Family Maths Toolkit

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Everyday Activities Pack

R

Ages 4-5

Any questions, please email:
enquiries@nationalnumeracy.org.uk

familymathstoolkit.org.uk

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Family Maths Toolkit

However you might feel about maths, you can make a huge difference to children's numeracy abilities.

This **Everyday Activities Pack**, created by National Numeracy, contains short, fun, 'real life' activities for families to do with children. No special knowledge or equipment is needed.

All the evidence shows that talking about everyday maths helps develop children's maths confidence. Here are some ideas for questions that you can ask each other when tackling the activities:

- What do we need to do?
- What information do we have? What do we need to find out?
- Would any equipment help?
- What do you notice when...?
- Shall we make a guess and see if that works?
- What could we do if we get stuck?
- If we were doing this again, is there anything we could do differently?

The majority of activities are designed to be open ended so you can explore everyday maths together. There are a handful of activities that have answers – these are on the last page of this pack. The pack is aligned by age with England's 2014 National Curriculum. Please note these are just average expectations - children may be working below or above the curriculum links stated.

You can adapt these activities to suit your family's interests and use whatever items you may have to hand at home or out and about. You might want to take photos, draw pictures, write calculations or create diagrams – it's up to you! Do use the comment boxes to reflect your discussions and thoughts as you complete each activity together.

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Play Beetle

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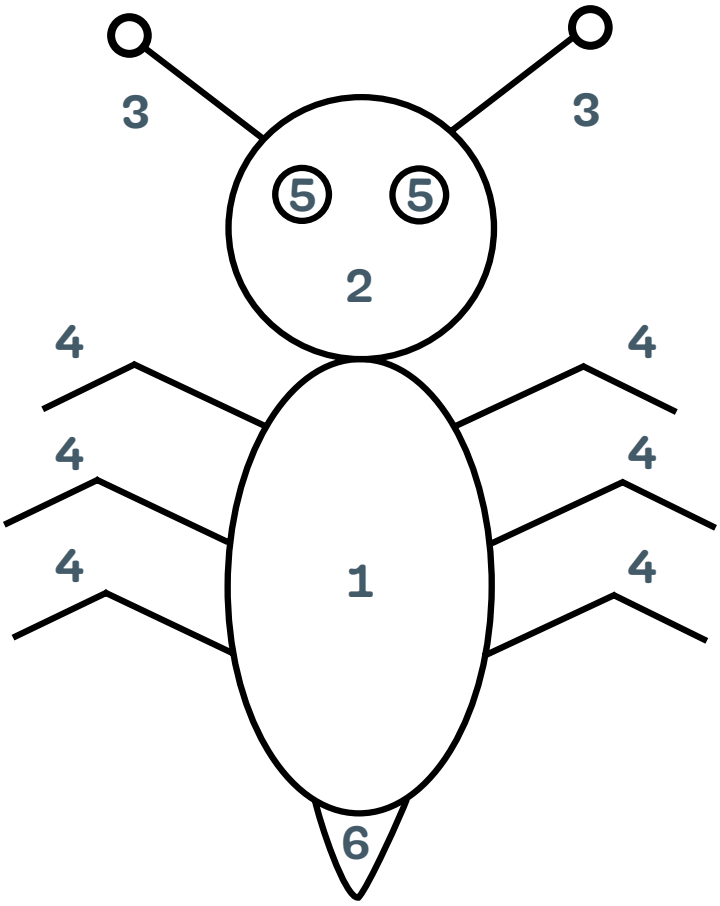
Play the game of 'Beetle' by taking turns to throw a die. If you throw a 1, you may draw a body; 2 is for the head; 3 is for two antennae; 4 is for six legs; 5 for the eyes and 6 will give your beetle a tail. First one to finish is the winner.



Who will be first to complete a beetle? When you have won, you can add a nose and mouth!

Have fun!

Helpful hints: Any number of people can play this game; you can make the game harder by saying that you cannot add antennae or legs until you have the head or body. Also you could say you need to throw the correct number for each leg or each eye.

Family comments:

Child comments:

Curriculum Link

Subitising - recognising dot patterns on a die which represent a number, counting reliably to 6.

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Two dogs

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Two dogs, Paddy and Monty, are playing in the woods with a ball.

- How many tails?
- How many noses?
- How many balls?
- How many legs?
- How many ears?

Are there any more questions you could ask?

Draw another animal who could play with them and would make one more tail to count.

Helpful hints: Talk about the same, different, double, one more than, one less than, ensure your child points and counts, talk about one back leg (Paddy) that cannot be seen but should be counted!

Family comments:

Child comments:

Curriculum Link

Same, different, double, one more, one less than.

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Making 10

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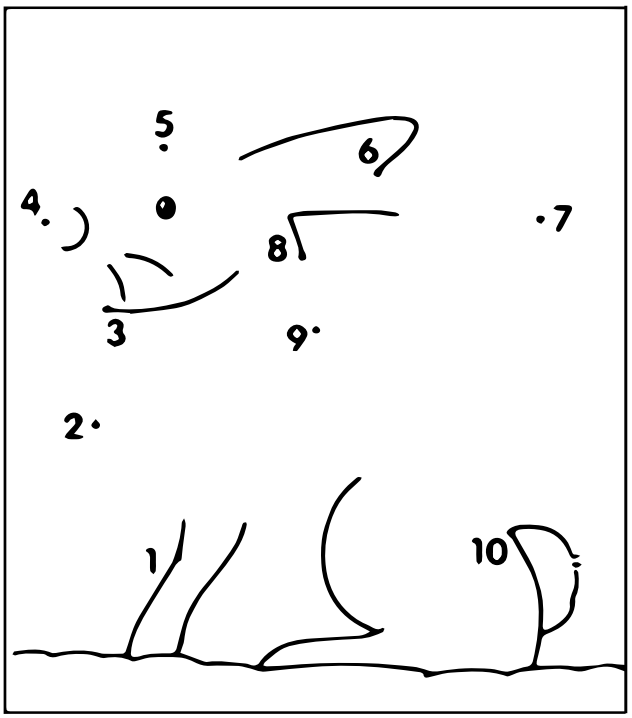
Can you hop on one foot 10 times?
Can you clap 10 times?

What else can you do 10 times and count?
Can all your family do it too?

Here is a dot-to-dot. What do you think it will be?

Can you make one up with your family?



Family comments:

Child comments:

Curriculum Link

Count reliably with numbers 1 to 10, place numbers in order.

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Weight of fruit

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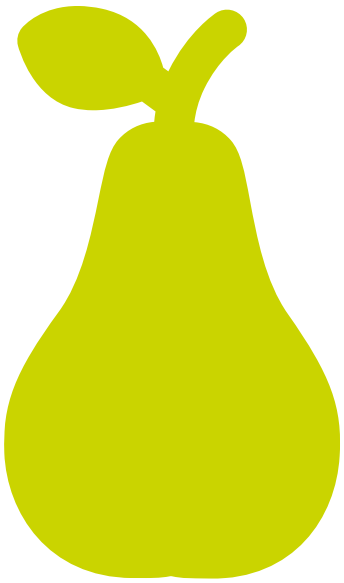
Choose a favourite teddy bear or soft toy. Hold it in one hand. Now hold it in the other hand.



Feel how **heavy** it is.

Can you find three pieces of fruit or vegetables which are **heavier** than your toy? Hold your toy in one hand and the piece of fruit in the other to feel the **difference**.

Can you find three which are **lighter than your toy**?

Helpful hints: Encourage your child to choose a toy which is not too heavy so that heavier and lighter examples of fruit can be found.

Family comments:

Child comments:

Curriculum Link

Use everyday language to talk about weight.

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Teddies in a queue

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Find 7 teddy bears (or other toys). They are going on a picnic and need to catch a bus.

Put them in a line. Who is first in the line?

Who is third? Who is fifth?

The last toy is crying – move it so that it is second. Who is last now?

Draw a picture of the toys and label them 1st, 2nd...

Helpful hints: When out and about, link this to real queues that you see.

Family comments:

Child comments:

Curriculum Link

Use ordinal numbers 1st, 2nd...last.

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Secret Christmas tree

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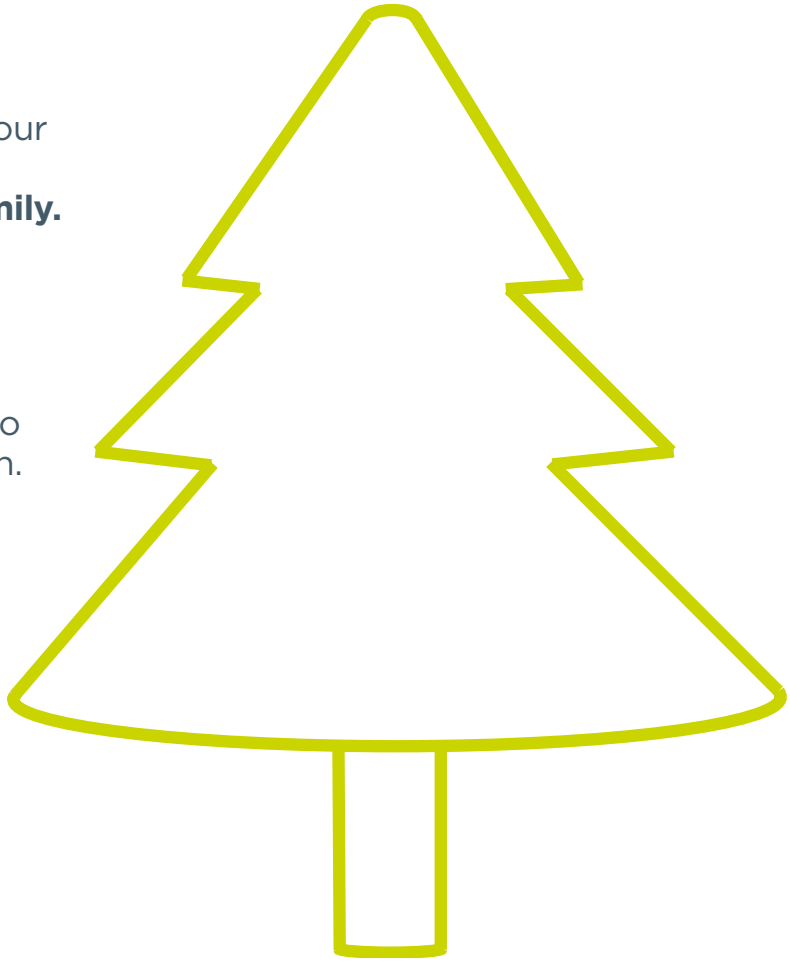
Draw a Christmas tree without any decorations.

Now draw 6 different decorations on your tree – make them different colours and different shapes. **Do not show your family.**

Now ask anyone in your family to draw a tree without any decorations. **They must not look at what you have done.** When they have drawn their tree, you are going tell them which decorations to draw and where to place the decoration.

Did they get them all right?

Swap round and they choose the decorations and describe them to you, for you to draw.



Helpful hints: Try to encourage mathematical language so, for example, use 'circle' not 'round' to describe a shape. If the child is not sure, you could say 'my shape has 3 sides and is a triangle'.

Family comments:

Child comments:

Curriculum Link

Explore characteristics of everyday shapes and use mathematical language to describe them.

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Roll over

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Sing the rhyme together 'There were 10 in a bed':

"There were 10 in a bed and the little one said

Roll over...roll over...

So they all rolled over and one fell out.

There were 9 in the bed and the little one said..."

Continue until there are none in the bed.

Helpful hints: Great fun to act this out with teddies as you sing – this reinforces what is happening to the numbers as you count back and also what zero signifies. Stop at some points to ask how many are left? How many have fallen out? How many did we start with? This will build the understanding of addition and subtraction.

Family comments:

Child comments:

Curriculum Link

Counting backwards in ones; recognising the value of zero (none).

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Squirrels

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Sammy squirrel found 20 nuts. He was very excited and took them to show his friends – Suzie, Simon and Samjah. They all jumped about excitedly and said, "Can we have some too?"
"No, no!" said Sammy, "I found them so they are mine."

What should Sammy do? What would be fair?

Helpful hints: Use toys and counters (or similar) to count and decide on the number of nuts each can have. Encourage your child to touch and move each 'nut' and check groups by counting. Talk about equal, fair, one more than and one less than. Talk about why it is fair (it does not have to be equal groups to be fair in this case – your child may decide Sammy should have the largest share; it is the talking and justification which is important).

Family comments:

Child comments:

Curriculum Link

Count to 20, consider equal and unequal groups, check by counting.

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Mad Hatter's tea party

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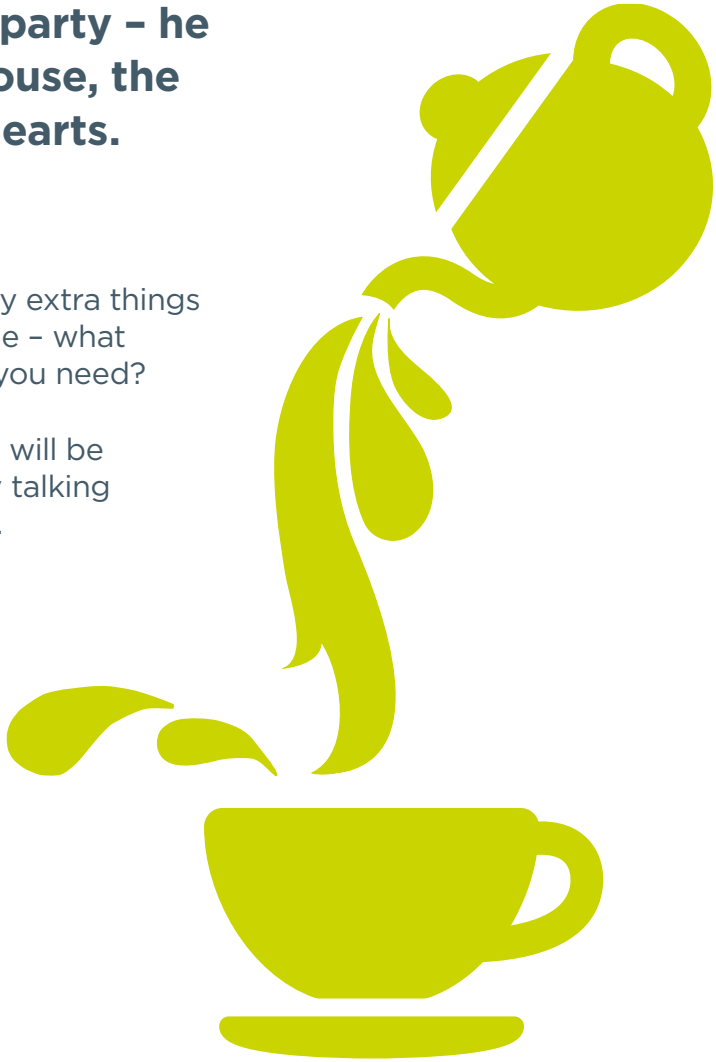
The Mad Hatter is throwing a tea party – he has invited Alice, the Dozy Dormouse, the White Rabbit and the Queen of Hearts.

How many knives and forks will he have to lay? How many spoons? How many cups?

Who else could he invite to his party? How many extra things will he need now? Draw a picture of the tea table – what else could you put on the table? How many do you need?

Helpful hints: Talk about how many more forks will be needed? Add items such as a teapot. Extend by talking about how many sugar cubes might be needed.

If you are unfamiliar with this story, try using 'The Tiger who came to tea' or 'the Teddy Bears picnic' instead.



Family comments:

Child comments:

Curriculum Link

Counting for a purpose, more than, less than.

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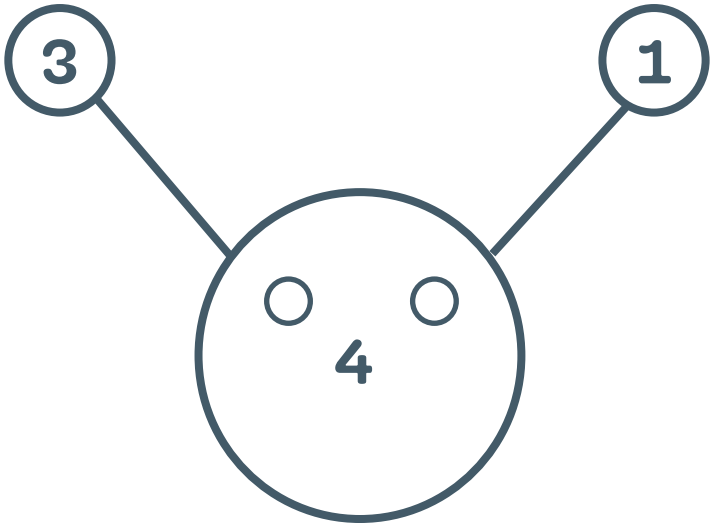
Bugs

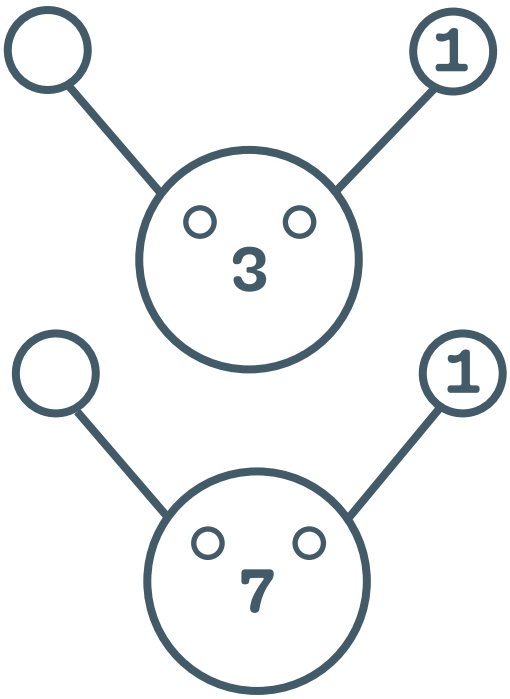
Family Maths Toolkit

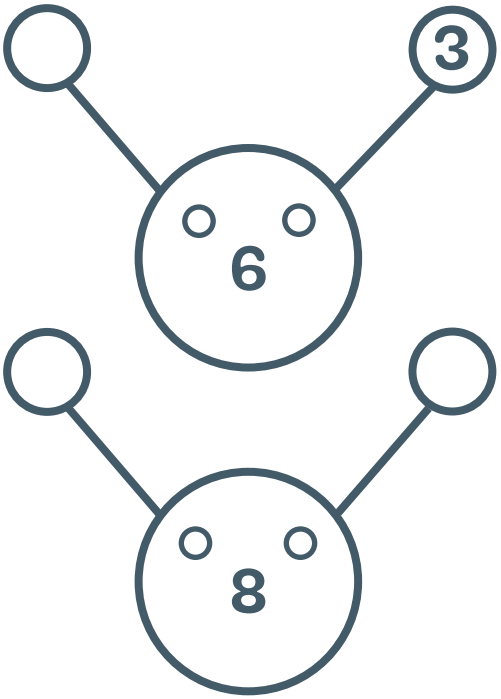
Each bug has two antennae.
The numbers in the antennae add up to the number in the bug's head.

Here is an example:



Can you complete these? (Use counters if you need to.)





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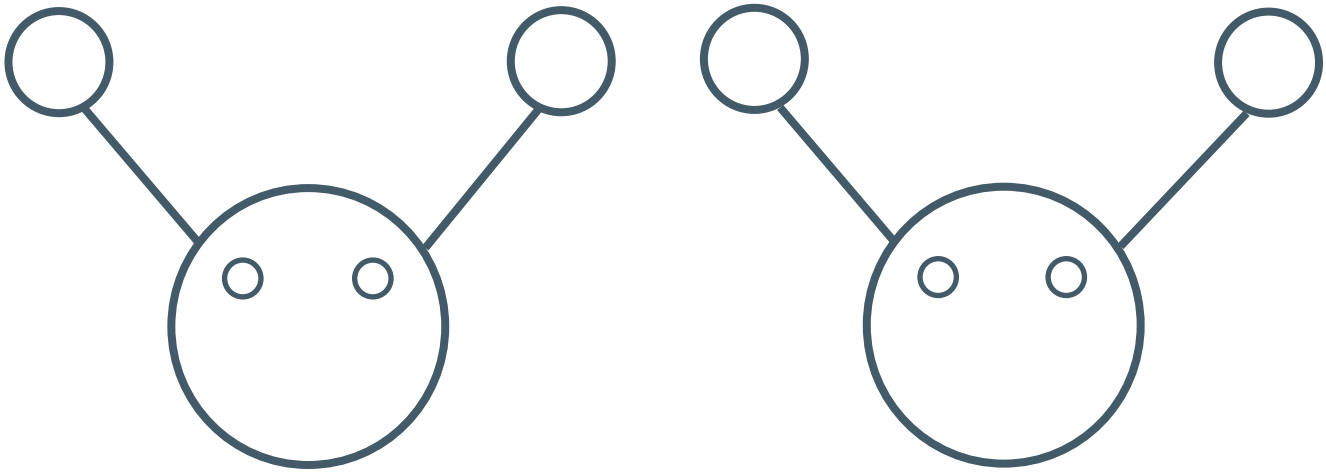
Can you make one up for your family to complete?



Helpful hints: When your child is confident with adding the two numbers, talk about how 4-1 will give 3 and 4-3 will give 1. The bugs can be used for adding or subtracting.

If it is quite hard, put 4 counters (or raisins, pasta shapes) in the circle and take out 3 to put in a smaller circle. How many are left? Put the 1 in the other smaller circle. Talk about how it is still 4 but you have made parts of 4.

Family comment:

Child comment:

Curriculum Link

Add two single digit numbers.

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Time

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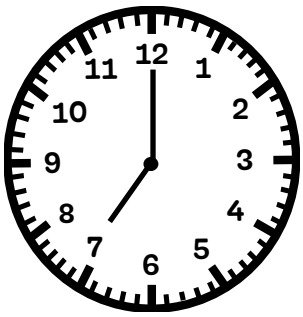
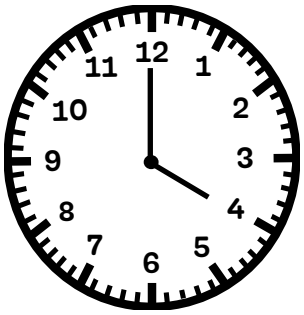
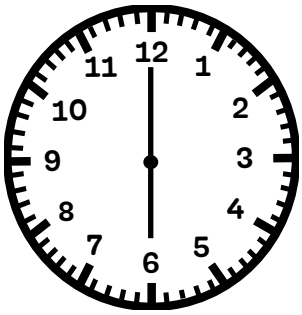
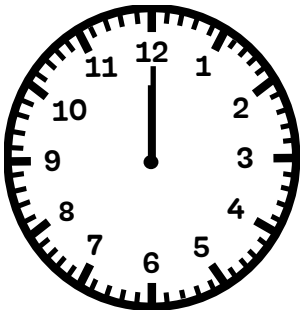
Look at the times on these clocks – what time do they say?

Can you draw the clocks and draw what you might be doing at that time of day?

Helpful hints: Talk about the times shown and discuss what your child might be doing - at home or at school. Talk about AM or PM times. For example, you might be getting out of bed at 7AM or going to bed at 7PM.

Family comments:

Child comments:

Curriculum Link

Use everyday language to talk about time.

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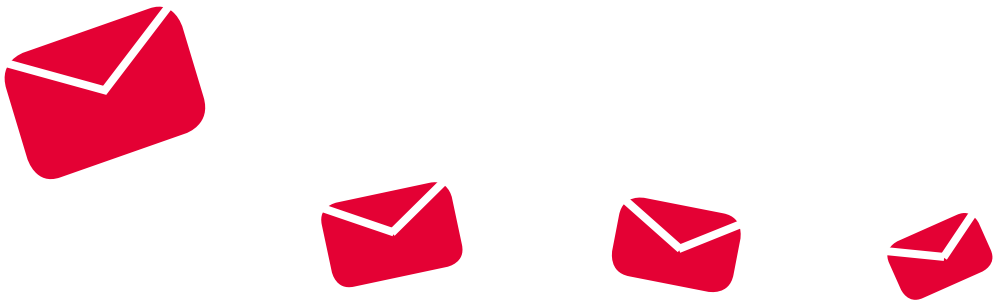
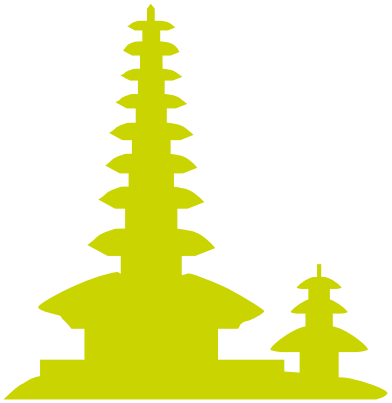
Chinese Lion Dance

Family Maths Toolkit

In China, there is a Lion Dance as part of the New Year celebrations. Dancers dress in big, red lion costumes. They dance and collect money in red envelopes. People think it will bring them good luck if they give the lion money.





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These envelopes have pound coins in –

- How much is in each envelope?
- How much has the lion collected altogether?
- How much would he have if each coin was £2?

Helpful hint: Encourage your child to count each envelope separately first and ensure they can count accurately, then count all the envelopes moving on to counting in 2s if the child is ready.

Family comment:

Child comment:

Curriculum Link

Count reliably to 15; count in 2s; solve problems involving coins.

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Easter egg patterns

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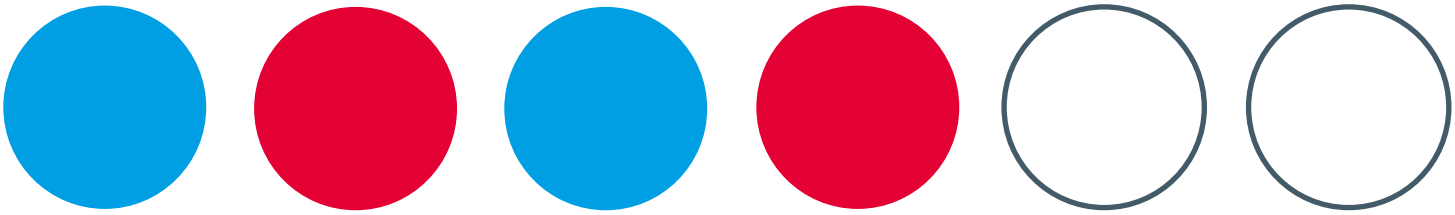
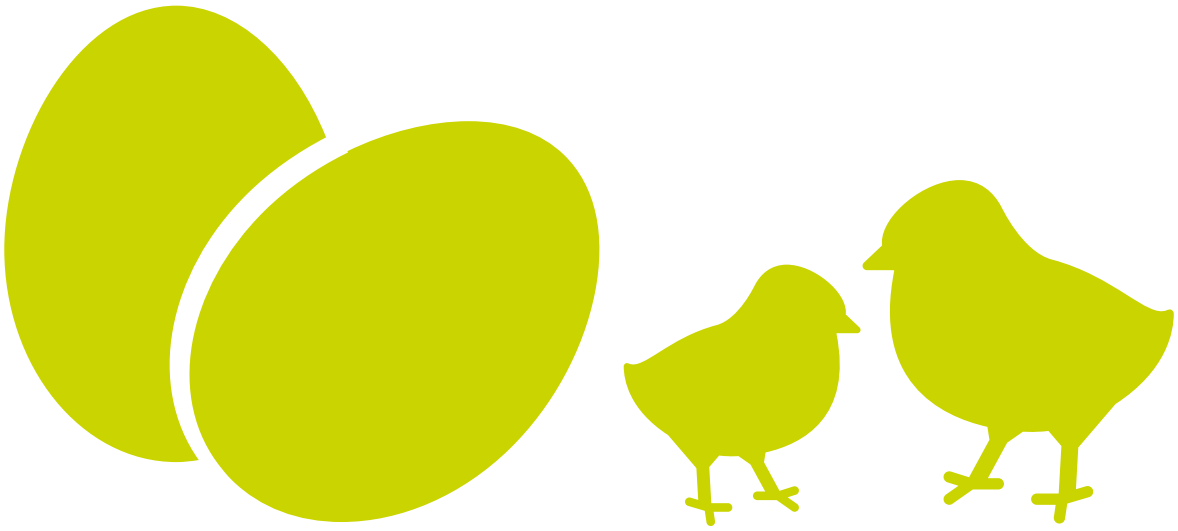
Tom is making some patterns for Easter egg wrapping paper.

Can you continue these patterns?



Here is another harder pattern:



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Then Tom wanted to use 3 colours and he tried this pattern:

Could you make a pattern and talk about it? Ask your family to make one too and choose which is the best.

Helpful hints: Talk about what comes next? Would it be the same pattern if a colour changed but not the shape? Next to, before, order, how do you know? Same, different.

Start simple and make the patterns more complex if they are easily recognised.

Family comment:

Child comment:

Curriculum Link

Recognise, create and describe patterns.

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One hundred square puzzle

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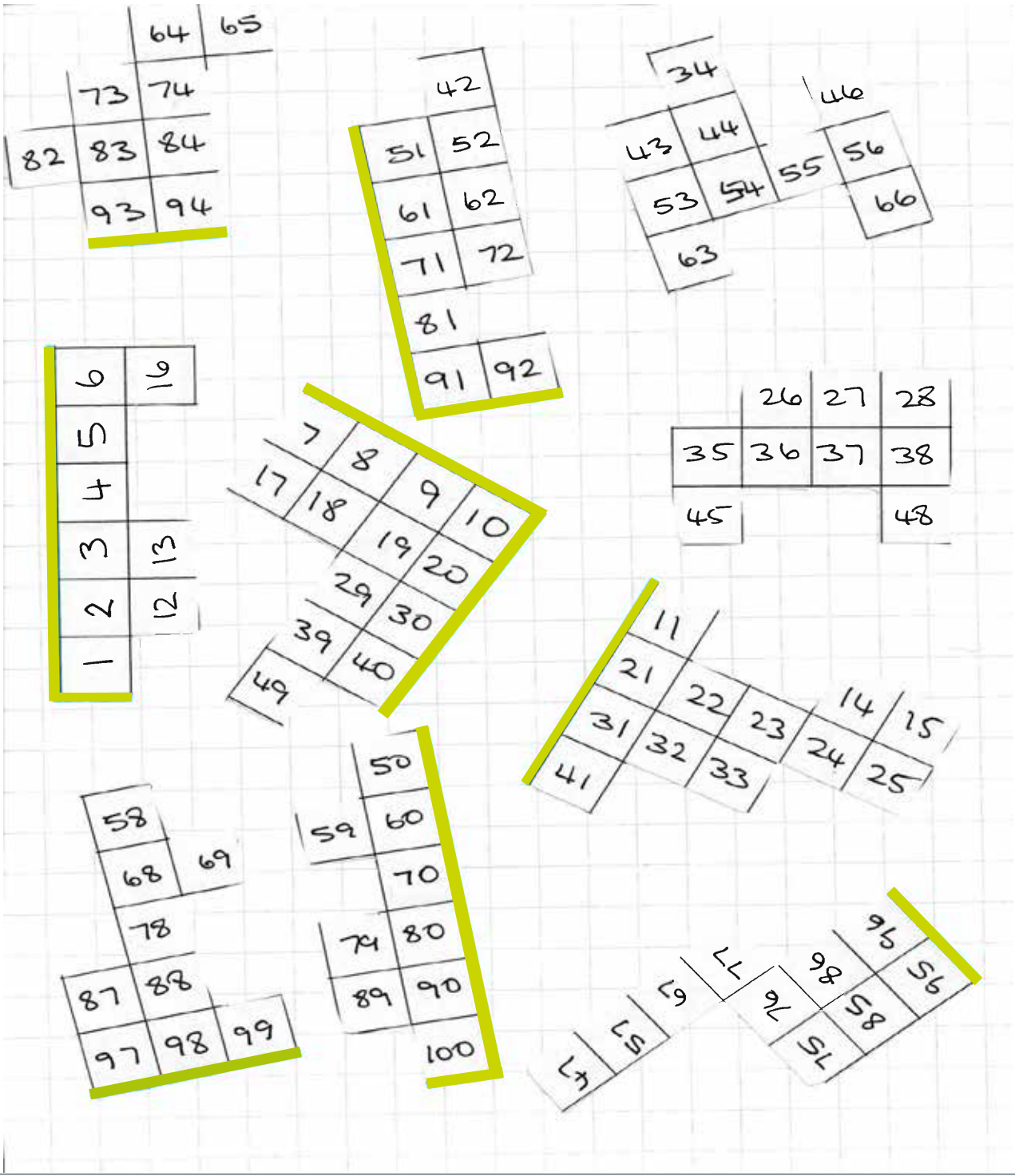
Here is a number square from 1 to 100.
It has been cut up to make a puzzle.



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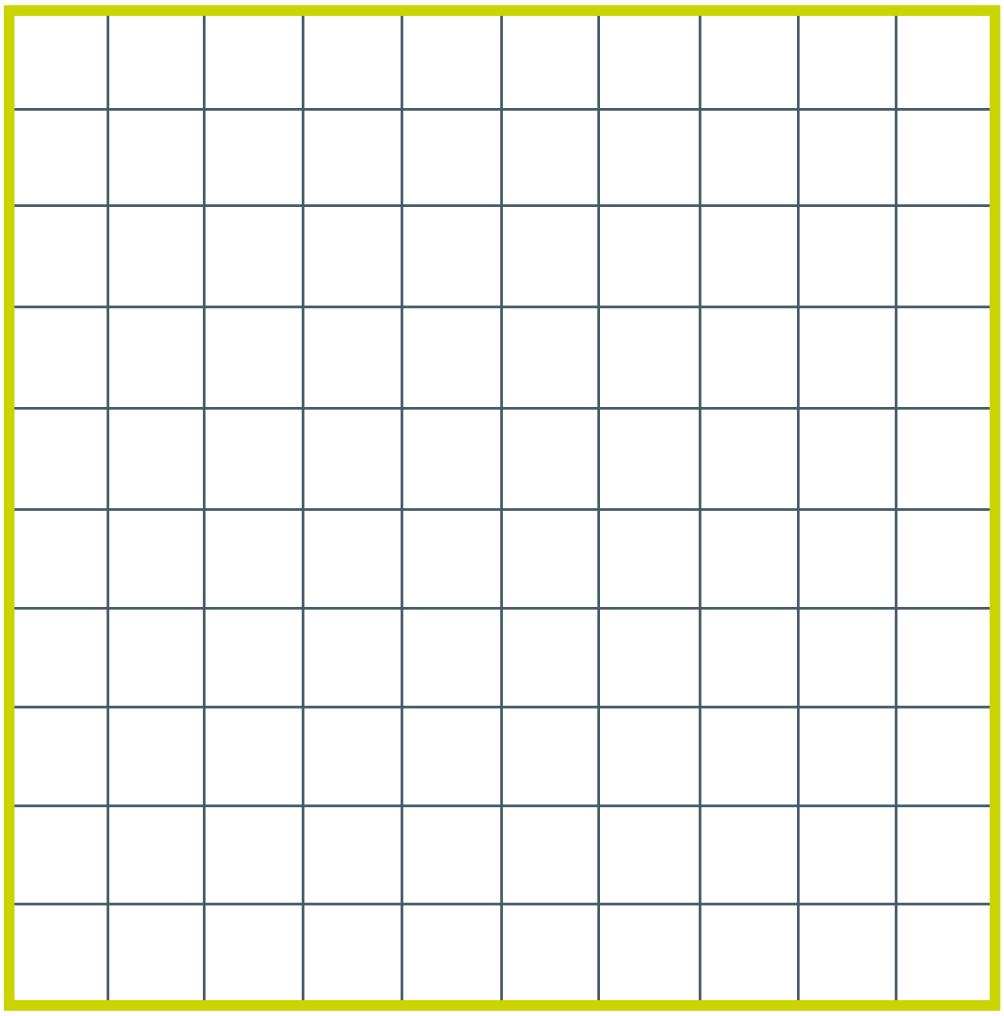
Can you make the square again, putting the numbers in the right order?



Could you make your own to challenge your family and friends?

Helpful hint: Encourage talking about the number before, the one after, the patterns of going up or down in tens, how do we know that goes there?

Family comment:

Child comment:

Curriculum Link

Count reliably to 100, place numbers 1 to 100 in order.

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Burying bones

Family Maths Toolkit

Paddy the puppy has dug 4 holes in the garden to bury his favourite bones. There are 8 bones.

How many different ways can you find for him to bury his 8 bones? Is there a way all the holes could have the same number of bones?

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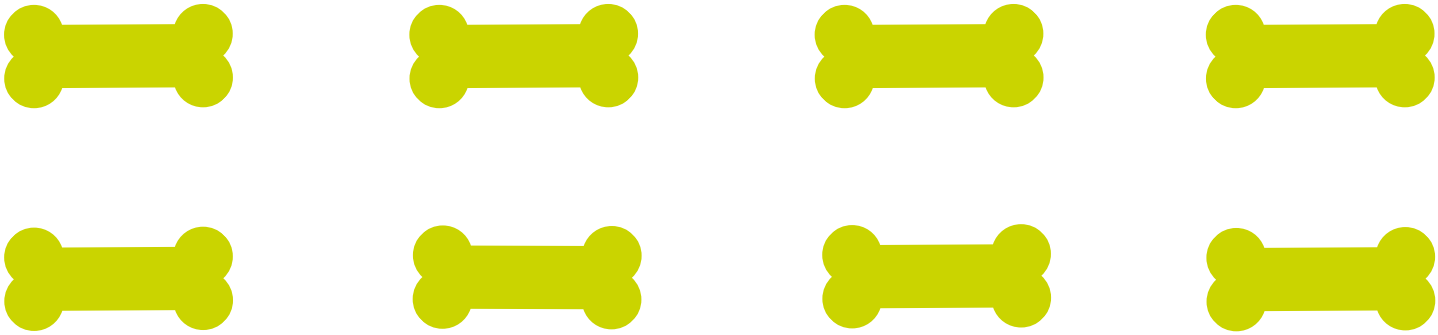
Helpful hints: Draw 4 holes and cut out the bones (or use the same number of counters) so your child can move them around and count. If equal groups are found, encourage counting in 2s.

There are many unequal possibilities but only one equal grouping. It is not the aim to find all possibilities but to experiment and talk about possible groups.



Family comment:

Child comment:

Curriculum Link

Solve practical problems that involve grouping or combining groups of 2, understanding of the value of zero.

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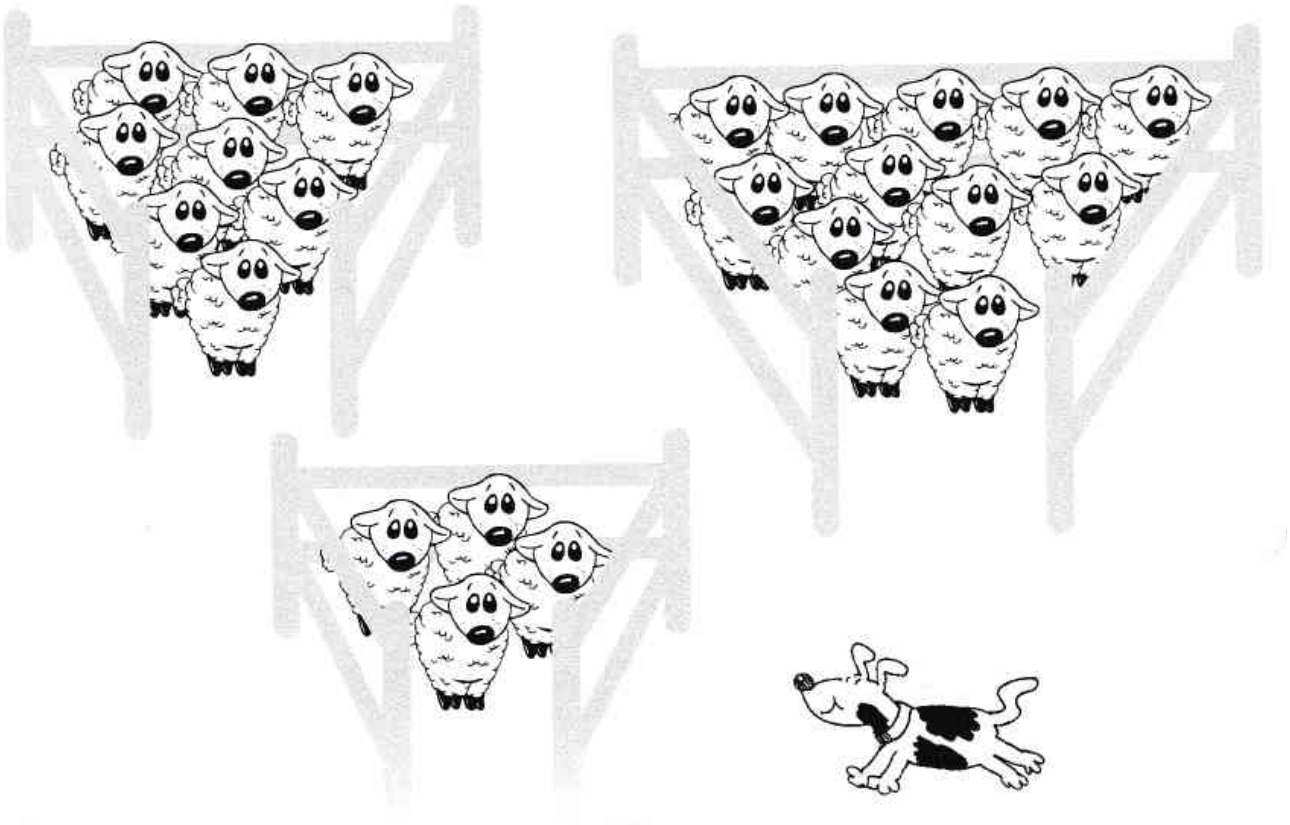
Sheepdog trials

Family Maths Toolkit

Paddy is a sheepdog. He must chase 12 sheep into 3 pens of different sizes.

Each pen must have a different number of sheep – the largest pen must have the most sheep and the smallest pen must have the fewest sheep. No pen can be empty.



How many sheep might Paddy try to get in each pen? Find as many different ways as you can.

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Helpful hints: Use counters or pasta shapes to represent sheep and complete the activity practically to try out different combinations. Talk about more than and less than, talk about the value of zero if no sheep are in a pen. Record as drawings or as the child wants to (some may draw and some may write sums – it is the problem solving and talk which is important).

Family comment:

Child comment:

Curriculum Link

Numbers beyond 10, estimate a number of objects and check by counting, say which number is one more or one less, count reliably, solve problems, add and subtract one digit numbers, understanding of zero.

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Biscuits

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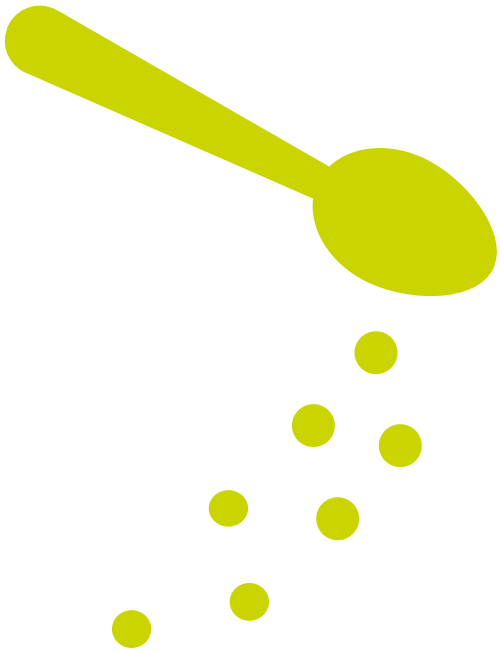
Ingredients

- 2 cups* of plain flour
- 1 cup* of butter
- 1 cup* of brown sugar
- 1 small beaten egg
- 2 teaspoons of mixed spice
- Pinch of salt



For the icing:

- 1 cup* of icing sugar
- 1-2 tablespoons of hot water
- food colouring if desired

* the cup should hold around 4 oz or 125 g

Oven: 190°C/ 375°F/gas mark 5

Grease two baking trays

Beat the butter and sugar together until fluffy. Beat in the egg a bit at a time.

Sift in the flour, salt and spice. Mix everything well to make a ball of firm dough.

Sprinkle some flour on to a table and a rolling pin. Then roll the dough until it is about ½ cm thick (length of your little finger nail).

Cut the dough into shapes. Gather any dough left and roll it up again to make more shapes.

Put the biscuits on the trays. Bake them on a high shelf for about 15 minutes until light brown.

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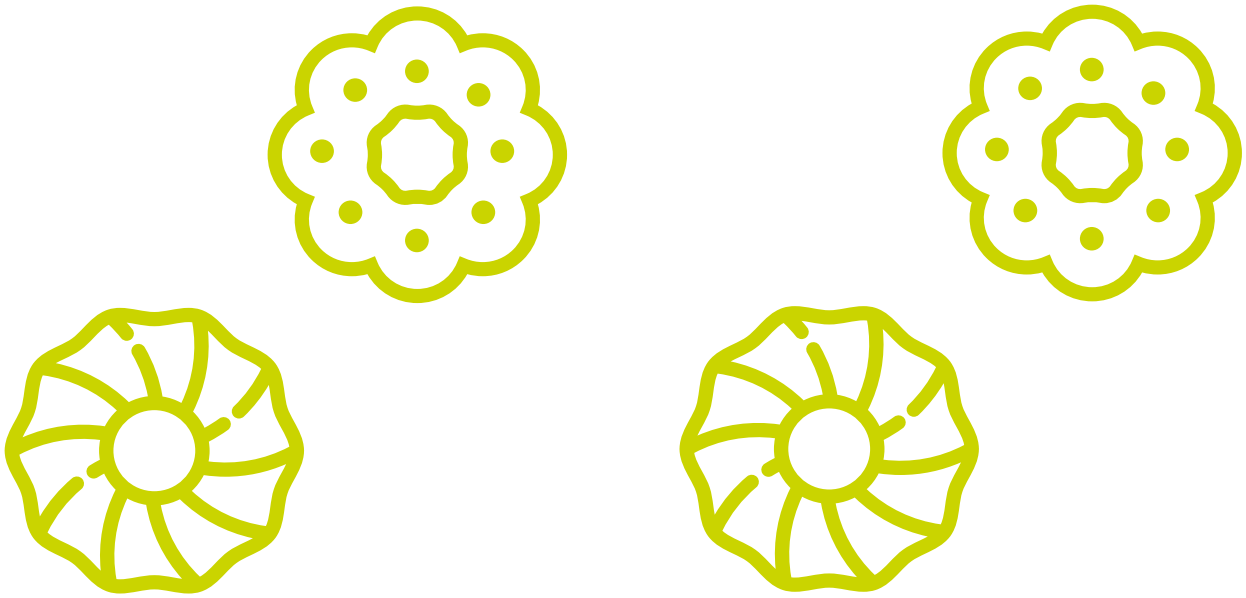
Put the biscuits on a wire rack to cool. Mix the icing sugar and hot water together until smooth. Add some colouring if liked.

When the biscuits are cool, spoon half a teaspoon of icing on to each one and spread it out evenly. They could be decorated with silver balls or anything else you like.

Enjoy your biscuits!

Helpful hints: Talk about the same as, different, more than, less than, equal to, double, what would happen if..., time, how long, hot, changes in dough – soft until cooked.

If it is not possible to make biscuits, share some other cooking with your child and talk about the quantities of ingredients.



Family comment:

Child comment:

Curriculum Link

Use everyday language to talk about weight.

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Cost of an ice-lolly

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Matthew wants to buy an ice-lolly.

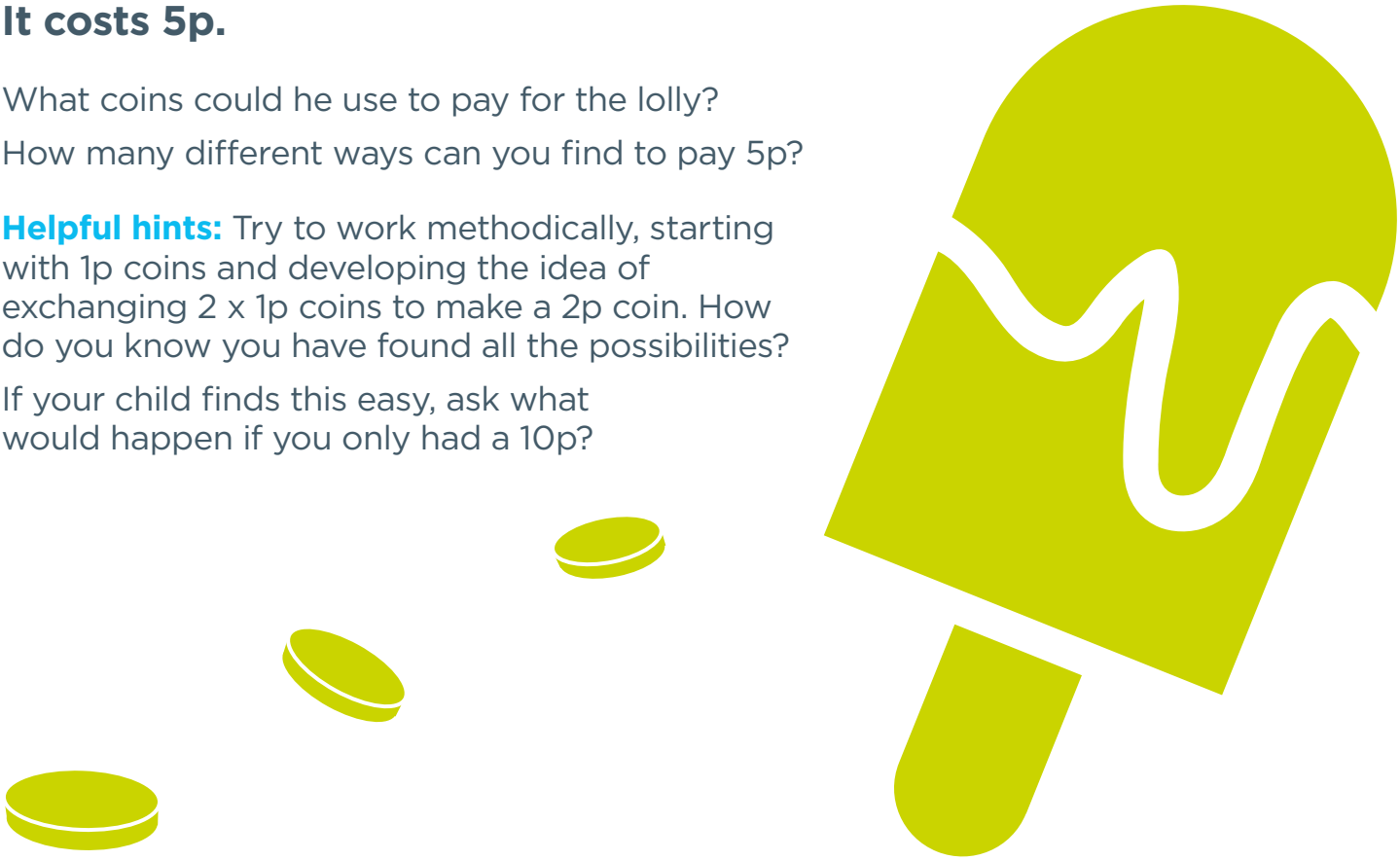
It costs 5p.

What coins could he use to pay for the lolly?

How many different ways can you find to pay 5p?

Helpful hints: Try to work methodically, starting with 1p coins and developing the idea of exchanging 2 x 1p coins to make a 2p coin. How do you know you have found all the possibilities?

If your child finds this easy, ask what would happen if you only had a 10p?



Family comments:

Child comments:

Curriculum Link

Recognise coins and their values, solve problems using coins, use everyday language to talk about money, compare the value of coins.

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YR/Ages 4-5 Activities answers

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Two dogs

- 2 tails
- 2 noses
- 4 ears
- 1 ball
- 8 legs

Mad Hatter's tea party

5 'people' in total so 5 of everything – except teapot and sugar cubes

Bugs

2+1 = 3; 3+3 = 6; 6+1 = 7; 0+8 or 1+7 or 2+6 or 3+5 or 4+4 = 8

Chinese Lion Dance

£3; £2; £1; £4; £5
Total = £15; if £2coins used, total = £30

Burying bones

15 possibilities (13 unequal) but not expecting children to find them all – 4 groups of equal 2 is a good conclusion for this activity

(8000/7100/6200/6110/5300/5210/5111/4400/4310/4211/4220/3320/3311/3221/2222)

Sheepdog trials

7 possibilities:

- 9.2.1
- 8,3,1
- 7,4,1
- 7,3,2
- 6,5,1
- 6,4,2
- 5,4,3

Cost of ice-lolly

4 possibilities:

- 5p
- 2p, 2p and 1p
- 2p, 1p, 1p, 1p
- 1p, 1p, 1p, 1p, 1p

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