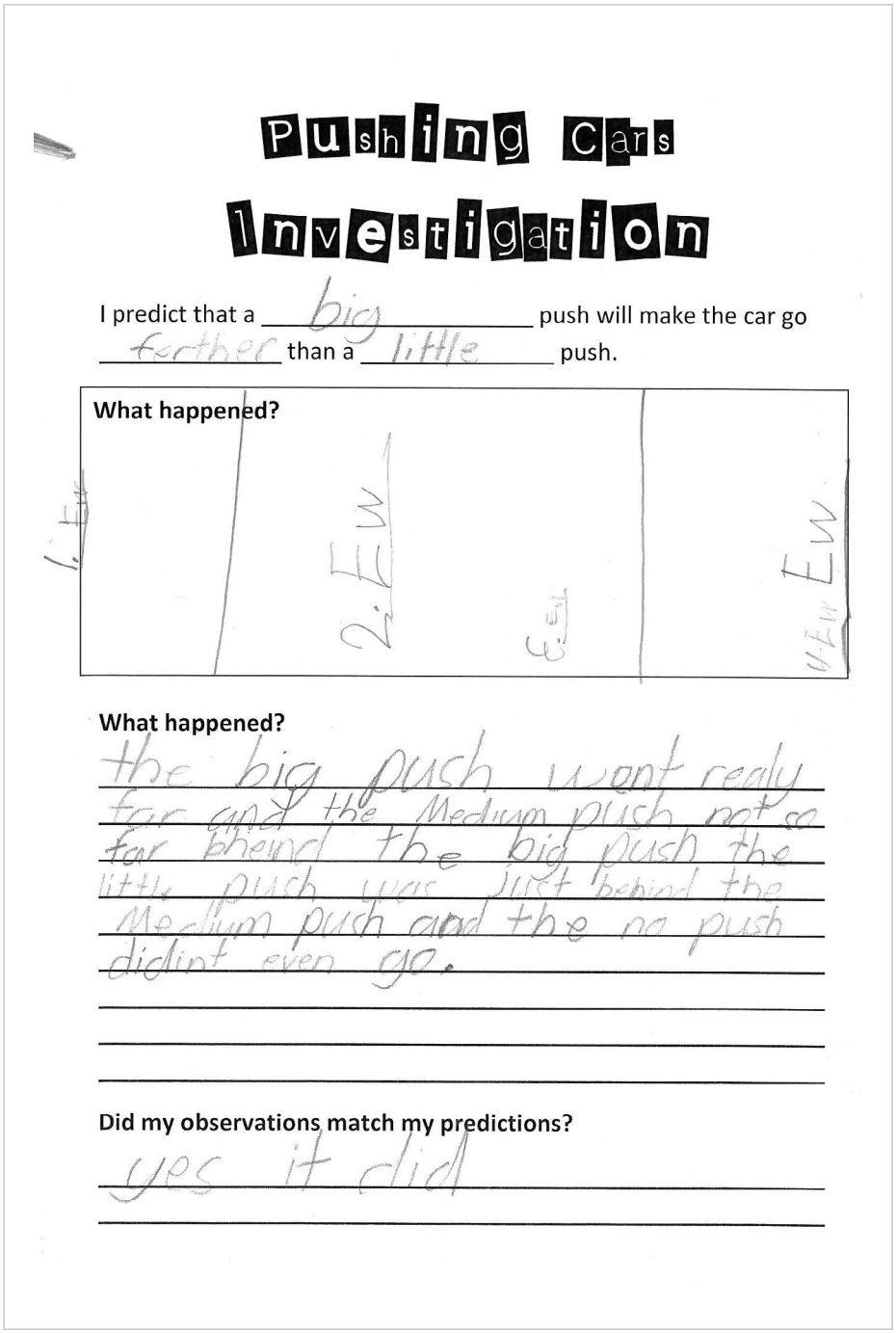
> *By the end of Year 2, students describe changes to objects, materials and living things. They identify that certain materials and resources have different uses and describe examples of where science is used in people's daily lives.*
>
> *Students pose questions about their experiences and predict outcomes of investigations. They use informal measurements to make and compare observations. They follow instructions to record and represent their observations and communicate their ideas to others.*

Summary of task

Prior to undertaking this task, students explored all the ways they could change the shape of objects, or the ways they could change how objects moved. They observed students on play equipment and discussed how different strengths of pushes and pulls were involved in changing movement.

Students were asked to investigate the effect of different-sized pushes on the movement of a toy car. They were given an investigation worksheet to complete, but were required to develop their own means of describing and comparing their results. Students worked in small groups to complete the investigation and then developed their reports independently.

Investigation: Pushing cars



Pushing Cars Investigation

I predict that a big push will make the car go farther than a little push.

What happened?

What happened?

the big push went really far and the Medium push not so far behind the big push the little push was just behind the Medium push and the no push didint even go.

Did my observations match my predictions?

yes it did

Annotations

Makes a prediction that links the size of the push to the distance it will travel.

Uses informal measurements to make observations.

Constructs a representation to share observations.

Describes observations and identifies that each different strength of push resulted in a different distance travelled, including that no push means the car didn't travel at all.

Annotations (Overview)

The student communicates ideas and observations through written text and an annotated diagram.

Investigation: Water at home and at school

Year 2 Science achievement standard

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

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>
> *Students pose questions about their experiences and predict outcomes of investigations. They use informal measurements to make and compare observations. They follow instructions to record and represent their observations and communicate their ideas to others.*

Summary of task

Prior to undertaking this task, students had engaged in a class discussion about where water was used at school and for what purposes. They recorded and shared their ideas as a class, grouping ideas under the headings of 'Where does water come from?', 'What is water used for?', 'Who or what uses water?' and 'What does it mean to use water responsibly?' Students then walked around the school to confirm or modify their ideas.

Students were asked to complete a homework task to identify the uses of water at home. They then spent time in class to organise their ideas about water use at home and at school in a graphic organiser. Students spent approximately two hours on the combined elements of the task.

Investigation: Water at home and at school

Annotations

Identifies multiple examples of places in the home where water is found.

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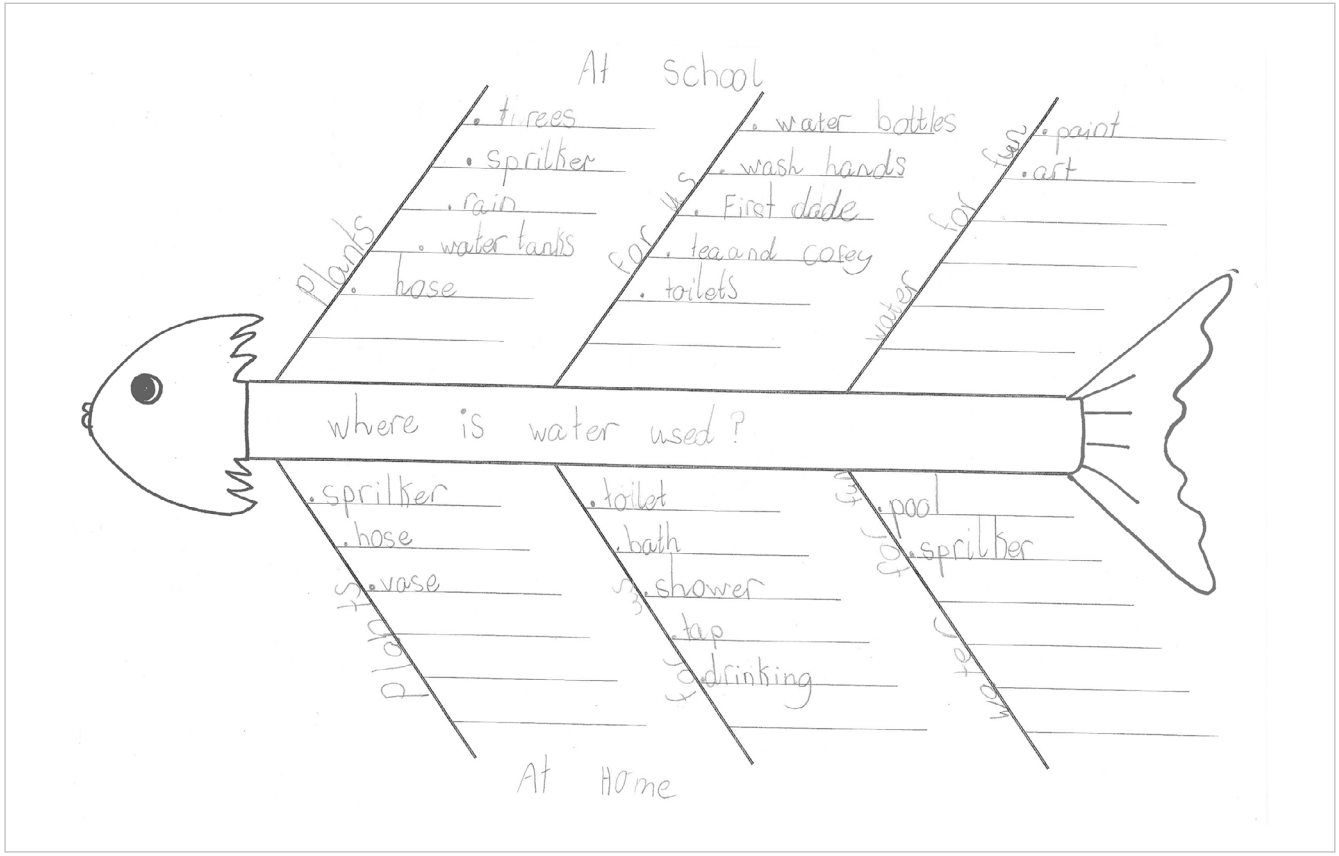
Investigation: Water at home and at school



Annotations

Sorts and records observations in provided graphic organiser.

Identifies a range of examples of water usage at home and school, including for growing plants, drinking, cleaning and leisure activities.

Annotations (Overview)

The student communicates ideas through annotated drawings and written text.

Worksheet: Life stages

Year 2 Science achievement standard

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

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>
> *Students pose questions about their experiences and predict outcomes of investigations. They use informal measurements to make and compare observations. They follow instructions to record and represent their observations and communicate their ideas to others.*

Summary of task

Students had watched some videos, read some books and observed some germinating plants to explore the ways in which living things grow and develop. They had discussed examples of living things, characteristics of their life stages and the language associated with those stages.

Students were given the worksheet following a review of their learning in the unit. The teacher guided students through the instructions and they then completed the task independently over an hour.

Worksheet: Life stages

Life stages

Draw lines to match the life stages of these living things:

A

B

Choose one picture from column A and explain how it turns into the picture in column B.

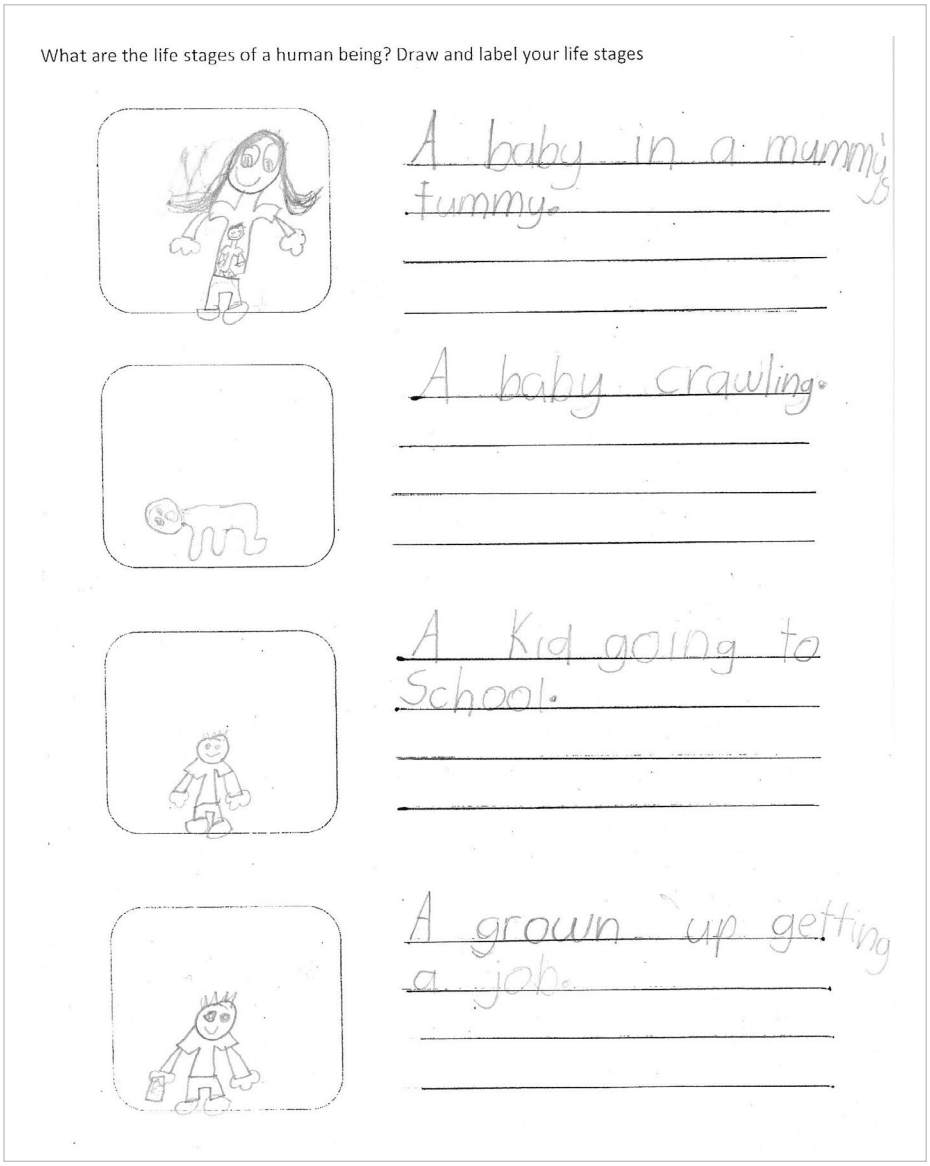
It starts off as a tadpol then it get's legs and then it is a frog.

Annotations

Links the life stages of a variety of living things.

Describes some life stages of a frog.

Worksheet: Life stages



Annotations

Identifies birth as a key stage in human development.

Identifies changes in personal activity associated with life stages.

Annotations (Overview)

The student communicates ideas through drawings and written text.

Worksheet: Science in daily life

Year 2 Science achievement standard

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

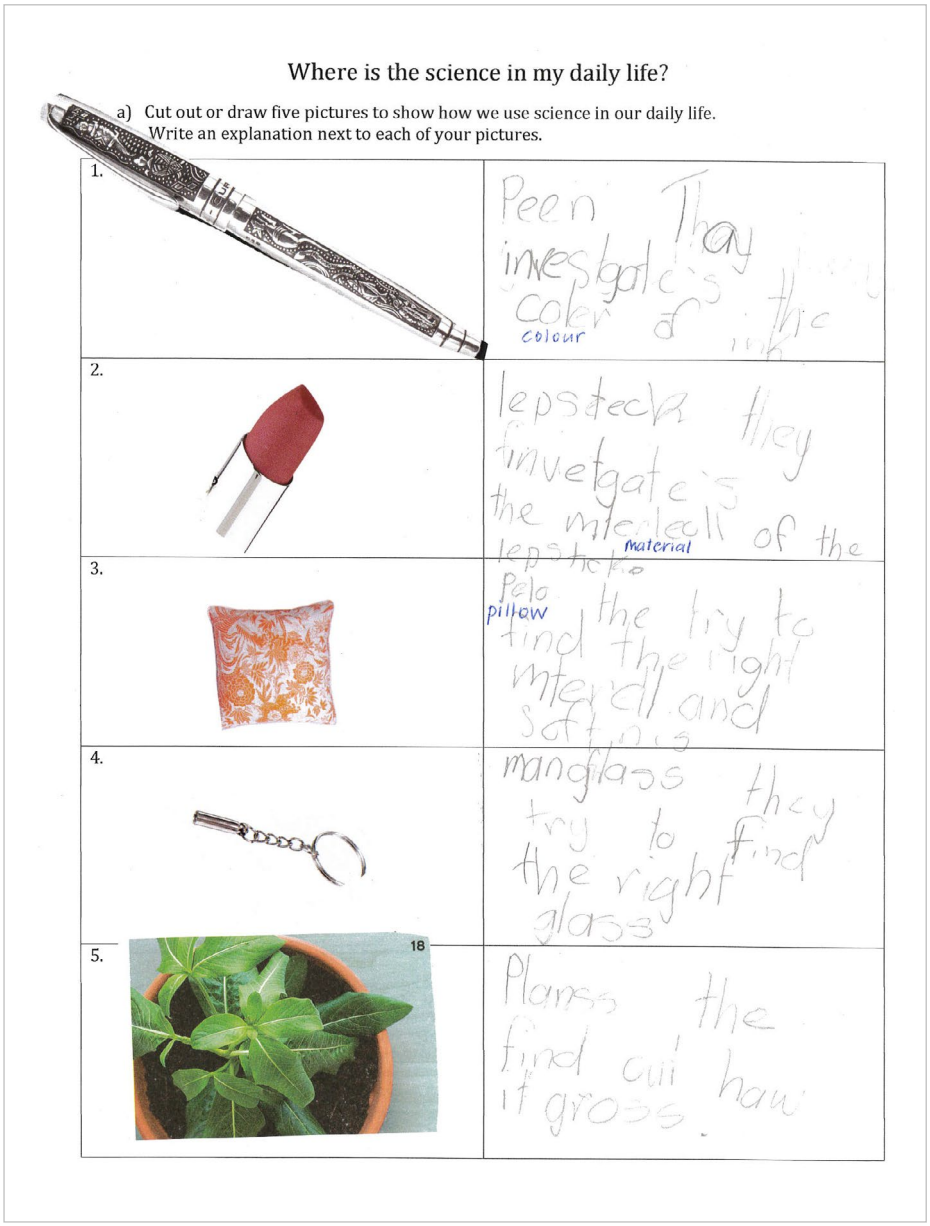
> *By the end of Year 2, students describe changes to objects, materials and living things. They identify that certain materials and resources have different uses and describe examples of where science is used in people's daily lives.*
>
> *Students pose questions about their experiences and predict outcomes of investigations. They use informal measurements to make and compare observations. They follow instructions to record and represent their observations and communicate their ideas to others.*

Summary of task

As part of their science investigations, students had discussed examples of where science is used in daily life, including identifying instances in shared reading.

Students were given a task sheet and a pile of magazines. The teacher read through the instructions on the task sheet with the class and reminded them of safety rules for using scissors. Students then completed the task independently over one hour. Following completion of the table, students were asked to write a sentence at the bottom of the sheet answering the question, "What do scientists do?"

Worksheet: Science in daily life



Where is the science in my daily life?

a) Cut out or draw five pictures to show how we use science in our daily life.
Write an explanation next to each of your pictures.

1. Peen Thay investigates color of the ink (colour)
2. lepstecks they invetgates the metall of the lepsteck (material)
3. Pelo (pillow) the try to find the right mterall and soft
4. mangfass they try to find the right glass
5. Plants the find out how it grows

18

Annotations

Identifies a variety of ways science is involved in aspects of everyday life, including design and selection of materials and study of living things.

Completes a provided table to record ideas.

Annotations (Overview)

The student communicates ideas through selected images and written text.

Investigation: Rocky road

Year 2 Science achievement standard

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

> *By the end of Year 2, students describe changes to objects, materials and living things. They identify that certain materials and resources have different uses and describe examples of where science is used in people's daily lives.*
>
> *Students pose questions about their experiences and predict outcomes of investigations. They use informal measurements to make and compare observations. They follow instructions to record and represent their observations and communicate their ideas to others.*

Summary of task

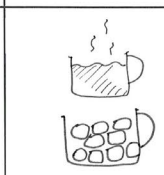
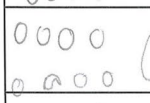
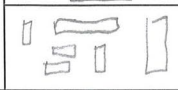
Students had investigated mixing and separating a variety of substances using different methods. They had discussed ways in which mixing substances is part of everyday life.

Students were provided with a range of potential ingredients for rocky road. They observed each ingredient and predicted what it would do when added to the rocky road mixture. They followed instructions to make a basic rocky road recipe and also made a recipe using their own choice of ingredients. They observed the end results and compared their own and others' recipes. They reflected on their predictions and communicated their findings.

Investigation: Rocky road

ROCKY ROAD

Choose 2 extra ingredients to add to the basic recipe.

	PICTURE	INGREDIENTS	DESCRIPTION	PREDICTION
Basic Recipe		Chocolate	Brown, runny, gooey, hot	Will set and hold mixture together
		Marshmallows	Squishy, pink, soft, white, round, sweet	The crocket will get squishy
1. Draw pictures in a cup or on a spoon 2. Choose 2 to add to the basic recipe		Corn Flakes	hard, yellwe, bumpy and cracly	The crocket well get hader -
		Smarties	colifol, chocketey, yummy and in side brone.	cracly and more choclety
		Sultanas	sticky, brown descening and round	Soft and hard
		Rice Bubbles	hard, tayslys cranchy and white	melty
		Coconut	hard, white, good Smelly, math, rectangol and yummy	nise Smell It wood turn white
		Icing Sugar	white, thern, smely and soft	The coclete we get Soft!
		Water	See throw, wighly wary and wet	The coclete we melt and watery
		Cheese	Soft, dilibles, yollye, smelly and spred	cheysy and softer

I'm going to add coconut and Smarties.

because I want my Rocky Road to be fantastik! because it will be squishy, little bit hard and rainbow!!!

Annotations

Observes and records properties of each ingredient.

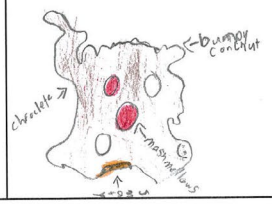
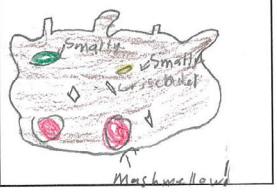
Predicts how different ingredients will affect the properties (texture and taste) of the mixture.

Selects ingredients and predicts how they will affect the properties (texture, hardness and colour) of the mixture.

Investigation: Rocky road

ROCKY ROAD

Draw and label a cross-section of:

The basic recipe	Your recipe	A different recipe combination
		

How are the mixtures different?

Min is bumpy because I put coconut and smarties in it. The other one is difrent because it is smely because it has rise bubbul. the other One was hader.

I was a chef when I .....

When I put ingredeans in to a Rocky Road.

I was a scientist when I ..... Stird stuff arounds mixes then to gether

Annotations

Represents observations using labelled diagrams.

Compares two mixtures using informal measurements and explains how they are different.

Identifies that science involves mixing materials, and links this to food preparation.

Annotations (Overview)

The student completes a template to record observations and communicate ideas using written text, drawing and diagrams.

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Investigation: Rocky road

Annotations

Worksheet: Classifying mixtures

Year 2 Science achievement standard

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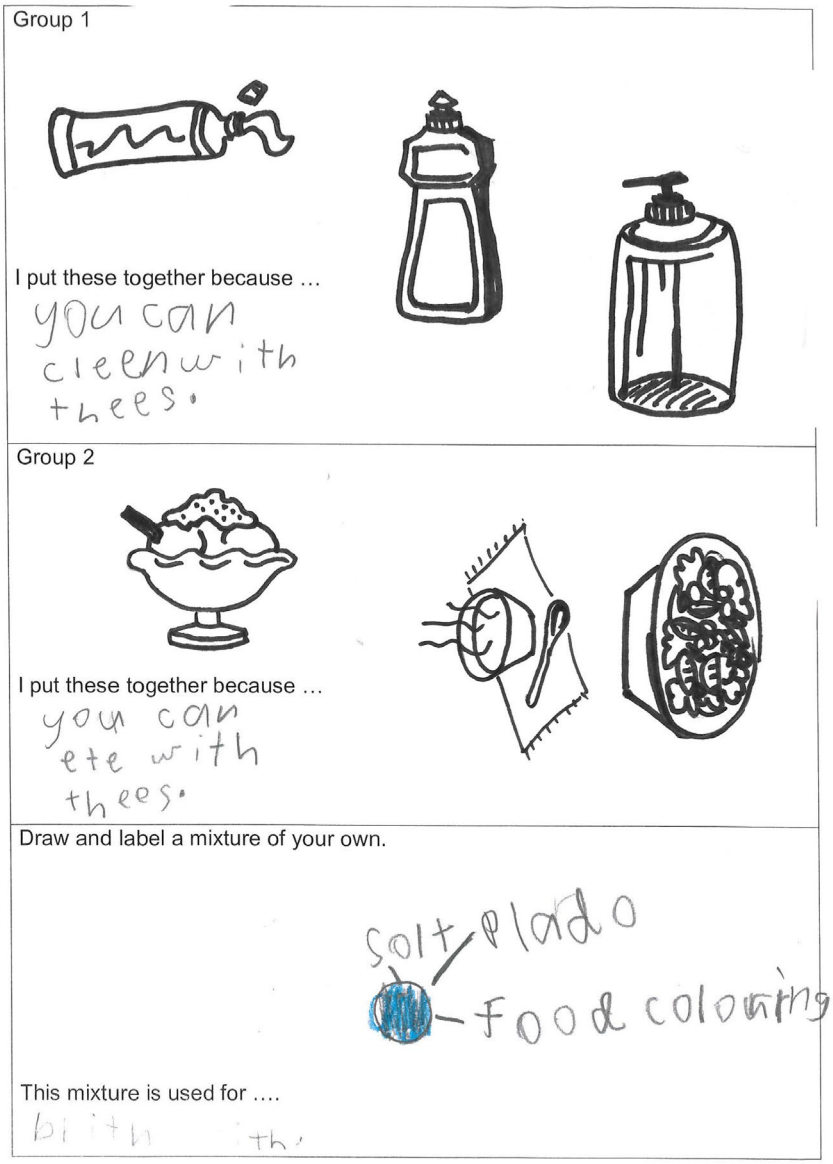
Summary of task

Students were provided with images of a range of mixtures they might find around their home. The class discussed what familiar mixture each image represented. Students were then required to sort the mixtures into two groups and to explain their classification, and to draw and label a familiar mixture and describe its use.

Worksheet: Classifying mixtures



Annotations

Groups mixtures based on their use in the home.

Identifies a familiar mixture and indicates the materials in it.

Identifies a use for the chosen mixture.

Annotations (Overview)

The student completes a template to communicate ideas using written text and drawing.