A Guide to Place Value

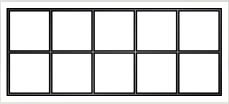
Maths Equipment

In this guide we use ten frames, counters, straws and a mini-whiteboard.

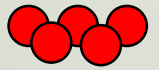
If you don't have these you could:

- draw a ten frame on poster paper or the back of a cereal box
- make your own counters using card
- use other objects such as dried pasta or small toys
- use pencils or strips of paper instead of straws.

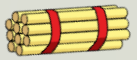
4 x ten frames



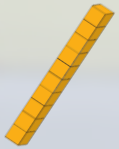
40 x plain counters



40 x straws



4 x base 10 tens



10 x base 10 ones

4 x ten counters

10 x one counters

Maths with Michael

This is a supporting document for episode 1 in our mini-series 'Maths with Michael' which has been produced in collaboration with TV presenter, teacher and parent Michael Underwood.

White Rose Maths

1

We are going to make the number 29 in different ways.

2

Ask your child to fill a ten frame by putting 1 counter in each box. When the ten frame is full, ask them "how many counters are there?"

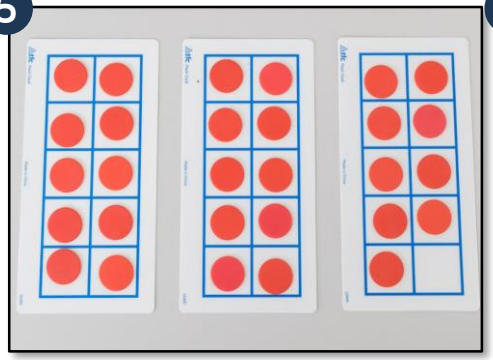
3

Now ask your child to fill another ten frame. Ask them "how many counters are there now?" Show them that there are 2 tens which is 20 counters.

4

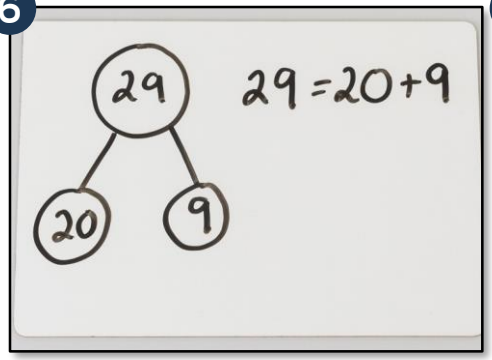
Take another ten frame and ask "how many more counters do we need to make 29?' They may need to count in 1s from 21 to 29 to realise that they need 9 more counters.

5



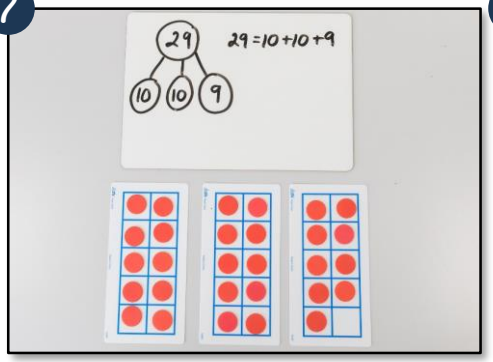
Ask "What number is represented?" Explain that there are 2 tens (completed ten frames) and 9 ones. This is the number 29

6



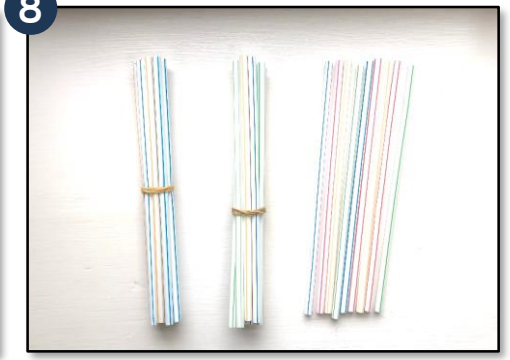
Draw a part-whole model with two parts. Write 29 in the whole and ask your child what the parts could be.

7



Draw another part-whole model with three parts. Ask your child what the parts could be. Ask them to show you where each part is on the ten frames.

8



Ask your child to make 29 using straws. Get them to bundle 20 of the straws into 2 groups of 10.
If you don't have straws, you could use pencils or strips of paper.

Now Try These

15 32 40

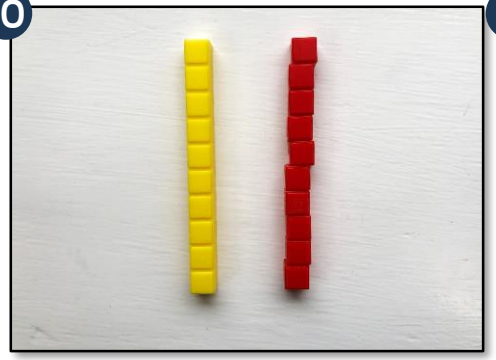
Try representing each of the numbers using ten frames, counters, part-whole models and straws. What does this tell you about each number?

White Rose Maths

9

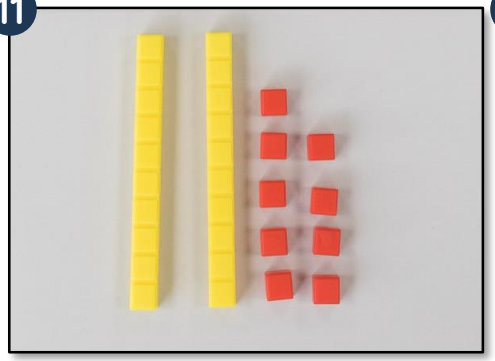
Now explain that we're going to make the number 29 using different equipment, starting with Base 10.

10



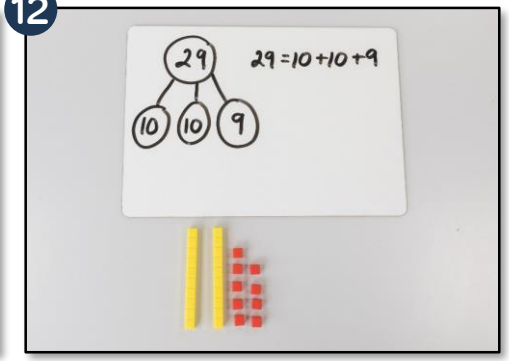
Explain to your child that the yellow rod is worth ten because it is made up of 10 ones.

11



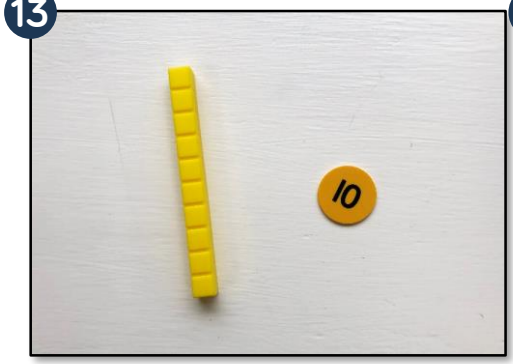
Ask "how many tens are there in 29?" There are 2 tens.
Ask "how many ones are there in 29?" There are 9 ones.
Make the number 29 using Base 10

12



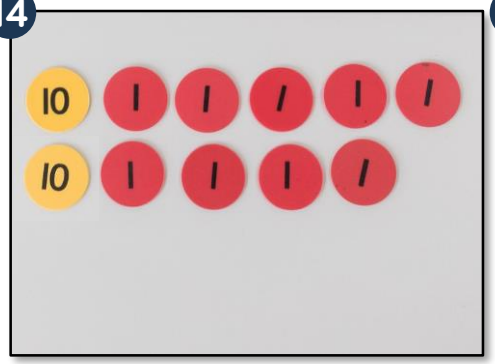
Show this next to your part-whole model from earlier. Ask "where can each part be seen in the Base 10?" Each 10 is a yellow rod and the 9 is the red ones.

13



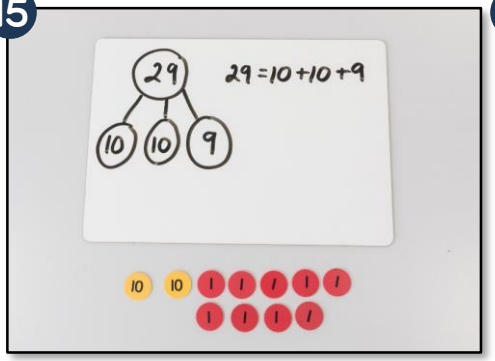
The next step in understanding is for your child to know that the ten rod can be represented by a single ten counter.

14



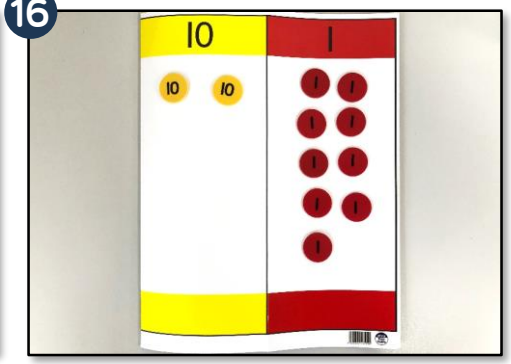
Ask your child to make 29 using place value counters. Show them the link between the tens and ones in Base 10 and the place value counters.

15



Show the counters alongside the part-whole models to reinforce that 1 ten counter is worth 10 ones counters.

16



For next steps, you could show your place value counters on a place value chart. This helps children organise their work.

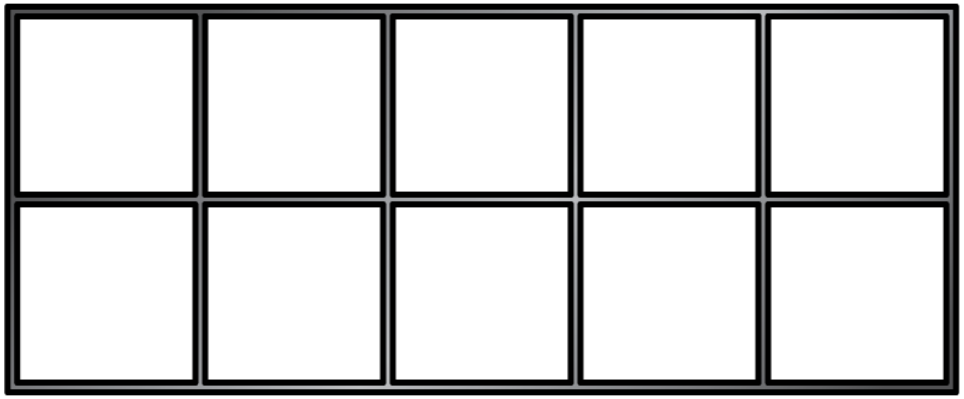
Now Try These

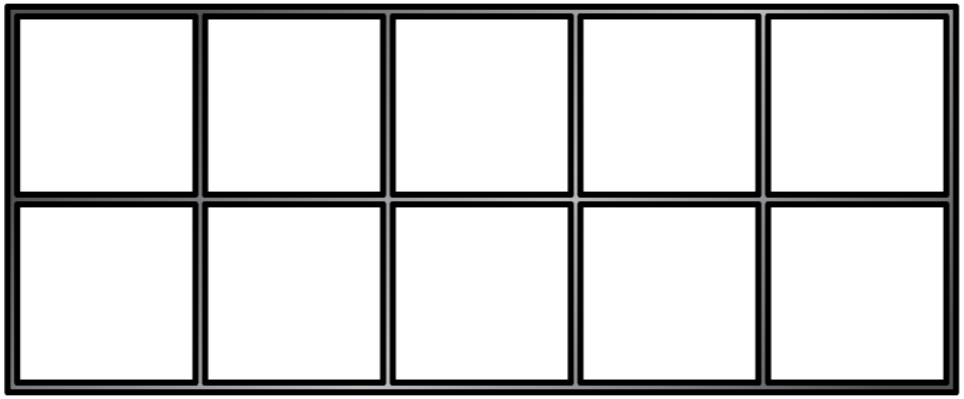
15 32 40

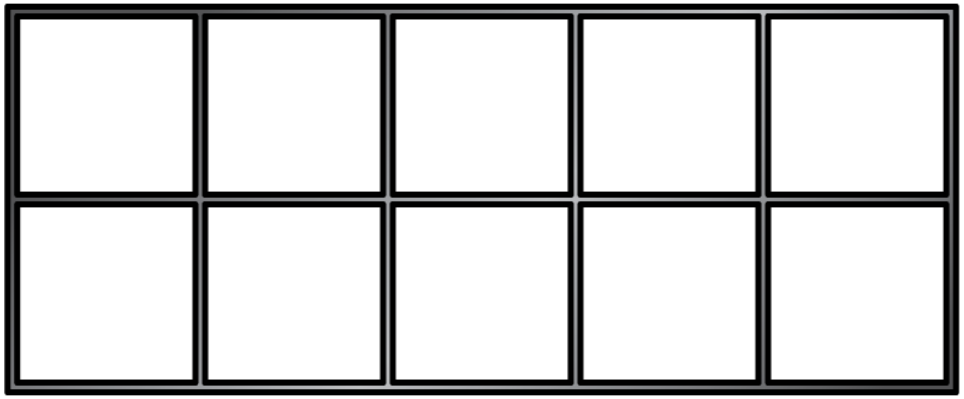
Try representing each of the numbers using Base 10 and place value counters. For older children, try making some bigger numbers.

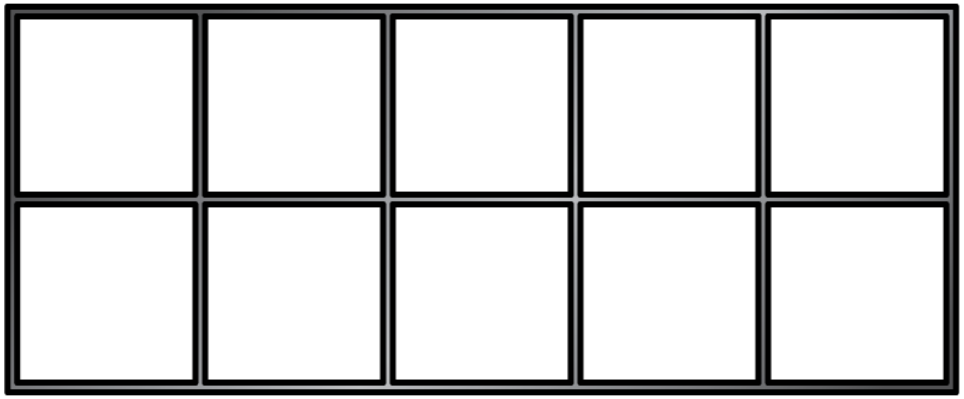
White Rose Maths

Printouts – Ten Frames

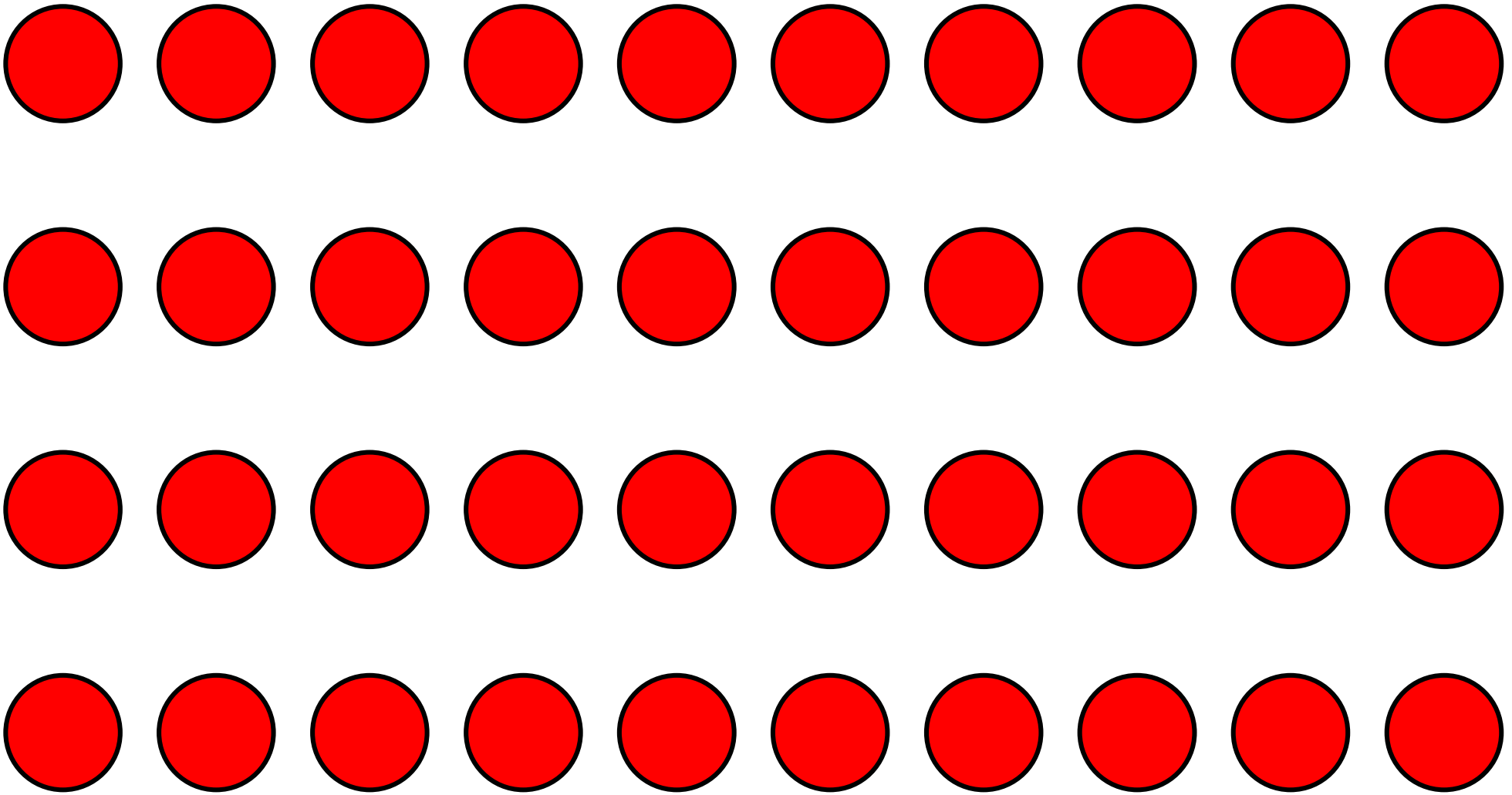




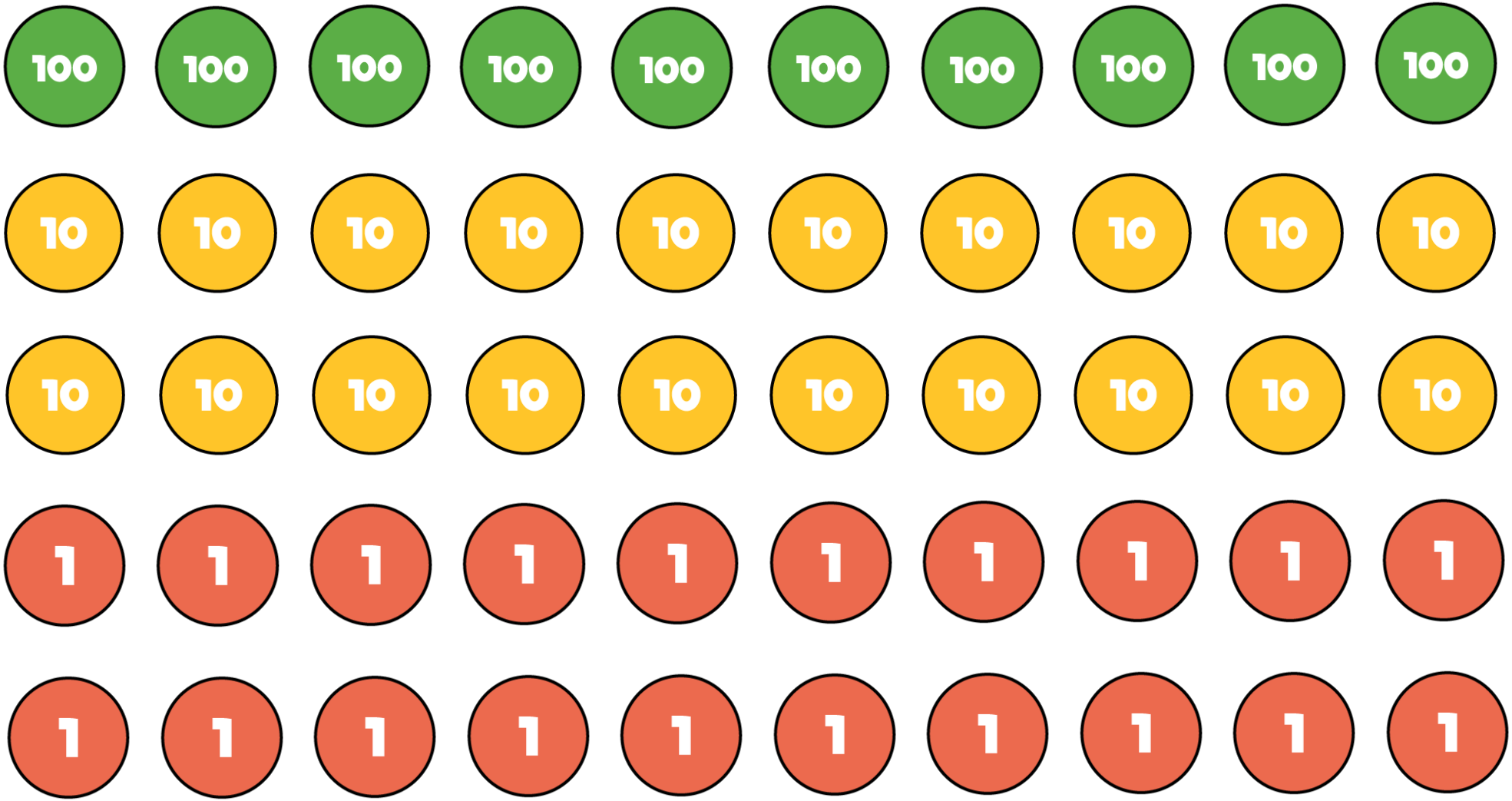




Printouts – Counters

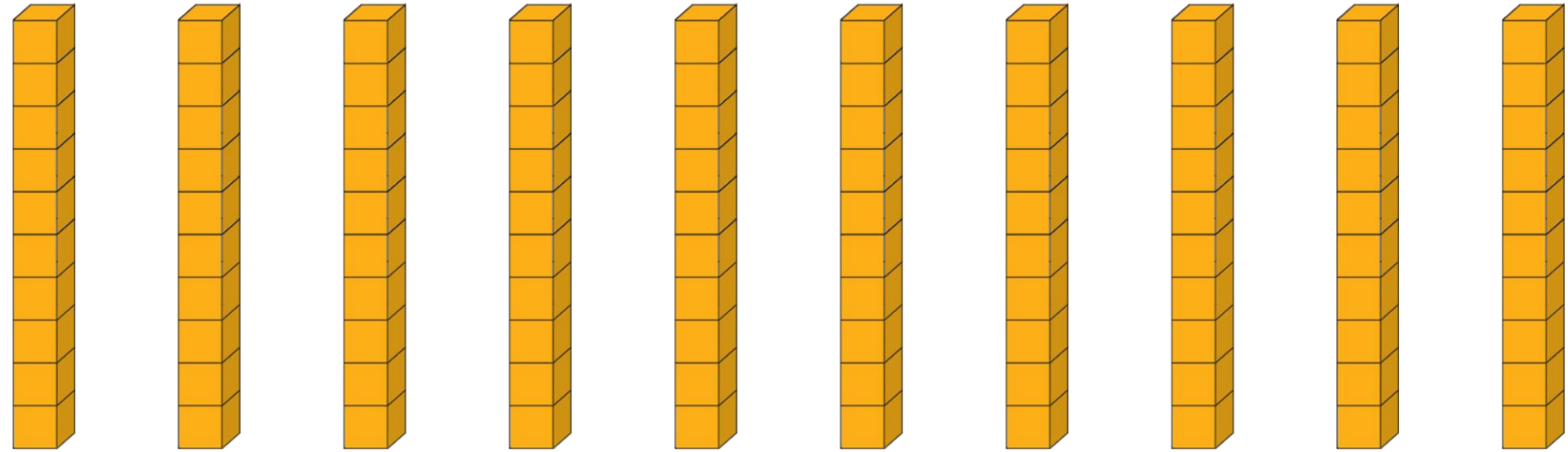


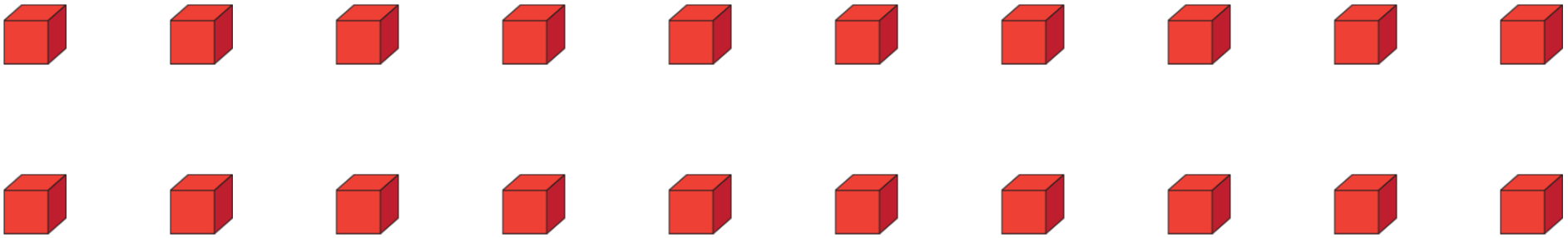
Printouts – Place Value Counters



White Rose Maths

Printouts – Base 10





Printouts – Place Value Chart

Tens	Ones

Printouts – Place Value Chart

Hundreds	Tens	Ones