Kingsmead School
Science Transition Work
2023

Name: _____

Primary School: _____

Science is the most fascinating subject you can study and we know you will love learning science at Kingsmead.

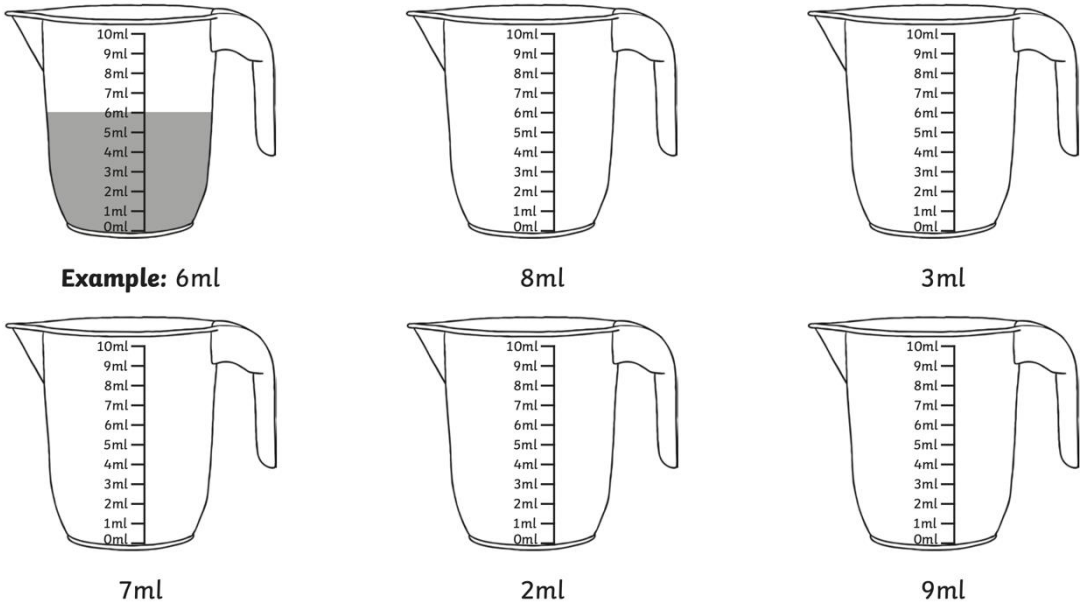
We want you to be well prepared to study science at secondary school. This workbook will help bridge the gaps between primary and secondary school science

This workbook should be completed and brought to school in your first week at Kingsmead

It is really important that scientists make accurate measurements. Us ethe next few tasks to practice reading measurements from scales

Task 1

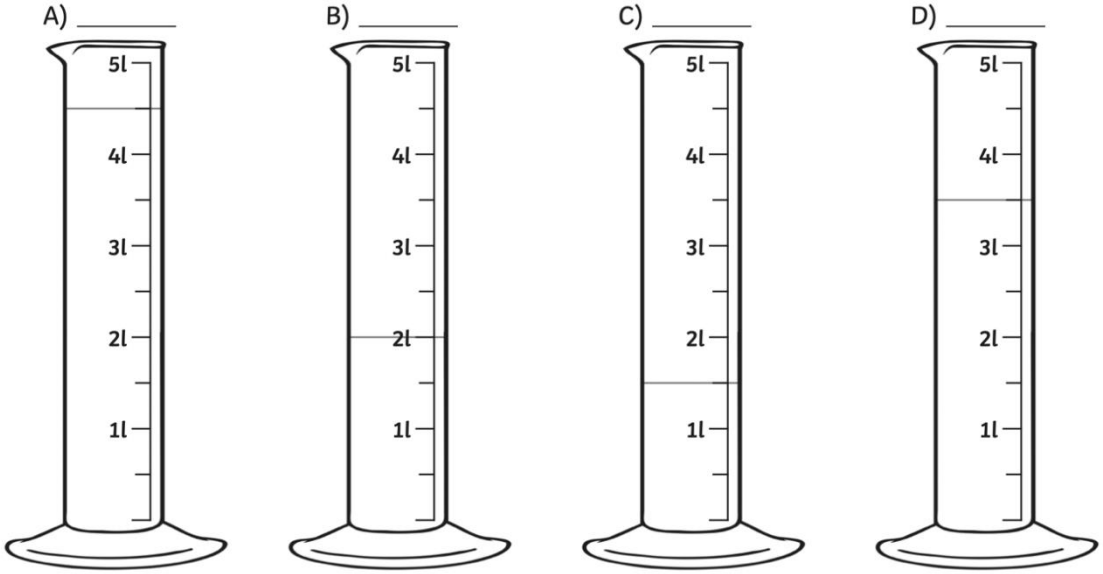
Look at the images below colour in the jug to show the volume of water written under each jug.



Task 2

There are 1000 ml in a litre.

Read the measurement from each of the measuring cylinders and write the number of **litres** in the container



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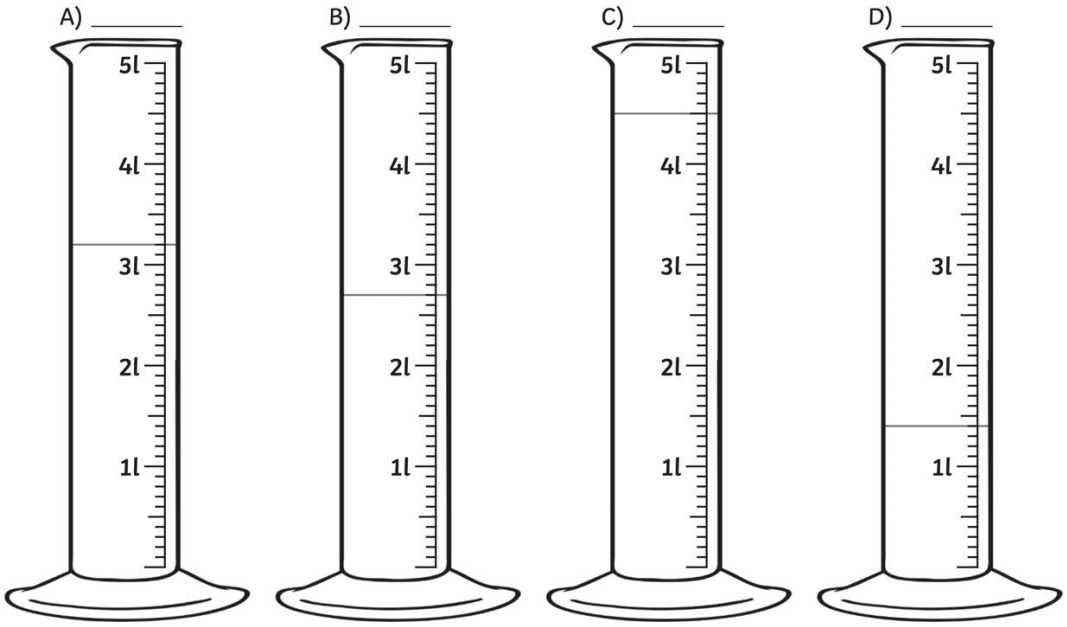
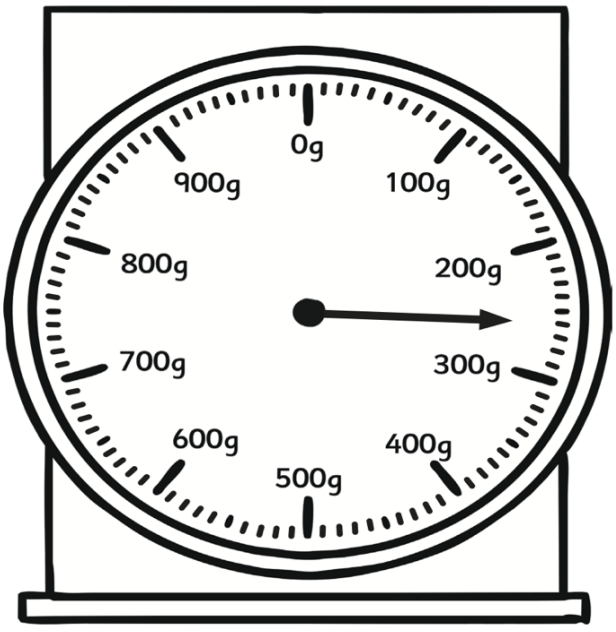


Task 4

Weighing scales can be read like a clock, the dial indicator moves as the weight increases. Each big line is 100g, each small line is 10g, the arrow shows 260g.



Draw arrows on the scale to show these weights:

a. 520g

b. 400g

c. 960g

d. 1000g

e. 180g

Science at home

Using measurements is really important when baking and following recipes. Why not try baking these (or any other muffins or cakes you want to)

Ingredients

- 100g unsalted butter softened, plus 1 tbsp, melted, for greasing
- 140g golden caster sugar
- 2 large eggs
- 140g natural yogurt
- 1 tsp vanilla extract
- 2 tbsp milk
- 250g plain flour
- 2 tsp baking powder
- 1 tsp bicarbonate of soda
- 125g pack blueberries (or use frozen)

Method

STEP 1

Heat oven to 200C/180C fan/gas 6 and line a 12-hole muffin tin with paper cases. Beat the butter and caster sugar together until pale and fluffy. Add the eggs and beat in for 1 min, then mix in the yogurt, vanilla extract and milk. Combine the flour, baking powder and bicarb in a bowl with ¼ tsp fine salt, then tip this into the wet ingredients and stir in. Finally, fold in the blueberries and divide the mixture between the muffin cases.

STEP 2

Bake for 5 mins, then reduce oven to 180C/160C fan/gas 4 and bake for 15-18 mins more until risen and golden, and a cocktail stick inserted into the centre comes out clean.

STEP 3

Cool in the tin for 10 mins, then carefully lift out onto a wire rack to finish cooling. Will keep for 3-4 days in an airtight container – after a day or two, pop them in the microwave for 10-15 secs on high to freshen up.

Task: In the box below evaluate your baking
What went well? How were you accurate? What problems did you have? What would you do different next time?

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Conversions

Scientists often need to use measurements of volume and mass using different units, being able to convert from ml to l or kg to g is an important skill. Use the table below to help you answer the following questions.

Mass				
1kg	1000g	Or	1g	0.001kg
Length				
1km	1000m	Or	1m	0.001km
1m	100cm	Or	1cm	0.01m
Volume				
1l	1000ml	or	1ml	0.001l

1)	1 kg = _____ g	2)	2kg = _____ g
3)	3kg = _____ g	4)	4kg = _____ g
5)	5kg = _____ g	6)	6kg = _____ g
7)	1 L = = _____ mL	8)	2 L = _____ mL
9)	3 L = _____ mL	10)	4 L = _____ mL
11)	5 L = _____ mL	12)	6 L = _____ mL

Which is the most? Circle the largest amount in each box.

1 kg	2 L	600 g	3L
100 g	1950 mL	4 kg	3090 mL
500 g	2100 mL	3500 g	3200 mL

Use greater than (>), less than (<) or equals (=) to compare the amounts.

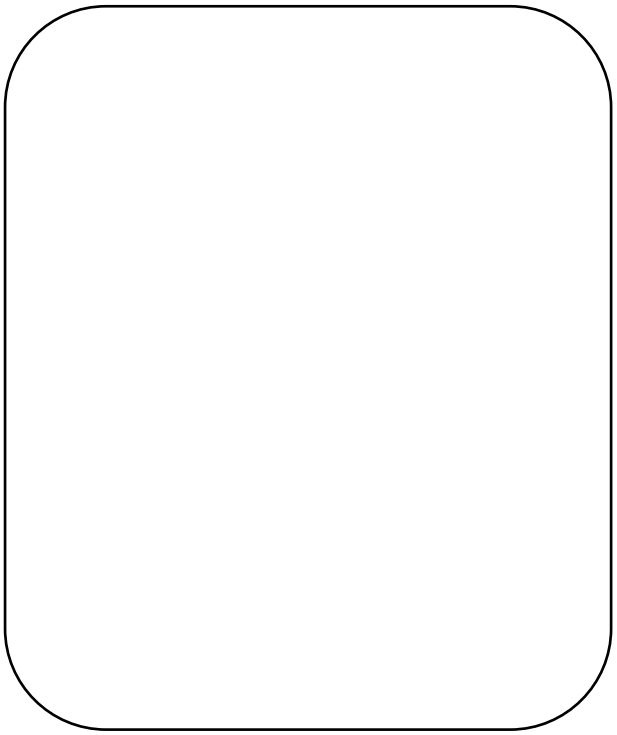
1)	1 L	>	50 mL	2)	1000 mL		1 L
3)	2 kg		1500 g	4)	4000 g		3 kg
5)	700 mL		1 L	6)	1400 mL		1 L
7)	2000 g		2 kg	8)	3 L		2700 mL
9)	5 kg		4500 g	10)	3200 g		3 kg

Biology

Biology is the study of living things and the processes that living things carry out and how living things interact.

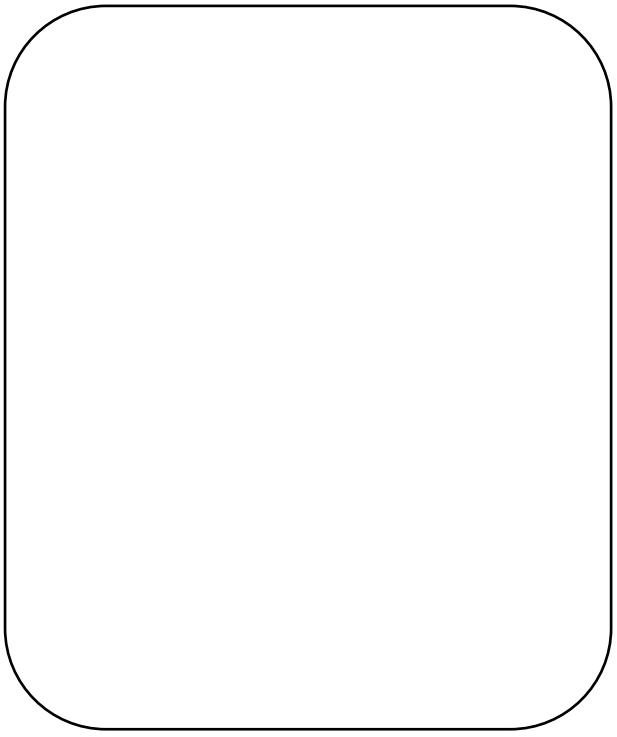
Air, Land and Sea Animals

Draw animals or plants in the squares that live in the air, land or sea.



Air

Draw three animals or plants that live in the air (up high).



Land

Draw three animals or plants that live on the land.

Sea
Draw three animals or plants that live in the sea.

The Island

Imagine an island like the one below.

About the island

- Salt water is the predominant water source on the island
- Due to the stony/sand based land there is little food available on the ground level
- Large carnivorous predators roam the island during daylight hours (think t-rex)
- During monsoon season there are frequent floods
- Following monsoon season there are periods of drought
- Temperatures are high in the day time but drop low at night

An adaptation is a special feature that an animal or plant may have that helps it to survive.

Research at least 3 different adaptations that would be useful for an animal living either in the sea, in the trees or on the mountain of the island.

1. _____
   _____
   _____
2. _____
   _____
   _____
3. _____
   _____
   _____

Design an animal that could survive on the island. Don't forget to label it and explain how it's adapted!

Chemistry

Chemistry is the study of chemicals and materials and how they occur naturally and by design. Chemistry explains why some chemicals react and others do not.

Materials & their properties:

Materials are chosen for certain jobs because for their properties. For example glass is chosen for windows because it is transparent.

Copy out the sentences and complete them by putting in the **best** word or words from the box. You can use the words more than once.

wear resistance	**strong**	**heat insulation**
hard	**good conductor**	**flexible**

1. Copper is used to make electrical wires because it is a _____ _____ of electricity.
2. Materials which are used to make school carpets should have good _____ _____.
3. Concrete makes a very _____ base for a building.
4. Steel is used to make the head of a hammer because it is very _____.
5. Electric cables are covered with plastic because it is an _____ _____.

6. Plastic is also a good choice for covering wires because it is _____.

7. Duvets are sometimes filled with duck feathers because they have good _____ _____.

Use the words in the box to write sentences that explain why these materials are chosen for a saucepan:

8. Metal for the sides and base.

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9. Plastic or wood for the pan handle.

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10. Why aren't saucepans made completely out of metal?

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11. Layla collects different objects from the kitchen. She looks at some of the properties of the materials these objects are made from.

Some rows in the table have been completed. Complete the rest by adding a ✓ or ✘ in each empty box in the table to show the properties of the materials.

Material/Object	Flexible	Hard	Transparent
aluminium foil	✓	✘	✘
wax candle			
wooden rolling pin			
plastic food wrap			
glass			

12. Aluminium foil is flexible. Write about **ONE** use of aluminium foil where it is important that it is flexible.

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Reversible changes

SCAN ME

13. Layla knows some changes are reversible. Can you explain what this means?

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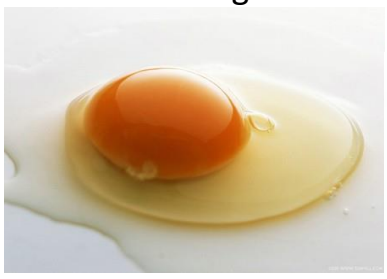
14.
Extended writing. Write a paragraph about some changes that you might see in the kitchen.
Here are 3 things that are often heated in the kitchen.



For each one:

- Describe what you would observe while the heating is happening (what would you see, smell and hear?).
- Identify whether the change you are writing about is reversible or not.
- Explain why you think it is reversible or not.

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Challenge: Can you do this experiment at home and answer the same question about what you did? Can you think of a way to test whether you were correct?

Sugar Crystal Sparklers

Science Experiment

You will need:

Very hot water

Jug

Spoon

Wooden skewer (blunt if possible)

Sugar

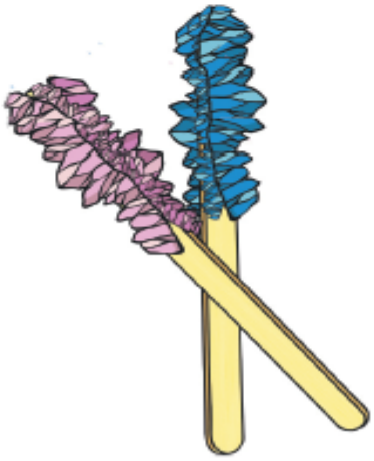
Food colouring

Jar

Clothes peg

Method

1. Before the activity, pour a cup of very hot water (just-boiled water works best so an adult should do this step) into the jug.
2. Add a cup of sugar to the mixture, a spoonful at a time and stir the mixture until all the sugar dissolves. As the water is still very hot, this step is best do to before children participate in the experiment.
3. Carefully pour the mixture into the clean jar.
4. Add a few drops of food colouring to the mixture and stir.
5. Dip the skewer into the warm mixture and then sprinkle some extra sugar onto the wet end of the skewer and leave it to dry.
6. Once the mixture in the jar has cooled, attach a clothes peg to the clean end of the skewer and balance it on the jar, so that the sugary end of the skewer is in the sugary mixture.
7. Leave the jar in a warm place for a few days and watch as sugar crystals develop on the end of the skewer, making a sugar crystal sparkler!



Physics Transition Project 2021

One topic that we study in Physics is space. By the end of this worksheet, you should be able to:

1. …describe the movement of the Earth, and other planets, relative to the Sun in the solar system
2. …describe the movement of the Moon relative to the Earth
3…use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

The QR codes (odd black boxes) can be scanned with your phones to watch videos (if you are at home) or just click the link to go to them.

Section 1: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system

Task 1. Watch this video and write down 2 facts about each planet in the Solar System.

https://youtu.be/w36yxLgwUOc

Facts about the planets:

Mercury_____

_____

_____

Venus_____

_____

_____

Earth_____

_____

_____

Mars_____

_____

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Jupiter_____

_____

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Saturn_____

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Uranus_____

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Neptune_____

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Task 2. Write down 4 questions based on some of the facts you have written down.

Q1_____

_____

Q2_____

_____

Q3_____

_____

Q4_____

_____

Section 2: Describe the movement of the Moon relative to the Earth

Watch the next video and write down any words that are new to you. You can pause the video and copy the word down from the closed captions (subtitles). Try and listen to what the word means and write down a definition for at least 3 of the words.

https://youtu.be/93z3QC1pzCA

New word
1 :_____
Definition :-

_____

_____

New word
2 :_____
Definition :-

_____

_____

_____

New word
3 :_____
Definition :-

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Section 3: Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Watch this video and then answer the following 5 questions:

https://youtu.be/6SzjlsuyTdk

1. What is the Earth's 'axis'?

_____

_____

2. What is the circular movement of an object spinning on its axis called?

_____

_____

3. Why do we have day and night?

_____

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4. How long does it take for the Earth to rotate once on its axis?

_____

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5. What is a year? (the answer here is not 365 days!)

_____

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