

Year 1

At home materials

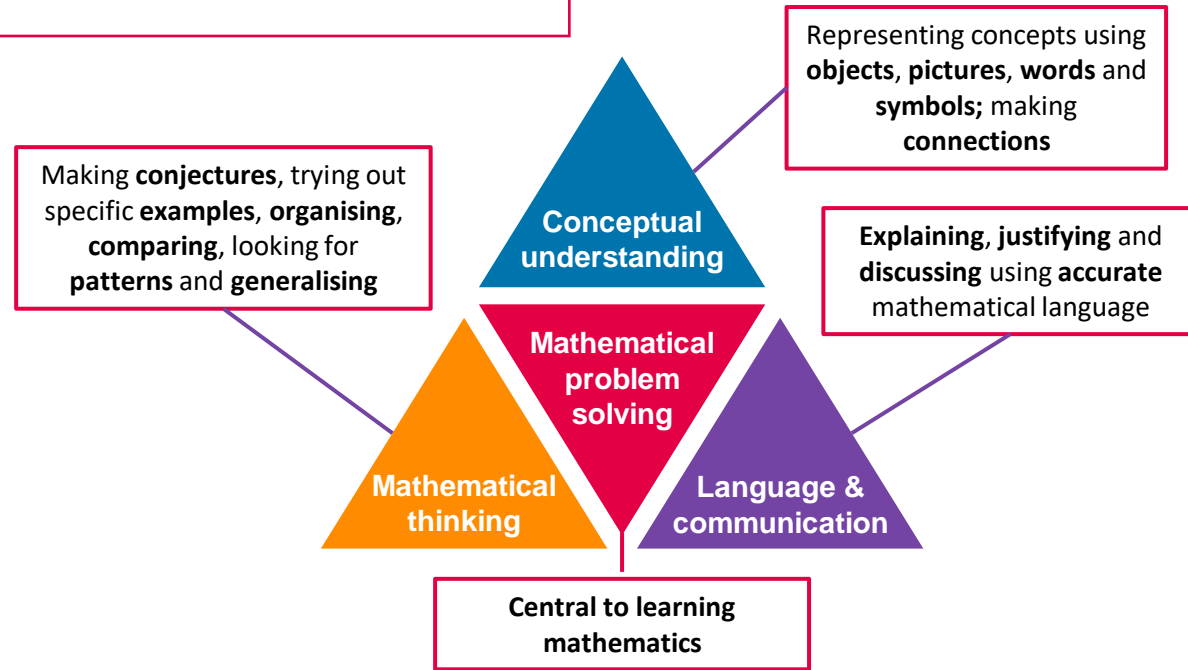
Task Bank



Mathematics Mastery

What is 'Mastery'?

The 'mastery approach' to teaching mathematics is the underlying principle of Mathematics Mastery. Instead of learning mathematical procedures by rote, we want your child to build a deep understanding of concepts which will enable them to apply their learning in different situations. To achieve this we aim to develop pupils' **Conceptual Understanding, Mathematical Thinking** and **Language and Communication** (see diagram).



Success for all

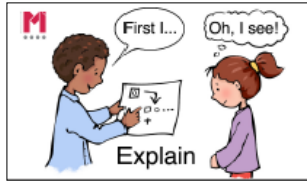
At school we believe all pupils can achieve success in maths. We encourage pupils to have a belief that effort leads to success and that challenges are opportunities to learn.

Here are a few tips to encourage your children at home with maths:

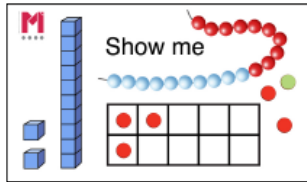
- ✓ Talk to your children about everyday maths
- ✓ Play games with them
- ✓ Value mistakes as learning opportunities
- ✓ Recognise that there is more than one way to work things out
- ✓ Praise children for effort over outcome
- ✓ Avoid saying things like "I'm useless at maths"

Ideas for Depth

We have developed ten ideas that challenge pupils to develop a depth of understanding within a concept and build up habits of thinking mathematically.. Each of the ten ideas is represented by a picture or symbol and you will see these throughout the task bank. Each is explained below.



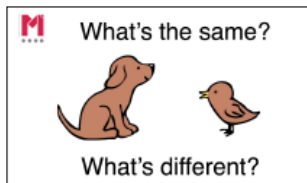
'Reason it'
Explain how you know. Remember to use the star words!



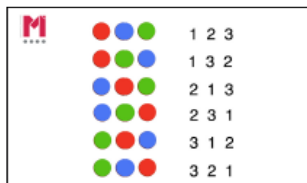
'Show me!'
Build something to convince me that you are right.



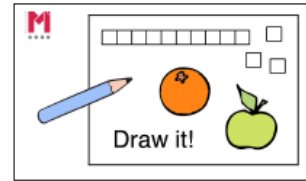
'What's wrong with this?'
Can you explain what is wrong with this and correct the error?



'What's the same? What's different?'
Describe as many things as you can.



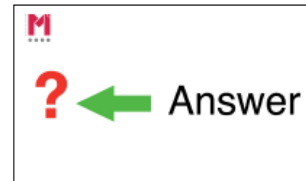
'Have you found all possibilities?'
Is there more than one way of completing this? Is there more than one answer? Have you found them all?



'Draw it'
Draw a picture to explain or demonstrate what you have worked out.



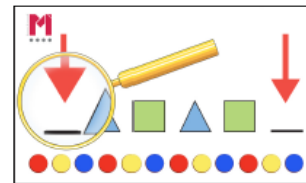
'Maths story'
Make up a real-life story using your equation/numbers or shapes. Try to use the star words.



'What's the question?'
If this is the answer, what could the question have been?



'Odd one out'
Find an odd one out and explain why it doesn't fit. Does your partner agree with you? Could another one be the odd one out? Why?



'Find a pattern'
Can you see a pattern? Continuing this pattern, what would happen if...? What came before? What comes next? Explain how you know

Contents

Task banks are organised by the following themes:

[Week 6: Applying addition and subtraction strategies](#)

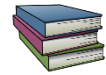
[Week 7-8: Money](#)

[Week 9-10: Measures](#)

Task

The special bookcase

Year 3 have a special bookcase in their reading corner. There are 10 shelves. Each shelf has 10 books. In each book there are 10 pages. On each page there are 10 lines. Each line has 10 words.



How many books are in the book case?
How many pages are there in five books? How many lines?
How many pages are there on two shelves? How many books?
If there are 300 words, how many lines are there? How many pages are there?

Guidance or answers

The special bookcase – Teacher Guidance

Purpose: Pupils explore the relationship between the hundreds, ten and ones place value counters and explore the patterns found when making numbers 10 and 100 times greater and smaller.

Reflection points:
? What manipulations could pupils use to generalise their thinking in this task?
? Could other books be used?
? What pictorial representations or patterns they could use?

Adapting for support:
Consider adding larger constraints. Pupils may focus solely on multiplication or dividing (and/or by ten or hundred).

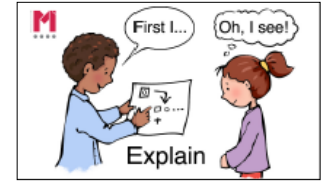
Extending learning:
Encourage pupils to create their own maths stories about the special bookcase. You may wish to provide pupils with sentence stems or short passages to support this.

Adapting for challenge:
In line with the Year 3 National Curriculum, questions have been constructed so pupils only multiply and divide by 10 and 100 with up to 3-digit numbers which is in line with the Year 5 programme of study.

With this in mind, if you are adapting the task for further challenge, consider how you will assist for those rather than moving into objectives beyond Year 3 (e.g. mental numbers with more than 3-digit and multiplying and dividing beyond 100 or with decimals).

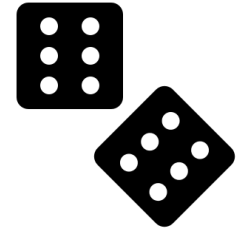
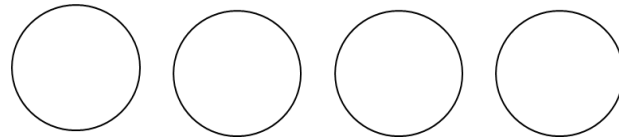


Adding Circles



For this game, you need dice, a pencil and paper.

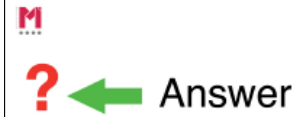
- Each of you should draw four circles on your piece of paper.
- Write a different number between 2 and 12 in each circle.



- Roll two dice. (Or roll twice, if you only have one die). Add the two numbers.
- If the total is one of the numbers in your circles then you may cross it out.
- The first person to cross out all four circles wins.

Use the key vocabulary: part whole add is equal to

Grab bag subtraction



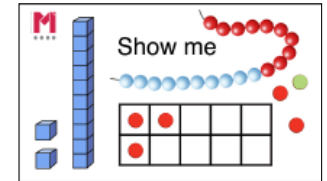
Choose a number of things to work with and put that many objects into a bag. You can use crayons, coins, beans, buttons, etc.

- Grab a handful of the items and count them. Ask your partner how many items are now left. *“I started with ___ items. I’ve taken out ___ . How many are left?”*
- Write down the calculation.
- Encourage counting up or back, use manipulatives e.g. counters if you need to.
- You get a point for getting each calculation correct.
- Let your partner have a turn.



Use the key vocabulary: part whole subtract partition is equal to

Bus problem



One afternoon, the bus driver sets off with 12 people on his bus. He stops at three stops. After the third stop, there are 15 people on the bus.

What might have happened at each of the three stops?

What are the different possible answers?
Create your own problem like the bus problem.

Bus problem – Adult guidance

Purpose: To consolidate addition and subtraction within 20 and give pupils opportunity to work systematically through a problem with more than one right answer.

Suggested sequence of learning:

Allow your child to think about a possible answer then discuss together. Ask them if there is more than one way to answer the question. Investigate using manipulatives (such as counters) to represent the people on the bus. Prompt children with questions such as at the first stop did anyone get on the bus? Did anyone get off the bus? See how many ways you can solve the problem.

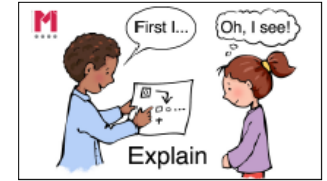
Adaptations:

Constraints can be added to this problem using “What if...”:

What if....

- At the first and second stops, people get off but no ones gets on?
- When the bus driver is calculating how many people are on his bus, he uses the ‘Make ten’ strategy at two stops?
- By the second stop, the bus is full?
- There are only two stops instead of three?
- At the first stop some people get off and some people get on?

Finding the difference



Roll the dice. Find two numbers with a difference of the number you rolled and mark them on the number line using a counter or small object.

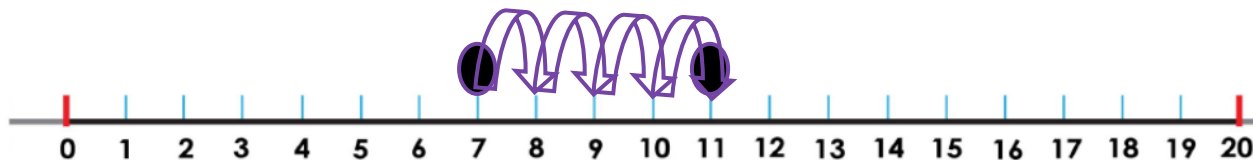
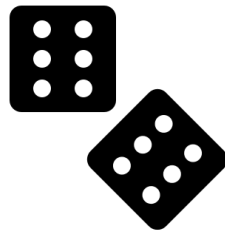
(Tip: select any number to start with then make the amount of jumps on the die)



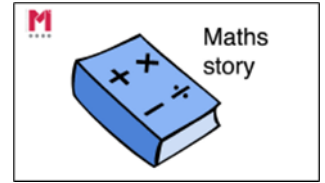
Use the sentence examples below to help you describe the numbers you have identified.

I've rolled a four. I'll start at seven.
(Marking jumps) one, two, three, four.
Four greater than seven is 11.

The difference between seven and 11
is four. The difference between 11
and seven is four.



I'm thinking of a number



I'm thinking of two numbers with a difference of 3. One of the numbers is 7. What could the other number be?

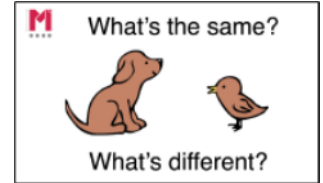
What number could he be thinking of? Is there more than one answer? You may want to use a number line to show your thinking.

What number stories can you create for someone else to solve?

I'm thinking of two numbers with a difference of _____. One of the numbers is _____. What could the other number be?



A handful of coins 1



Grab a handful of coins like the one shown below.

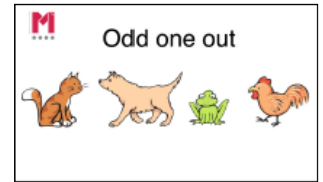
What is each coin's name?

What's the same and what's different?

Can you order them from smallest to greatest value?



A handful of coins 2

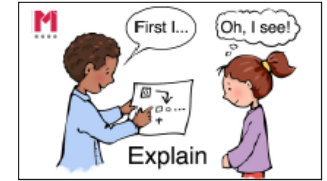


Look at each handful of coins. Which is the odd one out? How do you know? Could there be more than one answer?



Create your own handful of coins groups at home. What could the odd one out be?

Would you rather?



Which coin would you rather have?



Read these answers with a family a member.

Who do you agree with? How do you know they are correct or incorrect?



I would rather
the 10 p
because it's
the largest.

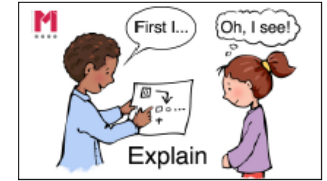


I would rather
the £1
because it has
the largest
value.



I would rather
the 20p
because it has
the largest
value.

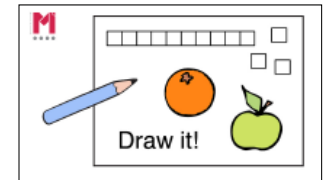
Would you rather? 2



For each set of coins, explain which coin you would rather have.











Money Puzzle



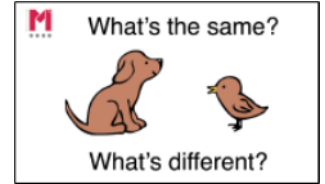
Can you make each column and row add up to make the correct amount?

If you have real coins, use them to place in the gaps. After you have found a solution, draw the coins in.

Once you have completed the puzzle, try creating your own money puzzle for a friend to solve.

	9p	9p	7p	12p
9p				
6p				
14p				
8p				

Different ways

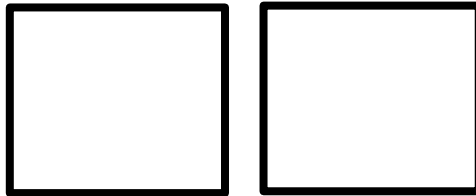


Make 20 p

Using one coin



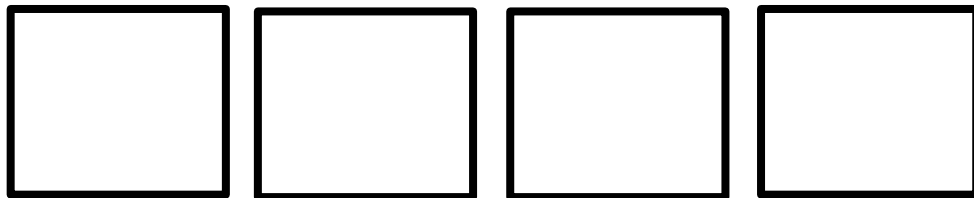
Using two coins



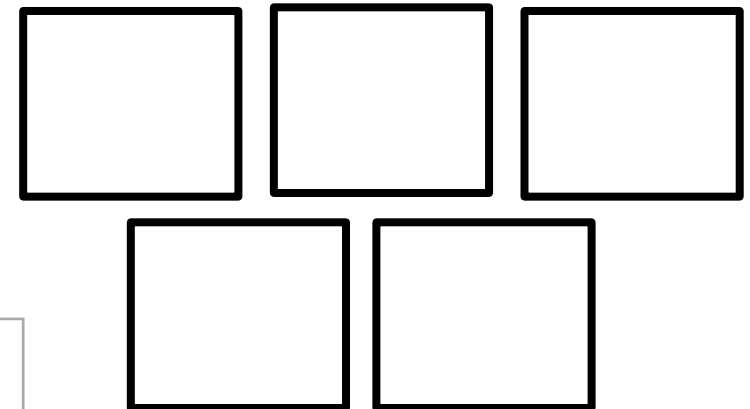
Using three coins



Using four coins



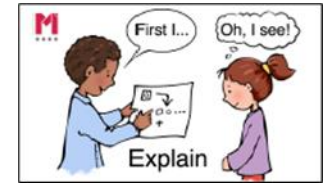
Using five coins



Can you think of any other ways?

What happens if we change the target amount?

Fairyland



Fairyland Menu

Cake..... 40 p


Apple..... 20 p

Sandwich..... 50 p

 Chocolate biscuit..... 10 p

Orange juice..... 30 p

Banana..... 30 p

 Milk..... 40 p

Role play being at the Fairyland café with a family member, taking on the role of the customer and the waiter/waitress.

- Customer selects two or more items
- Waiter/waitress needs to add the amounts together.
- Swap roles.

If you had £1 to spend, what could you buy?

Fairyland Receipt Checker



All of these Fairyland receipts say the total cost is 60 p.
Which ones are correct and which ones are incorrect?

Cake40 p
Apple.....20 p

Total.....60 p

Banana.....30 p
Apple.....20 p

Total.....60 p

Milk40p
Apple.....20p

Total.....60p

Sandwich.....50p
Chocolate
biscuit.....10p

Total.....60p

Banana40 p
Chocolate
biscuit.....10 p
Chocolate
biscuit.....10 p

Total.....60 p

Orange juice
.....30 p
Apple.....20 p

Total.....60 p

Orange juice
..... 30 p
Banana.....30 p

Total.....60 p

Orange juice
.....30 p
Apple.....20 p
Chocolate biscuit
.....10 p

Total.....60 p

Another receipt had a total of 80 p. What could they have bought?

What did they buy?



If the total amount is 70 p. What could they have bought?
Think of at least 4 ways.

Fairyland Menu

Cake..... 40 p


Apple..... 20 p

Sandwich..... 50 p

 Chocolate biscuit..... 10 p

Orange juice..... 30 p

Banana..... 30 p

 Milk..... 40 p

Total.....70 p

Total.....70 p

Total.....70 p

Total.....70 p

Measure up!

Gather five objects from around your house.
Order them according to their size.

What could you use to measure each object?

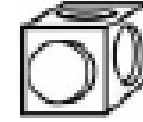
For example: hands, coins, tin cans

Use your chosen unit to estimate and measure each object. Record your results in the table:

I am measuring using: _____

Object				
Estimate				
Actual				

Object hunt



We have used cubes for this task, but you could replace this with an everyday item such as button, paperclip, bead, marble, coin etc.

Around your home, can you find an object that is.....

- About 5 cubes long
- About 10 cubes long
- Longer than 5 cubes but shorter than 8 cubes
- Longer than 8 cubes but shorter than 12 cubes
- Longer than 12 cubes but shorter than 20 cubes
- Longer than 20 cubes but shorter than 25 cubes



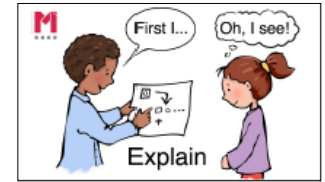
Curvy lines

Estimate which curvy line you think is the longest and the shortest. Use a piece of string to compare each one.



Tip: For each line mark the length on the string using a pen, cut the string and put it to one side. Afterwards, compare your pieces of string to see which was the longest.

Heavier or lighter?



Look through your kitchen cupboards.

Select 5 items to compare mass.

Can you order them from lightest to heaviest?



--	--	--	--	--

Use the following sentence stems to create sentences about your items:

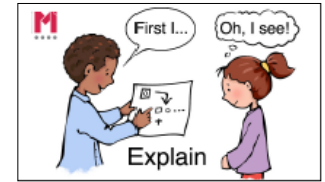
The _____ is the heaviest item.

The _____ is heavier than the _____.

The _____ is lighter than the _____.

The _____ is the lightest item.

Crazy capacities



Collect five different empty containers from around the house.

Which one do you think holds the most?

Investigate!

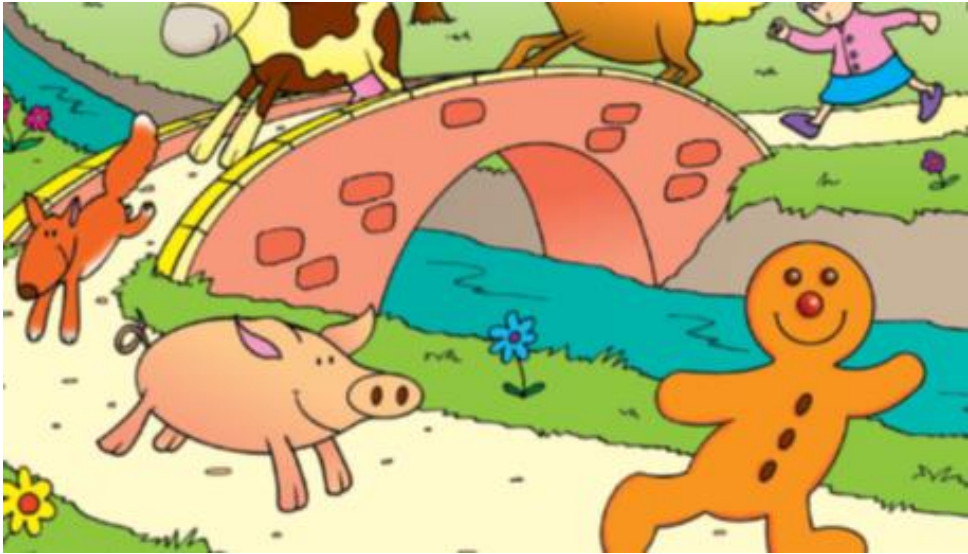


Tip: You may want to use one container as your unit of measure, for example count how many cups of water fit into each container.

Were your estimates correct?

Making gingerbread men

Work with an adult to prepare ingredients to make gingerbread men.



- 200 g plain flour
- 150 g light soft brown sugar
- 100 g butter
- 1 medium egg
- 5 dessert spoons golden syrup
- 1 teaspoon bicarbonate of soda
- 2 teaspoons ground ginger
- 1 teaspoon cinnamon

Tip: Feel free to change the recipe to suit tastes at home and ingredients you have available. Ideally this should include different items to measure at different masses or measures, as above.

Making gingerbread men - full recipe

This makes about 10 gingerbread biscuits.

Instructions

1. Sift together the flour, bicarbonate of soda, ginger and cinnamon and pour into the bowl of a food processor. Add the butter and blend until the mix looks like breadcrumbs. Stir in the sugar.
2. Lightly beat the egg and golden syrup together, add to the food processor and pulse until the mixture clumps together. Tip the dough out, knead briefly until smooth, wrap in cling film and leave to chill in the fridge for 15 minutes.
3. Preheat the oven to 180C/160C Fan/Gas 4. Line two baking trays with greaseproof paper.
4. Roll the dough out to a 0.5cm/¼in thickness on a lightly floured surface. Using cutters, cut out the gingerbread men shapes and place on the baking tray, leaving a gap between them.
5. Bake for 12–15 minutes, or until lightly golden-brown. Leave on the tray for 10 minutes and then move to a wire rack to finish cooling. When cooled decorate with the writing icing and cake decorations, if using..

Ingredients

- 200 g plain flour
- 150 g light soft brown sugar
- 100 g butter
- 1 medium egg
- 5 dessert spoons golden syrup
- 1 teaspoon bicarbonate of soda
- 2 teaspoons ground ginger
- 1 teaspoon cinnamon
- icing for decorating
- raisins for decorating