



Maths - Division with natural objects

<p>Learning Intention</p> <p>How to divide objects into equal shares evenly?</p>	<p>Maths Stage 2 - 3</p> <p>Multiplication and Division</p> <p>MA2-6NA uses mental and informal written strategies for multiplication and division</p> <p>MA3-6NA selects and applies appropriate strategies for multiplication and division, and applies the order of operations to calculations involving more than one operation</p> <p>Problem Solving</p> <p>MA2-2WM selects and uses appropriate mental or written strategies, or technology, to solve problems</p> <p>MA3-2WM selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations.</p>
<p>Content</p> <p>Mathematics can involve making equal shares and recording matching division sentences, including any remainders.</p> <p>Maths vocabulary: shared between; divide (\div); starting number; remainder.</p> <p>Students will do division maths using an echidna they have made at home.</p> <p>Using a clay ball or homemade salt dough (see recipe) to represent an echidna, students find and break sticks into equal size counting pieces to make the echidna spikes whilst learning about dividing numbers and remainders.</p>	<p>Activities</p> <p>1A -make an echidna out of clay or salt dough.</p> <p>1B - collect sticks and break into piles of even numbers</p> <p>1C -divide the sticks by the numbers of echidnas you have made.</p> <p>1D - Extension (optional)</p>
<p>Additional info</p> <p>How to make salt dough</p>	

Activities: 1A -make an echidna body out of clay or play dough. Use rocks for eyes

Simple salt dough recipe:

1 cup salt

2 cups of flour

$\frac{3}{4}$ cup of water

Few drops of food colouring (optional)

In a large bowl mix salt and flour together.

Gradually stir in water (and food colouring if you would like). Mix until it is dough-like.

Turn the dough onto the bench and knead with your hands until smooth and combined.

Make your creations using the salt dough.

You can dry in the sun or place the salt dough into the oven at 180C. (The amount of time needed to bake depends on the size and thickness of the salt dough creations.)



1B - collect sticks and break into even lengths. Write down the number of sticks you have.

Now, count your echidnas. Divide the sticks by the number of echidnas you have made by making an even pile of sticks for each echidna. For example if you have 4 echidnas put your sticks into 4 even piles.

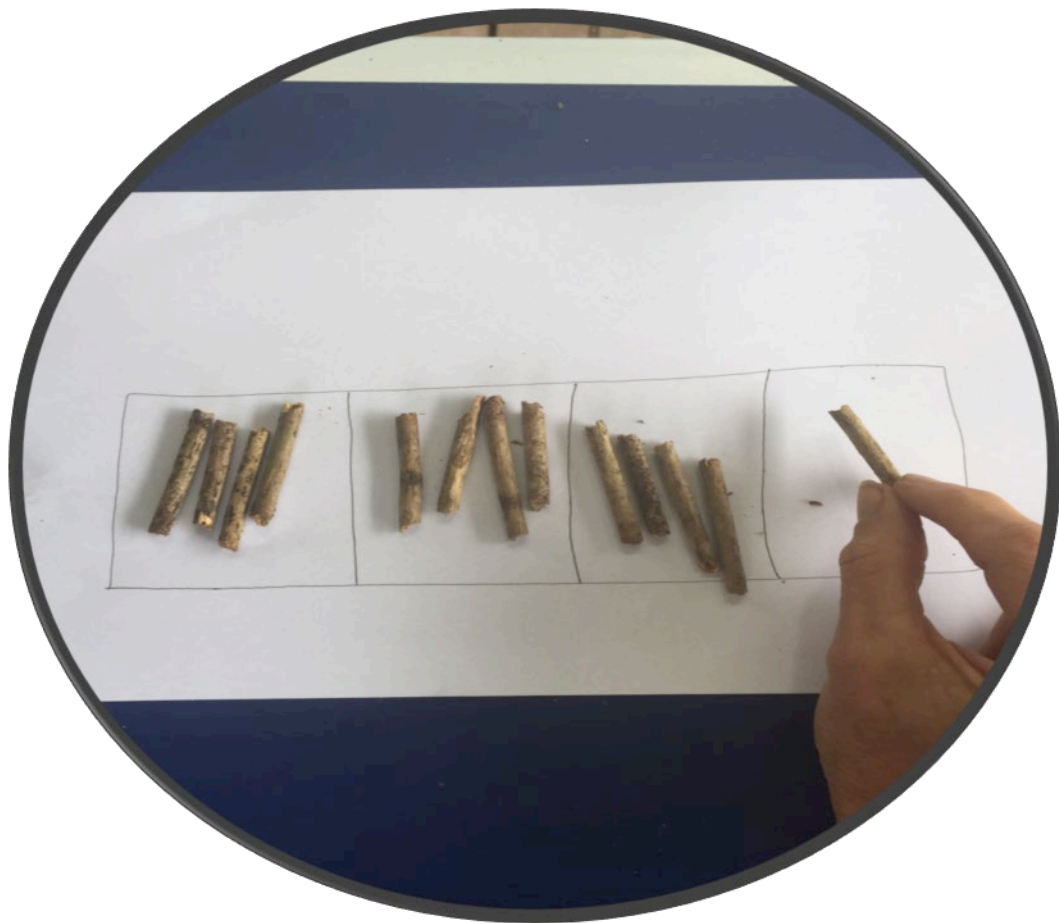
The number of sticks left over is your *remainder*



1C - Stick your even piles into each one of your echidna bodies. Leave the remainder pile to the side.



Draw a table like the one below with a frame for each echidna. The one shown is a table for 4 echidnas.



Scoop up the spikes from 1 echidna and put them in the first of the frames.

Chant, "When we share, we start with a lot, we end with a little each.

Just like subtraction, division makes your number smaller. You start with the big number and this number gets smaller as you share it out.

Unlike subtraction, the share must be fair. Earlier, you recorded your **starting number** before sharing it out.

If the number was 16 and you had 4 echidnas your table would look like this one below, with 0 remainder. The sentence is 16 shared with 4 echidnas equals 4.

1111	1111	1111	1111
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This represents $16 \div 4 = 4$

If the number was 16 and you had 3 echidnas then the table would look like the table below, with 1 remainder. The sentence is 16 shared between 3 echidnas equals 5 remainder 1

11111	11111	11111
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This represents $16 \div 3 = 5$ with 1 remainder

Questioning:

Will the number each echidna receives be higher or lower than the starting number? Will it always be lower? How do you know?

Why can't we just give the leftover spikes to one of the echidnas and make it an unfair share?

1D - Extension (optional)

A. Make more echidnas and gather more sticks to make more division sentences. Show the people in your house.

B. Take a large number of sticks, say 24, and share them between 3 echidnas, then 4 echidnas, then 5 echidnas.

Say the sentence 24 shared between ____ echidnas equals ____ remainder ____.

Write the number sentence

24 ÷ ____ = ____ with ____ remainder.

C. Can you create a matching 'groups of' sentence about what you can see?

I see 3 echidnas with 8 spikes each, that makes 24

$$3 \times 8 = 24$$