

Work Program for B2FMaths@Home Week 8 **Foundation**

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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.
- **Number practice:** This lesson contains games and number tasks to do regularly with your child. Number is the most important concept to establish in Foundation, so we will be using similar activities each week to help your child develop a very firm understanding of “how many”, to be able to picture that amount in their head, and to be able to add and subtract small amounts very flexibly. **These sessions will not focus heavily on counting, as counting is far less important than making amounts, drawing those amounts and recognising that the amount is still the same when the objects move.**

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 chance. We want children to be able to work out what will definitely happen, what might happen and what will definitely not happen.

For your information: When students are learning about chance or probability in later years, they need to understand that chance is linked heavily with fractions. That means that all the ideas we explored last week with fractions still apply. Probability is always a fraction between impossible (no chance, 0%) and certain (100% chance).

For fractions, we are hoping that students will understand:

- Halves need to be “fair”. If the pieces are to be given the same name, then the **size** of each piece needs to be the same. That includes half of a group of objects (e.g. half of 6 shells is 3 shells).
- We can have halves of different types of wholes. We can have “half full” glasses, halves of string or ribbon, halves of amounts (e.g. half of \$4 is \$2) and also halves of shapes (e.g. rectangles, circles).

For chance, we are hoping that students will:

- Decide on how likely some events are to occur: are they certain, possible or impossible? Are they likely or unlikely?
- Work out that very few things in life are certain and impossible. Mostly they are likely or unlikely.

You will need the following objects:

- Copies of the **Make 10** cards supplied for the game from last week (copy included again this week)
- For Monday: a clear bag or bowl with
 - 3 red items
 - 2 blue items
 - 1 yellow item

Teacher Overview

Students will be considering chance and the idea of likelihood. Many students have difficulty thinking about chance as they tend to think of every event as either certain or impossible – we have to teach them about events being likely or unlikely (e.g. while we are likely to have school tomorrow, a natural disaster or illness could stop that happening so it is likely rather than certain).

What to emphasise

If you have time online with a webcam

Ask students questions that emphasise the “students need to work out” section from the previous page, such as asking them to explain how they decided if the events were certain, impossible, likely or unlikely.

Check that the parents understand how the number games for the week work and make sure that you ask the student if they have played them yet. These tasks are about Partitioning. Please note: the cards this week are also available as a commercial product on our website. They are much more robust and appealing, and also come with instructions for multiple games to build fluency.

If you have only email or phone contact

Check that parents have read the “What you need to know this week” section. Check that they understand the importance of using the number tasks so that students retain what they have learned and think regularly about adding and subtracting.

Tracking student achievement

This week we are focusing on the Australian Curriculum Content Descriptor

ACMSP011: Answer yes/no questions to collect information and make simple inferences.

The elaborations make it clear that this statement includes posing questions about events.

The achievement standard requires students to “Answer simple questions to collect information and make simple inferences.” (**P1C**).

An A or B standard would involve adding explanation or interpretation of the information (**P1A**).

Monday: At-Home Investigation

Today you will be discussing some contexts with your child and deciding whether events are Possible (might happen) or Impossible (could never happen).

You will need:

- A clear plastic bag containing the following items (e.g. Lego blocks):
 - 3 red items
 - 2 blue items
 - 1 yellow item

Steps:

1. Make sure you have read “What you need to know this week” so that you know what to emphasise with your child.
2. Ask your child what you could draw out of the bag. Make sure that they tell you all of the options.
3. Play with the idea of impossible: *Could I draw out a rocket ship? How come?*
4. Read the sheet to your child. Ask for their ideas. Focus on using the terms “possible” and “impossible”. If this is simple, try asking “what would be the most likely colour to draw out?”
5. Help your child think about what worked and what didn’t, then come up with a new plan if needed. Use your bag with the objects in it as needed to illustrate the idea.
6. Encourage your child to draw or write answers to the questions on the page. Scribe for them if you need to. Discuss each possible event and how you know that they are possible or impossible.
7. 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.
8. At the end: consider writing a comment on the page to say what went well or what you are concerned about. The concept of likelihood is important for later years, but we will check it again before the year finishes.


At-Home Investigation


Possible or Impossible


Some of the pictures below show things that are possible (might happen). Some of the pictures show things that are impossible (could not happen).


What could I draw out of the bag?

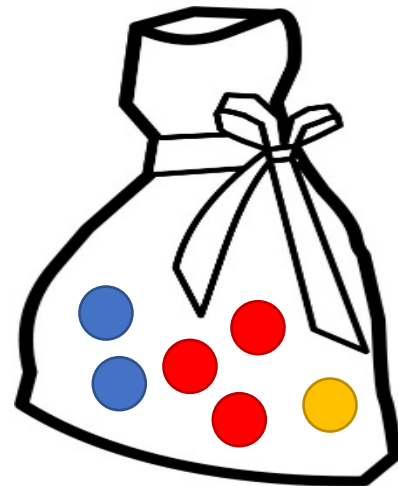
Tick the pictures that are possible to draw out and **cross** the ones that are impossible.

Blue ball 

Green ball 

Yellow ball 

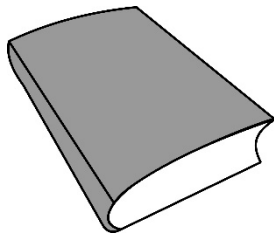
Pink ball 



Explain your thinking to an adult.

Tara went to the library

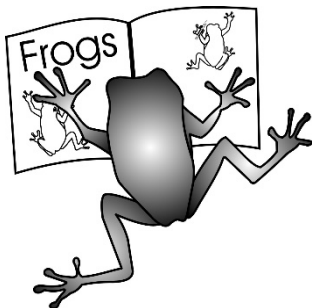
Tick the pictures that are possible and **cross** the ones that are impossible.



1. Tara found a book she liked



2. Tara looked up information on the computer



3. A frog was reading a book



4. The librarian read a story



5. The library floated off the ground

Teacher Overview

This is a ***Problem Solving and Reasoning*** task.

The emphasis is on *investigating* a question, *developing* a plan, *testing* it out, *verifying* that the plan worked, changing it as needed and *communicating* the procedure. There is also an emphasis on *generalising* an approach to deciding if an event is impossible or possible.

If you are at school: Focus on the differences between possible and impossible, describing events that have any degree of likelihood as likely or unlikely. Introduce the term certain.

Please note: Chance is difficult to understand as it relies on fractions.

Watch out for:

- Every event being impossible or certain
- Anything likely being described as certain
- Anything unlikely being described as impossible

Good questions to prompt thinking:

- Is there any way that the event can happen? Is there anything that could happen to stop it?
- What is something that will definitely happen (e.g. sun rising)? What is something that will definitely not happen (e.g. you will suddenly fly)? What is something that might happen but also might not happen?

Students requiring support:

- Use physical manipulatives for the experiment and try actually drawing out the items
- Discuss other everyday events

Extension:

- Have students come up with events that are certain, likely, unlikely and impossible.
- Introduce the idea of 50:50
- Conduct experiments with dice or drawing objects from bags
- Have students design questions to ask about chance

Tuesday: Number focus lesson

Number focus: *making ten go-fish cards game* This game is repeated from last week

You will need: the cards provided. You may want twice as many cards, so feel free to print them out two times. If needed, remove the cards that show more than 10 so that you can focus on adding smaller amounts.

This is a cooperative game, not a competitive game. You need 2 or more players. You all “win” by using up all the cards. The aim is to make a set of cards that add or take away to give an answer of 10. A set can have as many cards as you want, as long as you can describe how to use the numbers to make 10, e.g. a set could have a 4, 8 and 2 because $4 + 8 - 2$ makes 10

How to play:

1. Deal out 3 cards to each player. Show them face up so that everyone can see them.
2. One player starts by asking another player for a particular card so that they can make a set that adds or takes away to give ten, e.g. if they have a 4, they could ask for a 6.
3. When the second player is asked to give a card, they respond by asking, “How will you make 10?” The first player explains how they will use the card in combination with their own to make 10 (e.g. If I add your 2 to my 8 that makes 10).
Please note: a set can have as many cards as you like (e.g. $10 + 10 - 8 - 3 + 1 = 10$). This means that older players can make the game trickier by using all their cards in one go.
4. The set that makes 10 is added to a discard pile. Each player draws extra cards as needed so that they have 3 again.
5. If the first player cannot see how to make a set of 10, another player can help by saying, “you could use my 8 to make 10”. The first player can then try and work out how, and ask for the card indicated.
6. If there is no way to make 10 using the cards in play, the first player draws a card from the deck. They can either try again, or play passes to the second person. Each successive set of 10 is added to the discard pile – you don’t score how many sets you make.
7. The game ends when all the cards are used up. A “perfect game” uses up all the cards exactly.

Making ten card game

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Teacher Overview

This is an **Understanding and Reasoning** task based on the key concept of **Partitioning**.

The purpose of this lesson is to make sets of numbers that add or subtract to give ten. Please note, you can purchase commercial versions of these Partitioning Cards from our website. The Partitioning card pack also includes instructions for 11 games that your students can play to build their partitioning skills. <https://www.backtofrontmaths.com.au/product-category/games>



If you have time online with students, try playing Make Ten. Make sure that you talk with parents about the importance of Partitioning. Children need practice making, adding, subtracting and comparing amounts to ten to develop strong understanding as well as fluency.

You may also want to review concepts of arrays, shapes, length, time and capacity that students were working on in previous weeks to build retention.

Wednesday: Connecting lesson

This lesson allows your child to further explore the idea of chance that they looked at on Monday. They explore the context of going on a picnic. If you have time, it might be fun to have a picnic this week.

Some maths tasks you could do to plan for a picnic include:

- Planning how many items of food to take
- Weighing the food or measuring the drinks
- Shopping for the food and collecting the right number of each item
- Collecting the right number of cups, spoons etc.
- Thinking about what time of the day would be good and how long to allow for your picnic
- Thinking about how likely it is to rain
- Packing all the food and equipment into a box, bag or basket
- Looking at the squares on your picnic rug and working out how many there are
- Using words to describe your location (in front, behind, left, right, above...)

If you have extra time, please play the **Make Ten game** from yesterday again. Alternatively, you can just ask your child to use the cards to make sets of numbers that make ten.

Application problems

1. Alice is having a picnic in the park with her family on Saturday. She hopes it will be a good day to be outside.



or 

Draw or write about something that could happen at the picnic.



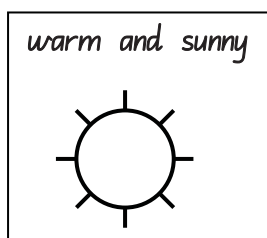
or 

Draw or write about something that could not happen at the picnic.

2. It was a warm sunny day on Saturday for the picnic. What else could the weather have been like?



Draw some other types of weather that would have been possible.



Teacher Overview

This is an ***Application and Connection*** lesson. It gives students an opportunity to build their understanding of chance. The context of a picnic is provided as it provides a good idea for investigations. Consider using picnics over the next few weeks of term and complete each of the maths activities suggested as a good review of what we have been learning this term.

Thursday: Interleaved Practice Questions

Please read these questions to your child, rather than using them like a worksheet.

The questions can also be adapted for use as you play with your child, for example, you could share out the blocks you are using to make a tower, play 'hide the block' instead of toy cars.

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:

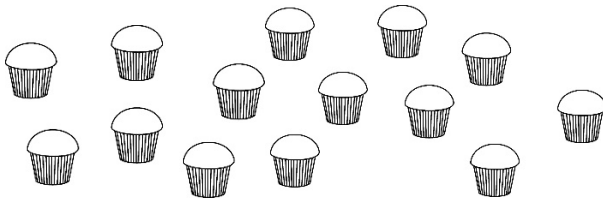
Your child will probably have forgotten how to complete quite a few of the questions. If needed, change the numbers in each question to make them easier because this will still require your child to think hard and remember a process. If they still can't work it out, feel free to show them, but try using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

Interleaved practice to talk about together

Number:

1. Draw 6 counters arranged as a circle.

2. How many cupcakes are there?



3. Write the number of cupcakes above in words: _____

Measurement/Geometry:

4. What is the day and date today?

5. Draw these coins: 50c 20c 10c

6. Draw a ball rolling down a ramp.

Chance/Data:

7. Write something that is impossible, something that is likely, and something that is certain.

Teacher Overview

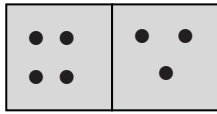
The questions on this worksheet are drawn from the “C standard” of the Achievement Standard. See your tracking sheet for more detail. Each week the interleaved questions will get a little harder, and more concepts will be reviewed throughout the program as we teach that concept. We have included answers to these questions on B2FMaths@Home so that parents can find them if needed.

Support for struggling students:

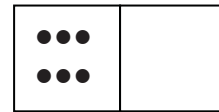
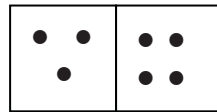
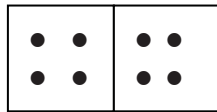
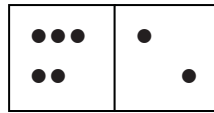
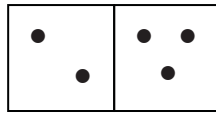
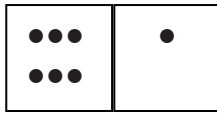
You might like to reduce the numbers in the questions. You might also give the student the answer, then ask them to work out how the answer was obtained.

Application problems

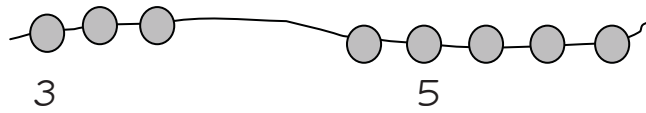
1. This domino has 7 dots on it.



Colour in the other dominoes that have 7 dots.



2. Libby has 8 beads on a piece of string. She moved some beads to each end of the string like this.



Draw 8 beads in different ways on the strings below.



Write the numbers on each end.



Teacher Overview

This is a **Reasoning** lesson. It is designed to extend student understanding of partitioning. In particular, this lesson asks students to partition numbers less than 10. Feel free to suggest a different amount as needed.

To extend student thinking further:

- Ask the students “what if” questions: what if the dominoes had to have 9 dots instead? What if half of the spoons was 5? What if you had 12 beads instead of 8?