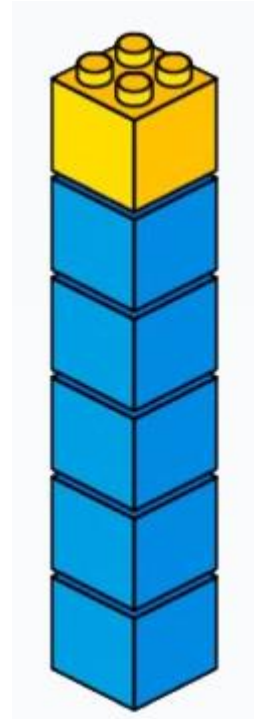




CPA

Coffee Break

Concrete –
Pictorial –
Abstract



$$\frac{2}{6} + \frac{3}{6} = \frac{\square}{6}$$

Why?

- ✦ Maths is an abstract subject and needs to be represented in a variety of ways for students to build and unpick concepts
- ✦ When we represent, we are trying to reveal the structure within a concept – how and why the maths works
- ✦ Findings by Bruner (1966): when pupils used the CPA approach, they were able to build on each stage towards a fuller understanding of the concepts being learnt and, as such, the information and knowledge were internalised to a greater degree.
- It's not just about the answer it's about understanding the concept so it can be later applied to other areas of life and mathematics.

CPA in action!

Y4 Lesson

Clip 7

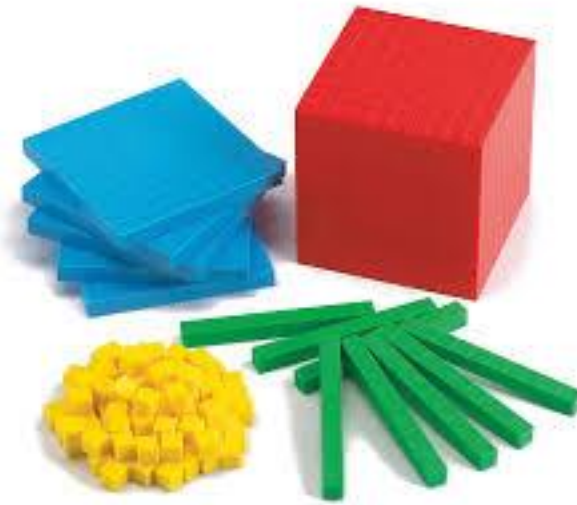
Y4 NCETM Curriculum Map Unit 12
"Division with remainders"

Outcome 2:
Pupils interpret a division story
when there is a remainder
and represent it with
an equation

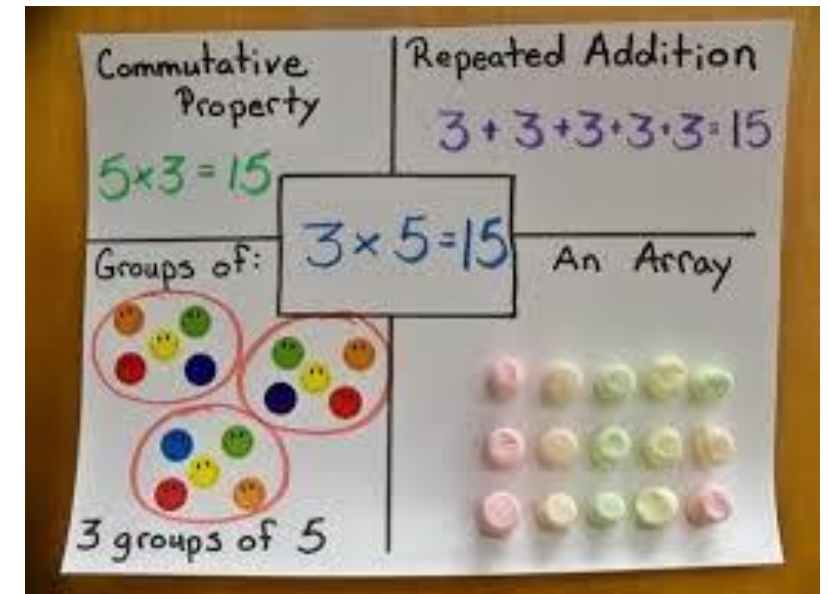
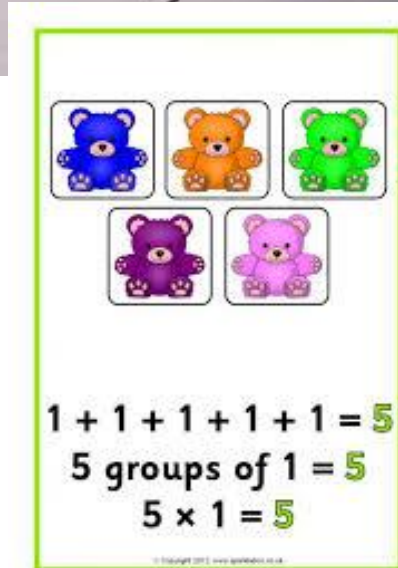
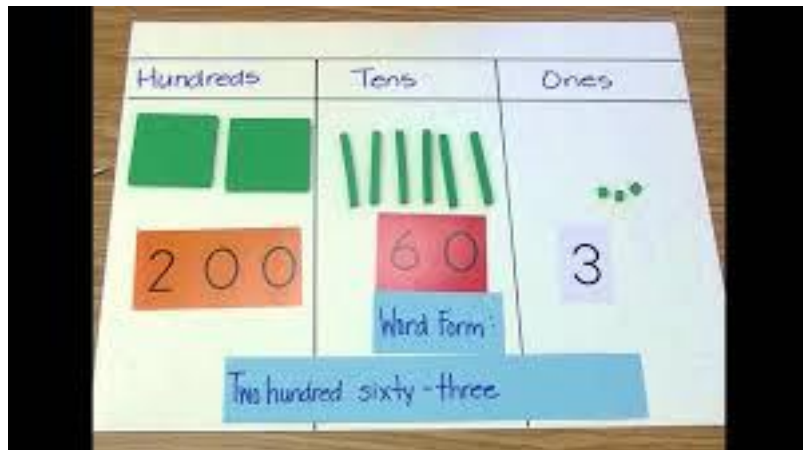
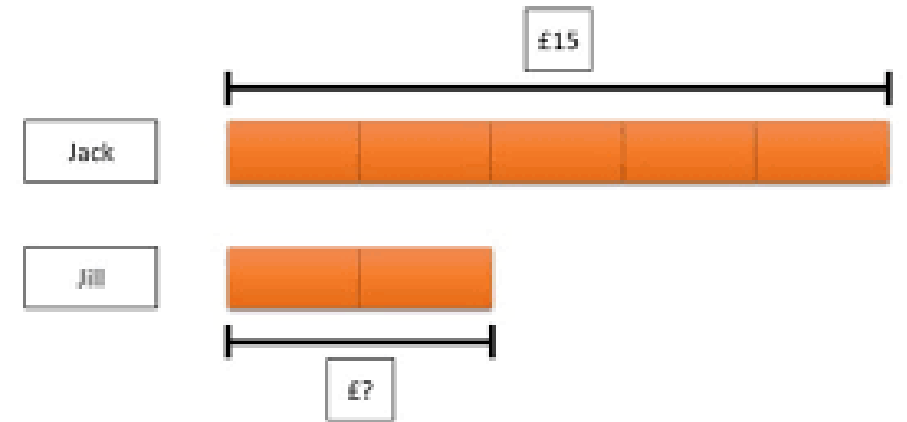
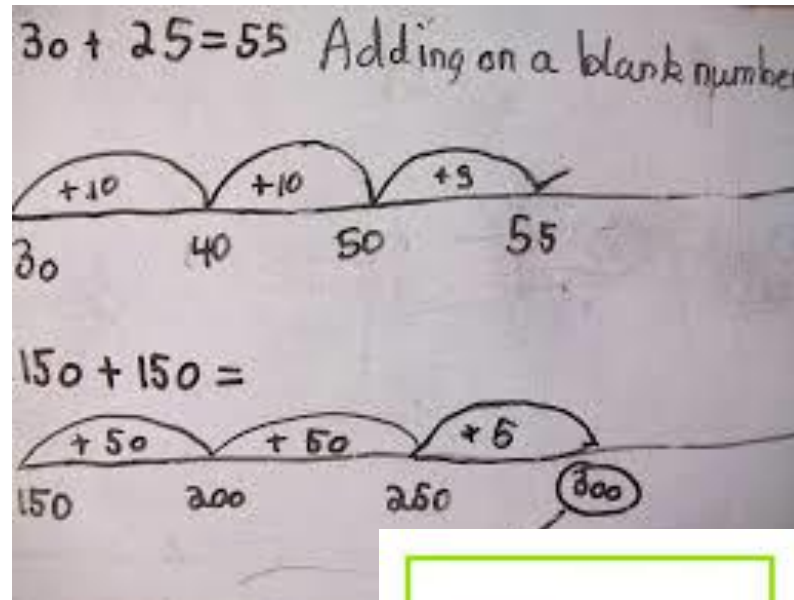
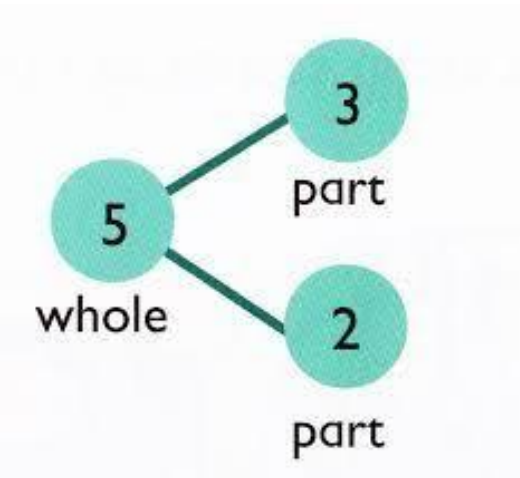


✦ <https://vimeo.com/751681262?fl=pl&fe=sh>

Concrete Manipulatives



Pictorial Representations



Abstract

$$\begin{array}{l} \textcircled{4} + 7 + \textcircled{6} = \boxed{10} + \boxed{7} \\ \quad \quad \quad \underbrace{\hspace{2cm}}_{10} \\ = \boxed{17} \end{array}$$

$$10 = 6 + 4$$

$$10 - 6 = 4$$

$$10 - 4 = 6$$

$$10 = 4 + 6$$

$$5 + 12 = 17$$

Place the larger number in your head and count on the smaller number to find your answer.

$$\begin{array}{r} 38 + 27 \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ 30 \quad 8 \quad 20 \quad 7 \end{array}$$

Divide 28 into 7 groups. How many are in each group?

How you can support at home

Encourage maths talk

Talking about maths helps children build reasoning skills.

- “How did you work that out?”
- “Can you show me another way?”
- “What happens if we add one more?”

Use maths in everyday life

Real-life maths helps children see why maths matters.

- Counting money when shopping
- Measuring ingredients when cooking
- Reading clocks and timetables
- Sharing food equally (fractions and division)

Focus on understanding, not speed

Children should be encouraged to show their thinking using objects or drawings rather than rushing to the answer.