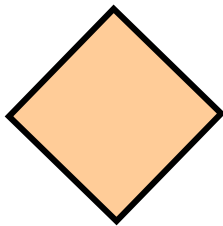




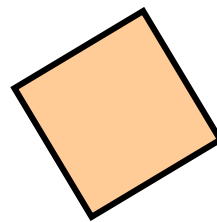
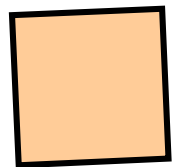
INVESTIGATION



Halving



I love
chocolate!!



MathSphere

Halving Investigation

Starter

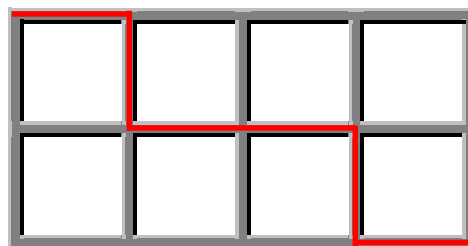
Imagine you have a lovely large bar of chocolate!

The bar has 8 smaller pieces, made up of two rows of 4.

But... you have to equally share the bar of chocolate with a friend.

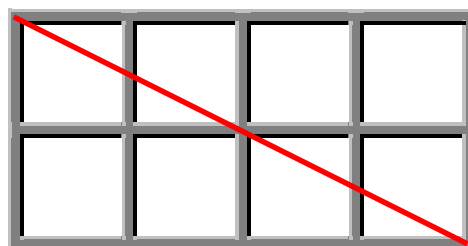
Oh well, never mind!

Here is one way of cutting the bar in half:



You will get 4 pieces and your best friend will get 4 pieces.

Here is another way of cutting the bar in half:



How many ways can you cut the bar in half?

Some Ideas

Work in a methodical way, recording your results carefully as you go.

Think about how to set out your results clearly.

Try to find as many rules and patterns as you can.

Can you be sure that you have got all the possible ways of dividing the bar in half? Is this possible?

You might decide that you are only going to use whole pieces and not any diagonal lines.

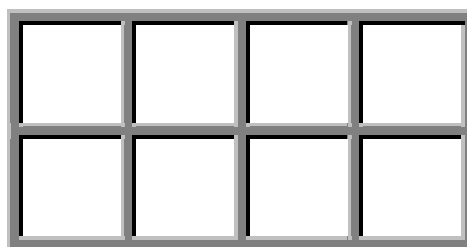
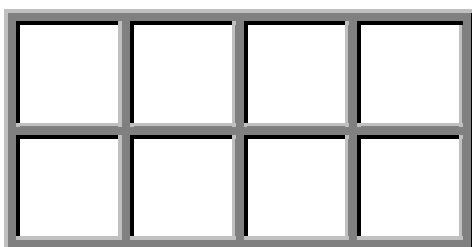
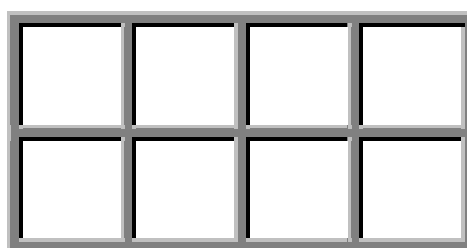
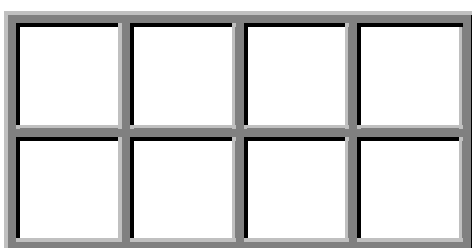
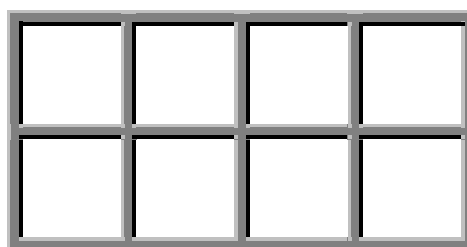
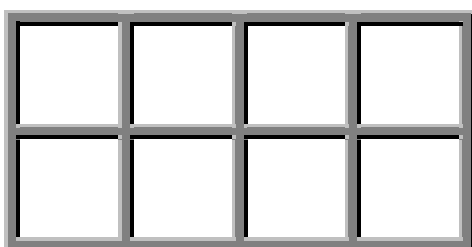
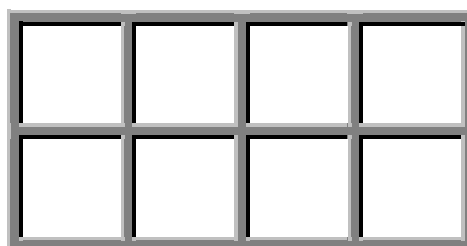
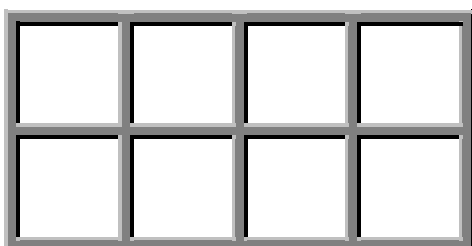
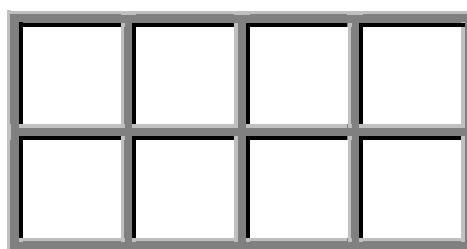
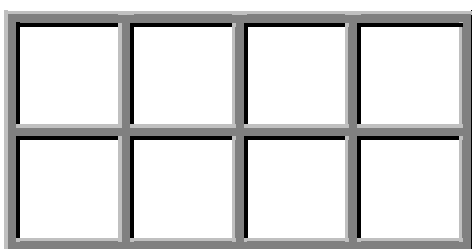
What would happen if you changed the shape of the bar?

What would happen if you changed the number of pieces - perhaps just 6 or 10?

What would happen if you shared the bar into four equal parts?

Is there a way to write down the fractions that you have divided the bar into?

Bars of chocolate



Answer Guide

This is an excellent investigation for children to explore the concept of a half.

Using the OHP a whole class introduction is a good way to start this investigation. Children can come out and divide or colour the bar to show two halves. Rules and limitations can be discussed.

There are numerous ways of dividing the bar into two halves and it might be a good idea if the children set themselves some rules to work by - no diagonals, only cut along straight lines, keep pieces in twos etc.

Keeping track of how they have divided the rectangle is tricky and working in a systematic way will help with this. One good idea is to see how many ways the bar can be divided starting from the same position.

Symmetrical shapes may also be a discussion point whilst doing this.

More able children may be able to show their answers including a fraction - one piece being $\frac{1}{8}$ of the total.