

Maths on the Farm



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Maths on the Farm



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Maths on the Farm



Introduction

This booklet is based on ideas presented at seminars delivered by Steve Humble, “Dr Maths”. Teachers and farmers came together to find out:

How do we incorporate maths into farm visits?

The important thing is to make it fun and to use mathematical language (nothing complicated, just terms like triangle, rectangle, symmetry, number, pattern, estimate—see page 5).

If you are a farmer, talk to the teacher in advance to find out what level of maths the children are working at. It probably isn't appropriate to explain Pythagoras Theorem to a class of 5 year olds!



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Just a piece of rope

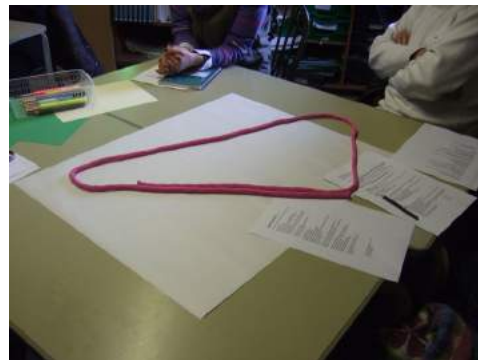
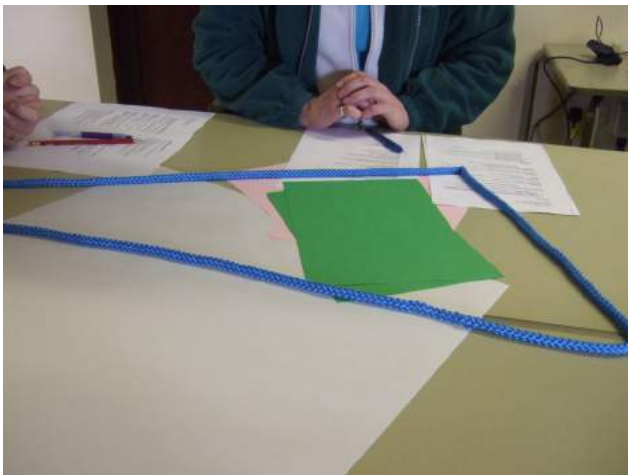
Divide the children into small groups. Provide each group with a length of rope.

Can the children use the rope to form a triangle? (or a square, or a rectangle...)

Can they change the shape to a different triangle?

Can they name any of the triangle shapes ?

(isosceles has two equal sides and two equal angles; equilateral has three equal sides and three equal angles; scalene has no equal sides and no equal angles)



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Maths questions: starting points

Dr Maths shared with us some simple ways to introduce maths questions:

Look at that! Look around you! What can you see?

How many?

How far or near?

How long, tall, short, tall, high, deep, heavy?

How many lines? How sharp? How curved?

How many things?

How many things in a line? How many in a shape?

How much do you see? How much more is hidden?

Can you find 5 of these...?

Estimate the size, height, length, weight of...

Can you find the middle of...?

What is the name of...?

What kind of number?

What kind of pattern?

Can you continue this pattern?

What is the chance of that?

What kind of shape? What shapes do you see? Draw them

If you can, name them.

Did you find the...?

Why do you think lots of triangles have been used?

Why do you think the bridge is arched?

Why do you think the path does not follow a straight line?

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What if we change this?
What if we add a line? What if we add a shape?
What difference does it make? Is it still symmetrical?
What if we double it?

What if we change the area?
What if we alter the symmetry?

Could you make a pattern with...?
Show that this works. Is it always true?
Imagine....



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Farm animal shapes

Using large pieces of paper and pens or crayons, ask groups of children to create farm animals using shapes.



Encourage the children to talk about the shapes they have used. Link this into a farm walk. How do the animals they see compare to the ones they have drawn? What other shapes can they see on the farm? (See Shapes on page 10)

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Farm animal cards



Farmyard Snap can be played using cards which are purchased or, better still, help the children to create their own.

Making the cards

Use a piece of A4 thin card. Fold it lengthways; and lengthways again; then fold in half.

Ask the children how many cards they think they will have made!

Cut along the folds (ask teacher's advice regarding appropriate age for use of scissors.)

Using shapes or outline drawings, children must create identical pairs of cards.



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Out and about on the farm

There are so many things on the farm which involve maths!

Wheels

(Health and Safety: Any vehicles need to be parked safely and without keys in the ignition and personnel on the farm need to be aware what the visiting children are doing).

- How many wheel nuts?
- What's the pattern on the tyre?
- Can you measure the circumference?
- What is the line of symmetry?
- Estimate the biggest wheel.
- Which wheel would go further in one turn?



Add more questions of your own!



Walls and flooring

- Can you count how many bricks/tiles in a certain place/ in a square metre?
- Can you find patterns in the floor?
- Could you make different patterns with the same shaped bricks/tiles?

Containers

- Estimate the capacity.
- Can you measure....
- How many...
- What does the writing say?



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Shapes

There are so many shapes to discover on the farm.

Pose questions such as :

How many squares can you find?

Draw two circles that you can see on the farm.

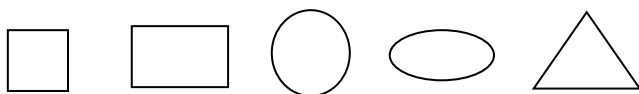
How many different triangles can you see in the gate?



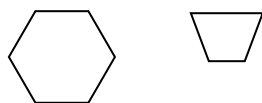
Look around you. What shapes can you see?

Draw a circle around each of the shapes below as you find them.

Square Rectangle Circle Oval Triangle



Hexagon Trapezium



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Or you could create an I Spy sheet with photos of different shapes to find and name.



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Creating a maths walk

At the seminar, we took a walk around the farm and made notes of stopping points where we looked for maths clues. You could do this anywhere on the farm (or in other locations).

Here are some sample questions from the Maths Trail that was created as a result of our walk.

Starting at the garden tree, find a route to the bench along one of the many paths.



During your journey from the tree to the bench you can only walk on each path in the garden once and only once.

Can you find a different route?

How many different routes can you find? _____

Find the **Storytelling Circle** on your journey around the farm.

How many different ways can three children sit on these 3 stone chairs?



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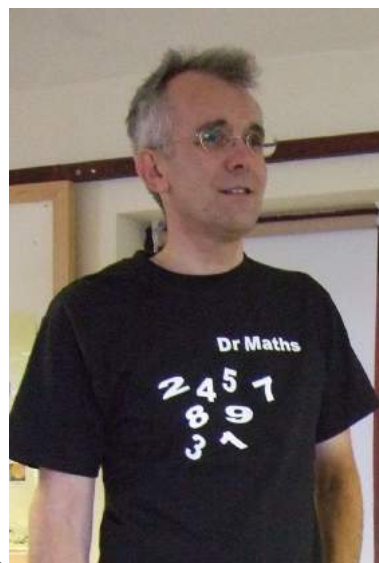
Links

The seminar from which this information was provided was organised by FACE and delivered by Steve Humble, "Dr Maths".

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<http://drmaths.org>



More useful links:

National Centre for Excellence in the Teaching of Mathematics

You need to create a login but then search for Learning Maths Outside the Classroom

<https://www.ncetm.org.uk/resources/>

Farming Counts

Maths activities from LEAF Education

<http://www.countrysideclassroom.org.uk/resources/667>