Contents – click on the link below

How to use this work program

Accessing the online resources

To access the online resources, please go to: https://www.backtofrontmaths.com.au/b2fmathshome

Running the program each week

Each week is designed with five maths lessons so that you can do it each day. Different days have different types of lessons to make sure that students experience the kind of thinking that they need to continue growing in maths. The types of lessons include:

- **At-home investigation:** This is a hands-on task where students explore a new idea before they are taught that skill. They need to come up with an idea to try to solve the problem, try out their idea, decide if it worked or not, try again if needed, and explain what they did.
  If your child has time with your teacher with a webcam, the teacher will generally be doing this lesson with your child. This is the lesson that will require the heaviest input from you to help your child think through an idea and generally requires the use of some hands-on materials that are listed in the information page.
- **Connecting lesson:** This type of lesson has questions that lead students to develop their ideas and learn a new skill. It should be fairly easy for a student to do, but you will need to be available to read the question to your child as needed, encourage them to think further, and make sure that they complete the work. Most of these lessons will include 10 minutes of practising number operations or concepts through activities or games.
- **Interleaved practise lesson:** This type of lesson provides 8-10 questions from different areas of maths so that students practise remembering what they have previously been taught. Some of the questions may not be easy for your child, so feel free to help whenever you see them struggling.
- **Generalising lesson:** This lesson contains some extension material for use if your child found the week's lessons too easy. *If you would prefer*, you can spend this lesson playing more of the number games that are included in the connecting lesson or giving your child time to complete any of the lessons that they have not yet done.

Getting help

The website above will have answers to frequently asked questions as well as videos to help you successfully teach your child at home. If you have further questions or need support, please contact your child's teacher directly using the contact details that they have provided to you. If they can't answer your questions, they will contact the B2FMaths@Home team directly to get an answer within 3 days.

What you need to know this week

Week overview

This week we are teaching the concept of Length. In early primary, this means measuring using **measuring objects** such as shoes, hand prints, blocks or pens rather than using a ruler or measuring tape. It is important that students use the objects before using centimetres because they need experience with the thinking in the "Students need to work out" section below to properly understand measurement.

> Please **do not** skip straight to using centimetres or students will be at risk of not understanding concepts such as perimeter in later years.

Students need to work out:
- Measuring needs to go from the start of an object to the end – you can't start part way along or miss out a bit (e.g. start from the head of the bed and go to the foot rather than half way along)
- A good way of measuring is to use **measuring objects** (e.g. as shoes, hand prints, blocks or pens)
- The measuring objects should be the same size as each other (e.g. you can't use different sized shoes, you should use the same size shoes or use the one shoe and move it along the length while counting)
- The measuring objects should align straight along the edge (e.g. go straight across the bottom of the bed, not on a wavy line)
- The measuring objects shouldn't overlap each other or have gaps between them (e.g. put them end to end without spaces between them)

We are also hoping that students will learn:
- If the measuring object that you use is big, you won't need as many of them to measure the whole length of an object, but you might end up with a gap at the end
- If the measuring object you use is small, you will have a lot more of them in the same length compared to using a big measuring object
- That means that you can't directly compare lengths of objects unless you know how big the measuring object was. For example: if we were measuring height with hand prints, the person with the bigger hand might have fewer hand prints in their height than the person with the smaller hand, even if they were actually taller.
- Sometimes it can be hard to directly measure the length of an object (e.g. measuring your bedroom if there is furniture in the way), so we have to think about what distances might be the same and measure those instead. For example: we might measure from one wall to the centre of the room, then move sideways and measure from the centre to the other wall, then add these measurements together.

You will need the following objects:
- A collection of measuring objects (shoes, hand prints, blocks, toy cars, spoons or pens will work)
- For the number games: an opaque bowl or cup and 12 items that fit under the bowl (e.g. spoons, toy cars, buttons, balls of paper, toothpicks)

Monday: At-Home Investigation

You will need:
- A collection of measuring objects (shoes, hand prints, blocks, toy cars, spoons or pens will work)
- Clear space along the floor next to your child's bed

Steps:
1. Make sure you have read "What you need to know this week" so that you know what to emphasise with your child and why we are not skipping straight to using centimetres and metres.
2. Read the sheet to your child. Ask for their ideas on how to solve the problem. Don't give your opinion just yet on their ideas, even if they are clearly wrong.
3. Make sure that you try out their ideas first before you try to help them come up with a better plan. This is important because then they will know *why* their idea didn't work.
4. Help your child think about what worked and what didn't, then come up with a new plan if needed.
5. Encourage your child to draw or write answers to the questions on the page. Scribe for them if you need to.
6. Discuss what your child found out with them. Keep in mind the ideas from the "What you need to know this week" section so that you can ask questions that are appropriate to the issues identified.
7. At the end: write a comment on the page in the appropriate section to say what went well or what you are concerned about.
8. We will be coming back to measuring length again later in this program, so don't worry too much if today didn't quite work.

At-Home Investigation

Come up with a plan to investigate how long your bed is, and how long your bedroom is.

My plan: answer these questions
- What could I use to measure my bed with? Draw or list 3 ideas:

- How will I make sure that I am measuring accurately?
  What would happen if I didn't measure straight along?

Carry out my plan: follow these steps and answer the questions
- Choose 2 ideas. Measure your bed in those two ways. How long is your bed?

- Which way worked the best? Explain why.

Apply your learning: follow this step and answer the question
Use what you have learned about measuring to measure the length of your whole bedroom in just one way.
- How much longer is your bedroom than your bed? How do you know?

Parent comment:

Tuesday: Connecting Lesson

In this lesson, you will be using your own table rather than the "Teacher's Table" that is shown on the worksheet.

Number game for 10-15 minutes: *Hide and seek partitioning*
You will need: an opaque bowl or cup and 12 items that fit under the bowl (e.g. spoons, toy cars, buttons, balls of paper, toothpicks). You should also have some paper and a pen or pencil for drawing the amounts.

1. Show your child the items and ask them how many there are.
    a. If you child cannot work out that there are 12 objects, reduce the number to 8 and try again.
2. Ask your child to look away or close their eyes. "Hide" more than half of the objects under the bowl.
3. Ask your child to look at how many are left then ask them how many are hiding under the bowl. Allow time for your child to work this out, including needing to use your fingers and their own fingers or draw the amounts.
    a. If your child is consistently wrong, or takes more than 2 minutes to work it out each time, reduce the number of objects and try again.
4. Take it in turns hiding different amounts with your child.
    a. If this is too easy, try using 2 bowls instead of 1 bowl and hiding the same amount of items beneath each bowl.
    b. You can increase the number of items to 16 if needed.

Worksheet task: 15-20 minutes
This lesson is following on from what your child learned yesterday about using **measuring objects**. The purpose of the lesson is to **discuss and evaluate** which measuring objects are more useful than others, then to use a measuring object to measure your table. Make sure that your child explains out loud how they used the measuring objects as this means that they will be more likely to remember it later.

Britney and Mia want to surprise their teacher by making a sign that will hang across the front of her table.
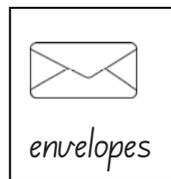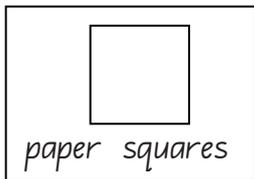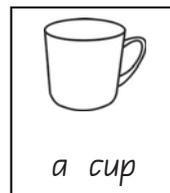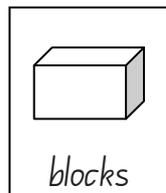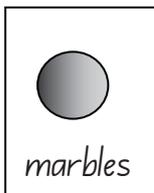
"It will have to be very long," said Mia

"Yes, but how long?" asked Britney.

Draw a line to show what part of the table Britney and Mia will have to measure.

✓ Tick the things that they could use to measure the table.

marbles	blocks	hand spans	a cup	play dough

paper squares	felt pens	envelopes	coins

Colour in the one that you think would be the best choice.

Why did you choose this one?

Use the one you chose to measure your own desk.

Show a friend how you measured it.

Problem solving:

Teacher initials:
Date:

Student solved the problem with:
○ Minimal help
○ Some prompting
○ Solved after explanation
○ Did not work out a solution by themselves
○ N/A – not a novel problem

Peer Assessment

Name:

Wednesday: Connecting Lesson

This lesson allows your child to practise what they have learned over the past two days.

Number game for 10-15 minutes: *Making to ten*
You will need: 10 items from yesterday (e.g. spoons, toy cars, buttons, balls of paper, toothpicks) and the opaque bowl. You should also have some paper and a pen or pencil for drawing the amounts.

1. Show your child the items and ask them how many there are.
   a. If you child cannot work out that there are 10 objects, reduce the number to 6 or 8 and try again.
2. Ask your child to look away or close their eyes. "Hide" 5 of the objects under the bowl.
3. Ask your child to look at how many are left then ask them how many are hiding under the bowl. Allow time for your child to work this out, including needing to use your fingers and their own fingers or draw the amounts.
   a. If your child is consistently wrong, or takes more than 2 minutes to work it out each time, reduce the number of objects and try again.
4. Once your child knows there are 5, reveal the objects so that they are arranged into 2 groups of 5. Ask your child write down the numbers in each group as an addition sum (5+5=10) and draw the objects as circles.
5. Move one object to the other group, so that you have groups of 4 and 6. Ask how many are in each group now, then write the sum and draw the groups.
6. Ask your child, "What would happen if we moved one of these things from the 4 to the 6? What would we have now?". Repeat, working out the amounts and writing the pairs of numbers until you get to 0 and 10.
7. Display the sums and drawings somewhere so that you can refer to it in later lessons (e.g. stick it on the fridge or their door).

Worksheet task: 15-20 minutes
This lesson is following on from what your child learned yesterday about using **measuring objects**. The purpose of the lesson is to **discuss and evaluate** which measuring objects are more useful than others, then to use a measuring object to measure your table.

Make sure that your child **explains out loud** how they used the measuring objects as this means that they will be more likely to remember it later.

If your child can identify which item was the longest, please also ask them to order the objects from the shortest to the longest. This is important for your teacher to know, so make sure it is written at the bottom of the page.
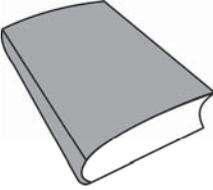
At the end of this lesson:
Your child has now had 3 opportunities to try measuring length. You will need to decide if they have mastered this concept or not, by seeing if they can correctly measure then order the lengths of 3 items. If they can, then on Friday do the extension task. If they are having some trouble or forgetting the process, use the time on Friday to practise measuring again.

Work with a partner to measure the **length** of these things in your classroom.
Choose what you will use to measure the items with.

✍ or ✏ Record your measurements on this table.

What I measured	What I used to measure	How many I used to measure
my desk		
my book		
the window		
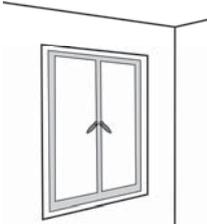
Which was the longest item you measured? ✍

Find something longer than your desk. ✍

Thursday: Interleaved Practise Questions

Why we are using mixed up questions:
In this lesson your child will be reviewing a range of skills that they have learned previously. Each question is unrelated to the previous question, because we want your child to have to *think hard* about what to do. Mixing up questions like this, rather than just practising related questions, has been shown in research to improve student retention of concepts by 60% over a 4 month period.

What to expect:
Your child will probably have forgotten how to complete quite a few of the questions. If needed, change the numbers in each question to make them easier because this will still require your child to think hard and remember a process. If they still can't work it out, feel free to show them, but try using different numbers rather than the exact same question. There are answers to each question on the website in case you get stuck.
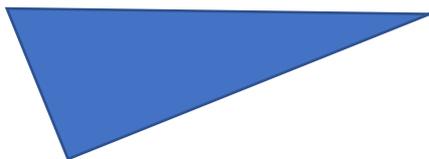
Interleaved practise

Yr 1 Wk 1

Number:

1. Starting at 12, count 2s until you get to 20.

2. 6 + _____ = 13

3. What number comes after 39?

4. Use 4 coins to make $1.00 and draw them here.

5. Share 12 counters equally between 4 people. How many does each person get?

Measurement/Geometry:

6. Find a heavy object and a light object. What are they?

7. What time is it?

8. What shape is this?

Chance/Data:

9. How likely is it to rain tomorrow?

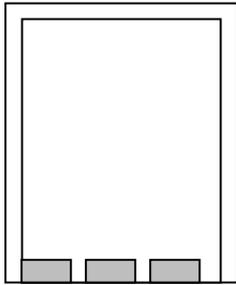## Friday: Generalising and Extending Lesson

You will need to decide between the following options:

- Child found the measuring work easy: Try the worksheet. Make sure that your child is doing the thinking rather than waiting for you to explain.
- Child found the measuring work hard: Use this time to practise measuring other items in your house, then ordering the objects from smallest to largest. Try to make sure that you include objects that are not in the same room as each other (e.g. couch vs your bed), so that your child cannot simply compare them by sight.
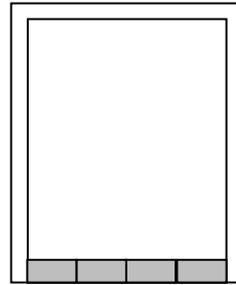
Manipulation problem

Britney and Mia were measuring the doorway of their classroom with blocks.

Here is what Britney did.   Here is what Mia did.

"The doorway is 3 and a bit blocks wide," said Britney.
"I think it is 4 blocks wide," said Mia.

Which one is right?

Why do you think so?

Backwards question

Harry measured his desk and found that it was 8 hand spans long.
He measured the space between his bed and his wardrobe.
It was 10 hand spans long.
Will his desk fit into his bedroom?

Circle the correct response: Yes   No

or   Show how you worked it out.