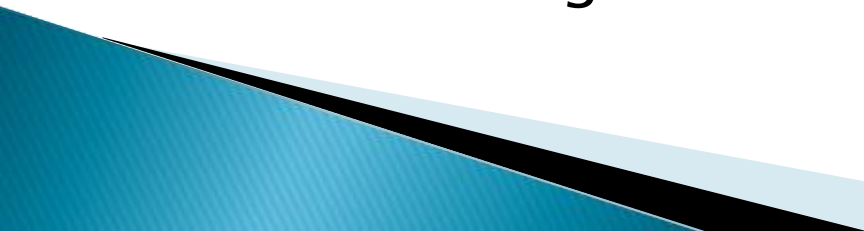


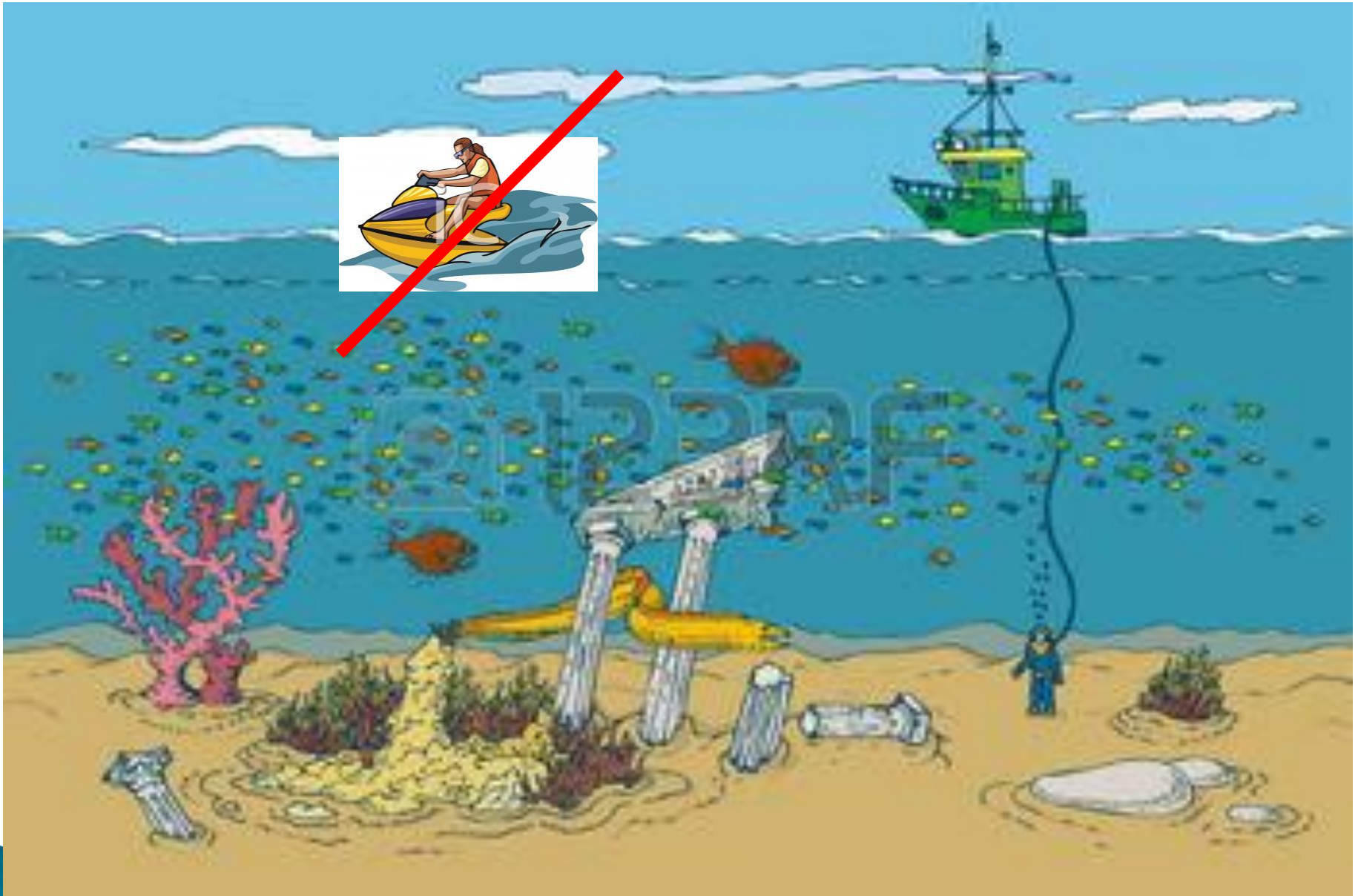
# Maths Mastery

The Acorn




# What is Mastery Mathematics?

- Less content – less to cover with the opportunity to go deeper;
  - More time spent on teaching and learning of skills – keep going until they get it!
  - Identifying different methods and strategies;
  - It's about understanding pupils understanding – understanding the stepping stones therefore teaching to misconceptions;
  - Using a CPA approach to ensure conceptual understanding.
- 



# What will mastery look like in The Acorn?

- Mixed ability grouping
  - Regular and effective high quality AfL
  - Lesson structure and delivery
  - Use of manipulatives
- 

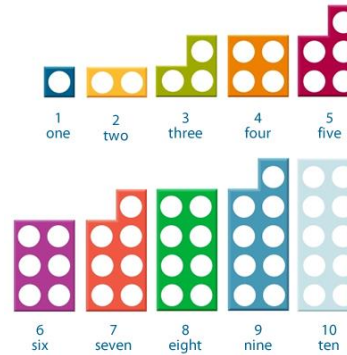
# CPA – Concrete, Pictorial, Abstract



shutterstock - 320182859

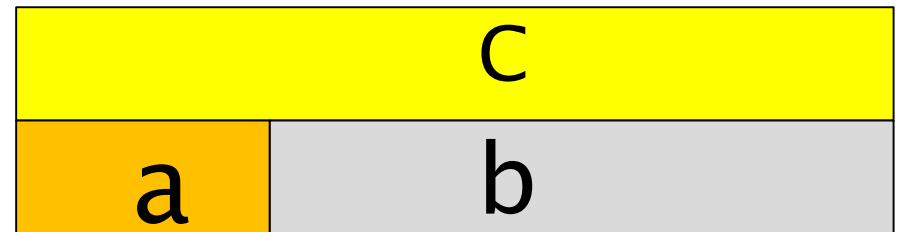
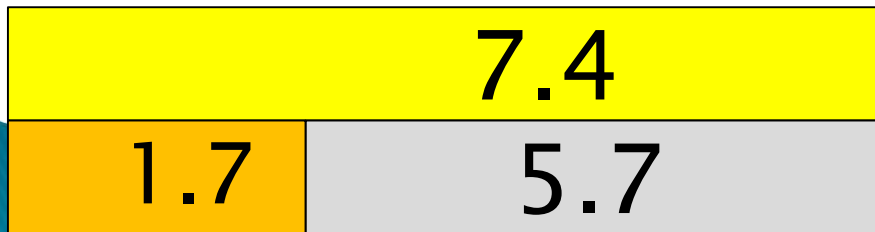
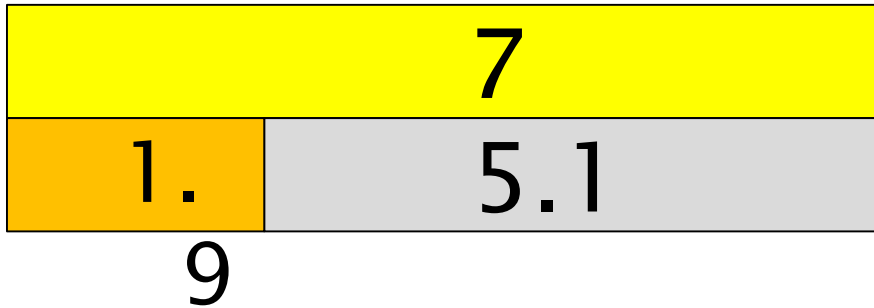
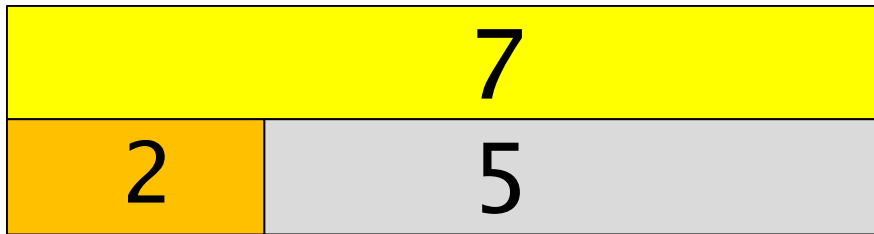
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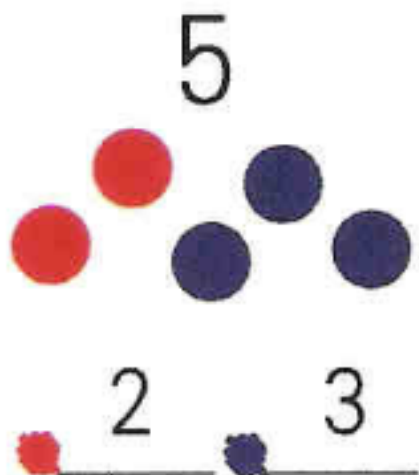
5

# Developing Depth/Simplicity/Clarity



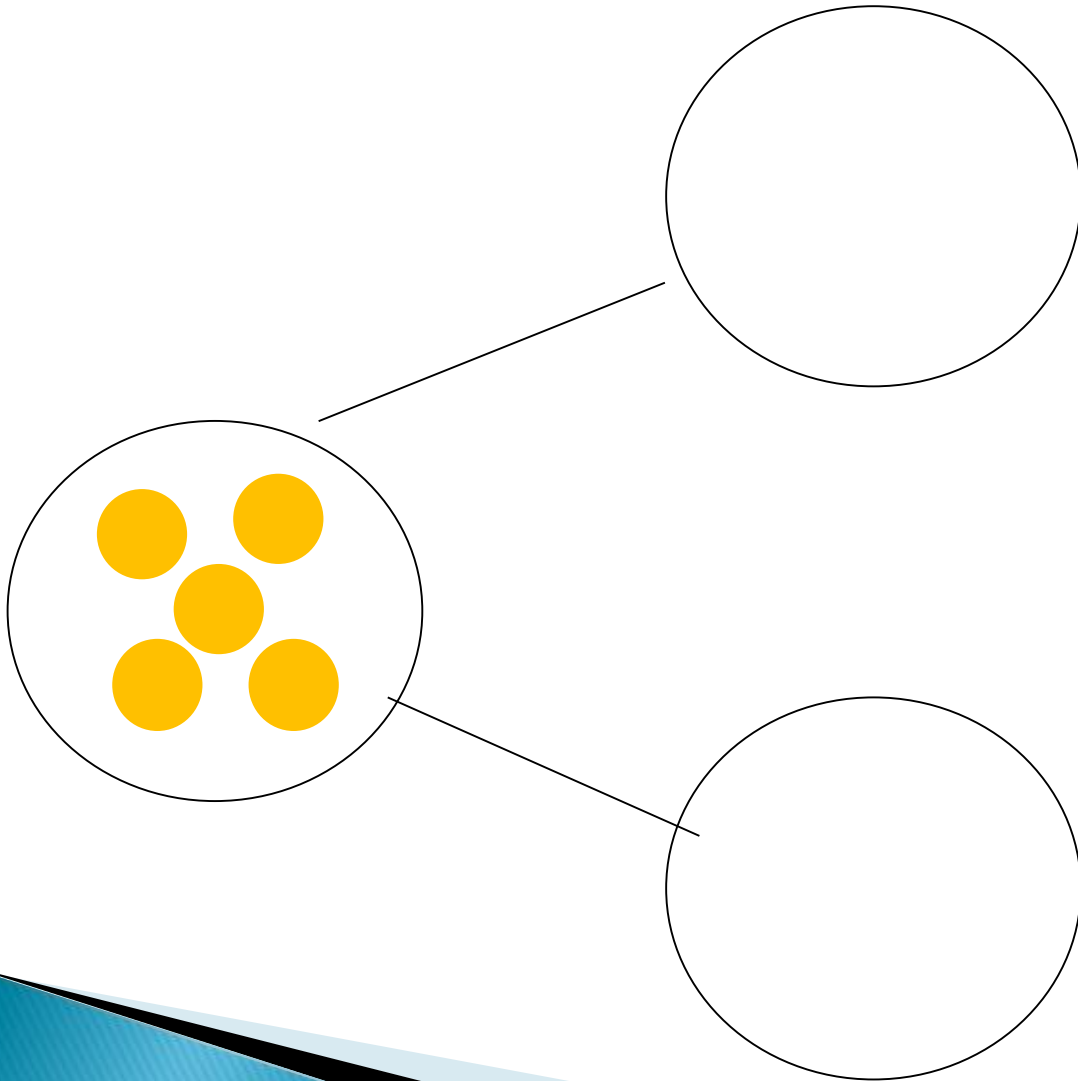
# Representing the Part – Part Whole Model

## Attention to Structure



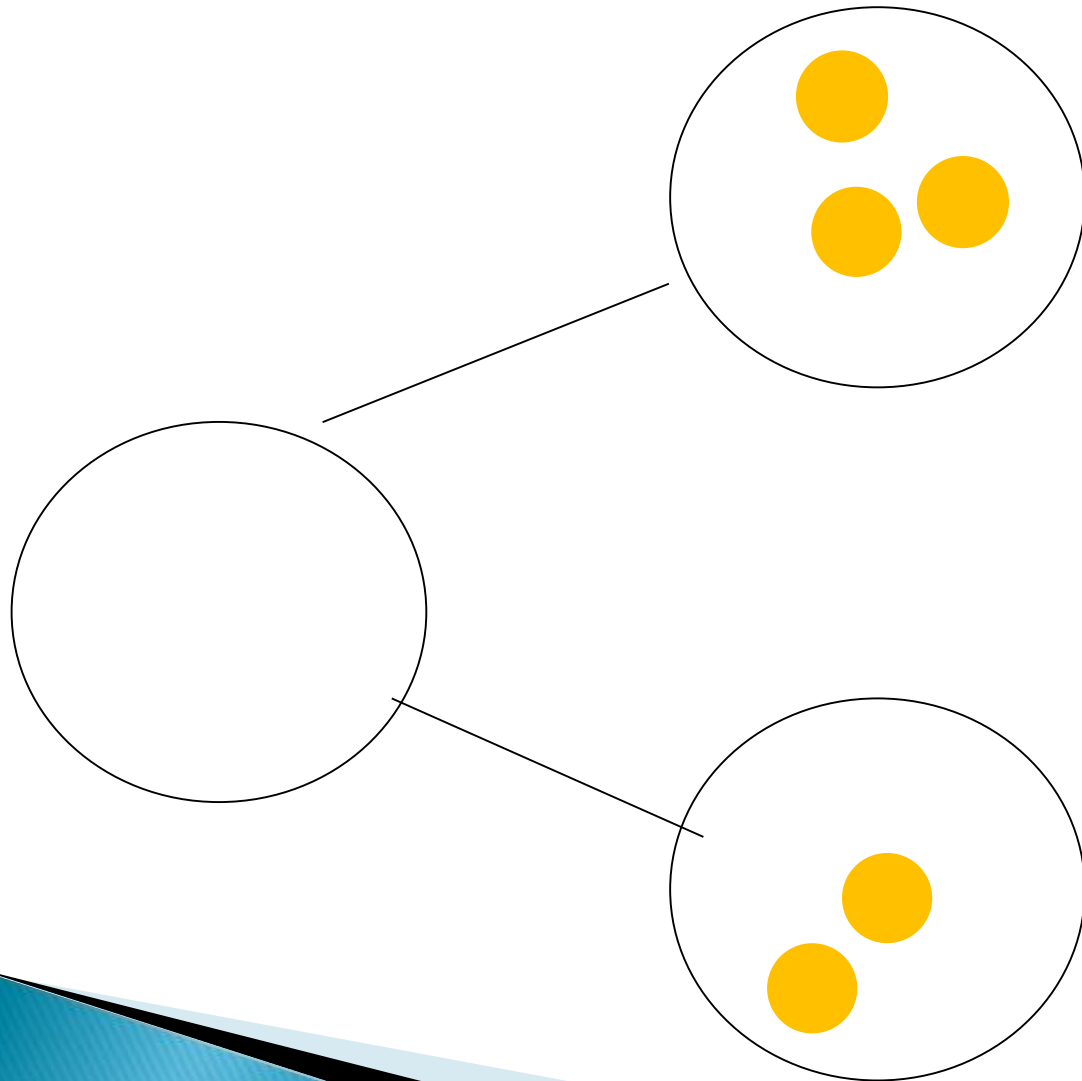
	Red	Blue
	●	●
● ● ● ● ●		
● ● ● ● ●		
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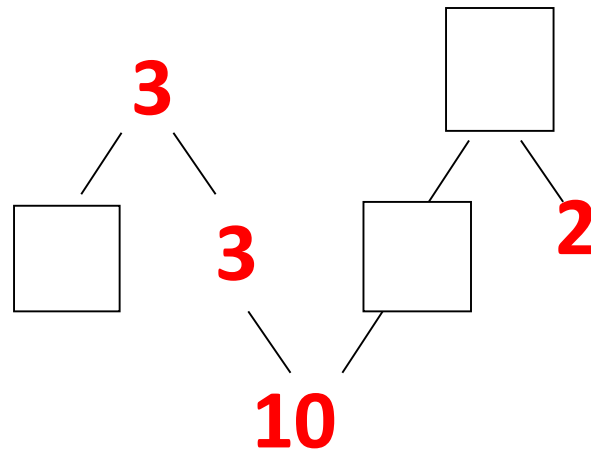
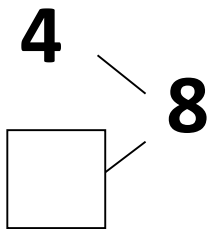
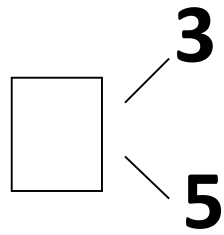
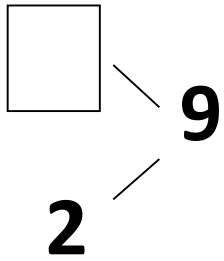
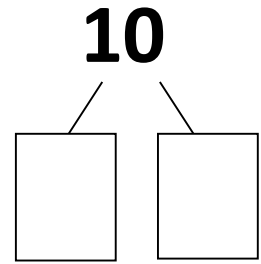
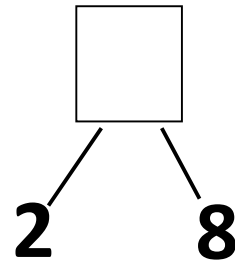
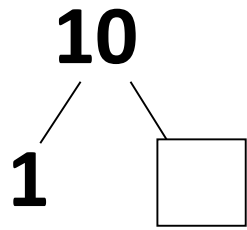
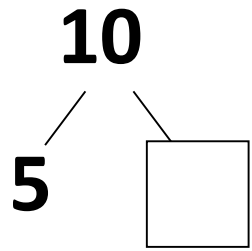
# Partitioning and Combining

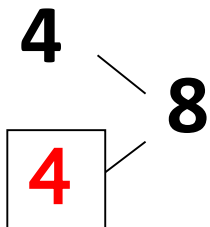
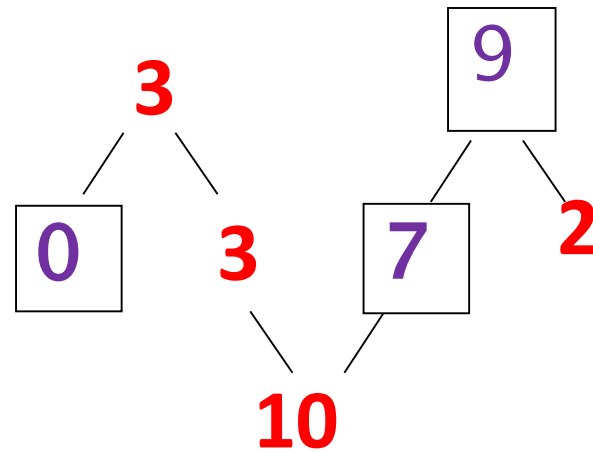
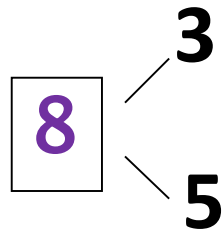
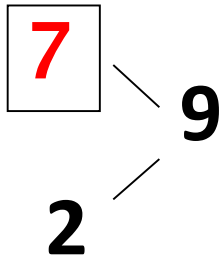
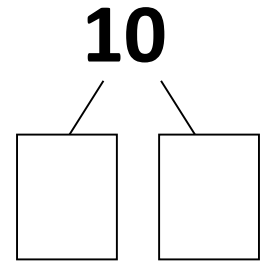
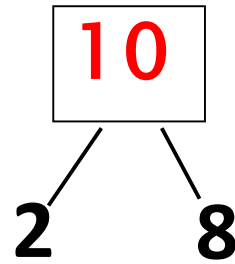
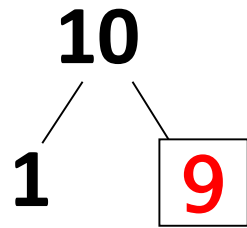
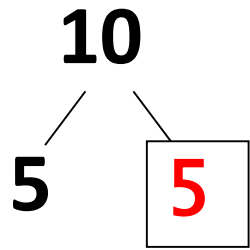




# Partitioning and Combining







# Variation leads to Intelligent Practice



National Centre  
for Excellence in the  
Teaching of Mathematics

$2 \times 3 =$

$6 \times 7 =$

$9 \times 8 =$

$2 \times 30 =$

$6 \times 70 =$

$9 \times 80 =$

$2 \times 300 =$

$6 \times 700 =$

$9 \times 800 =$

$20 \times 3 =$

$60 \times 7 =$

$90 \times 8 =$

$200 \times 3 =$

$600 \times 7 =$

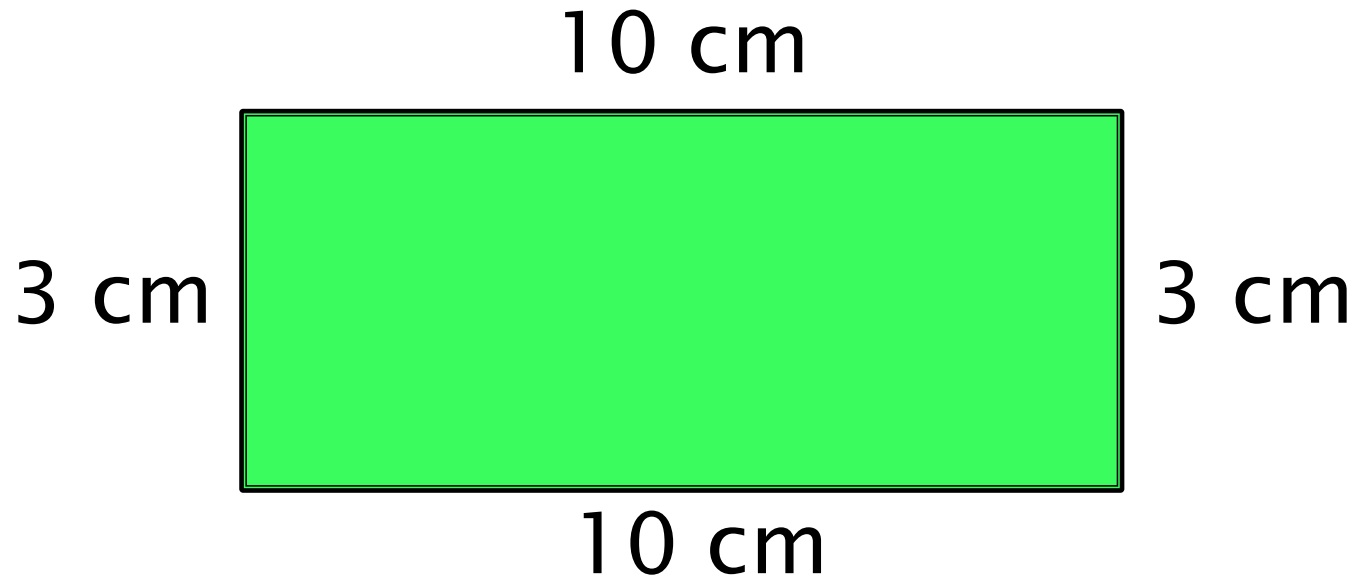
$900 \times 8 =$

Shanghai Practice Book

# Enriching Rather Than Accelerating: The development of 'rich' tasks.

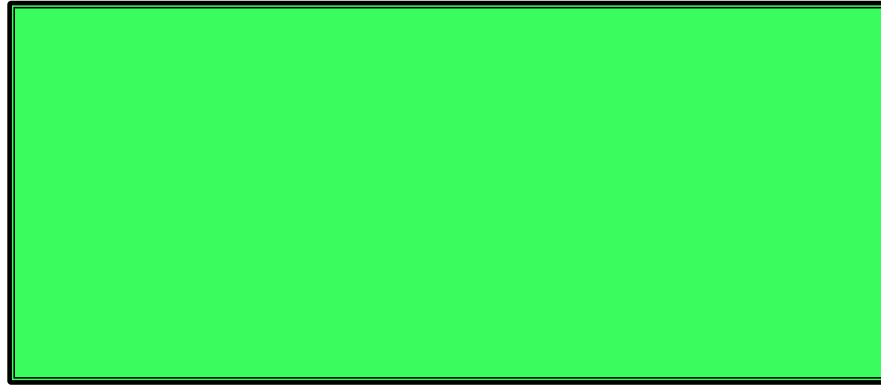
*'Pupils who grasp concepts rapidly should be challenged through rich and sophisticated problems before any acceleration through new content. Those pupils who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.'*

# Task 1

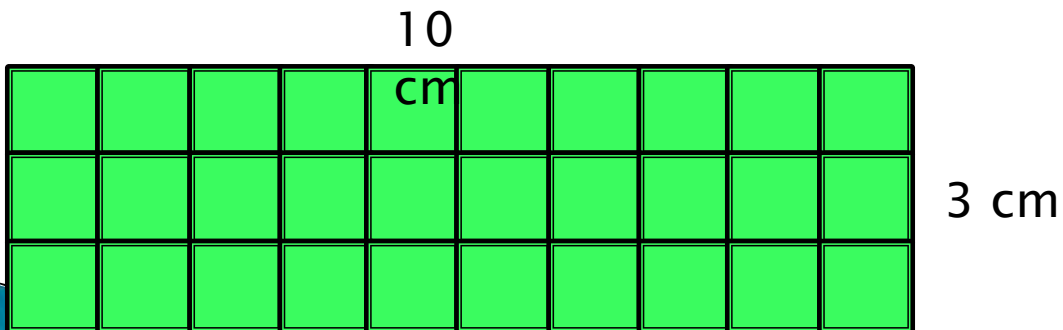
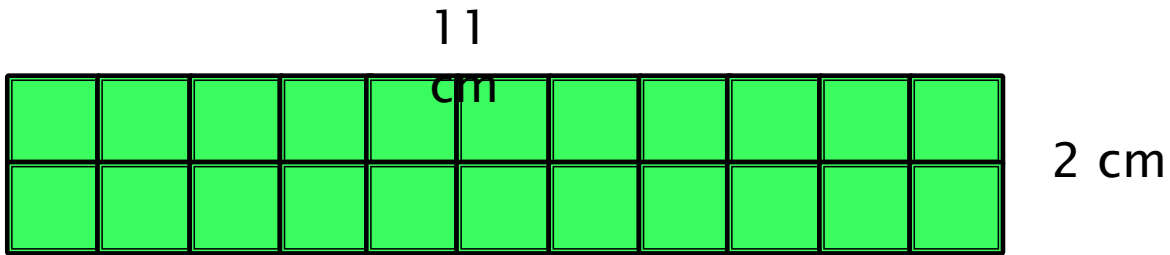
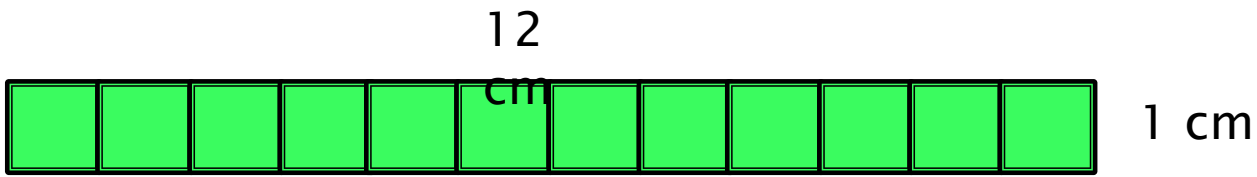


What is the perimeter of this shape?

## Task 2

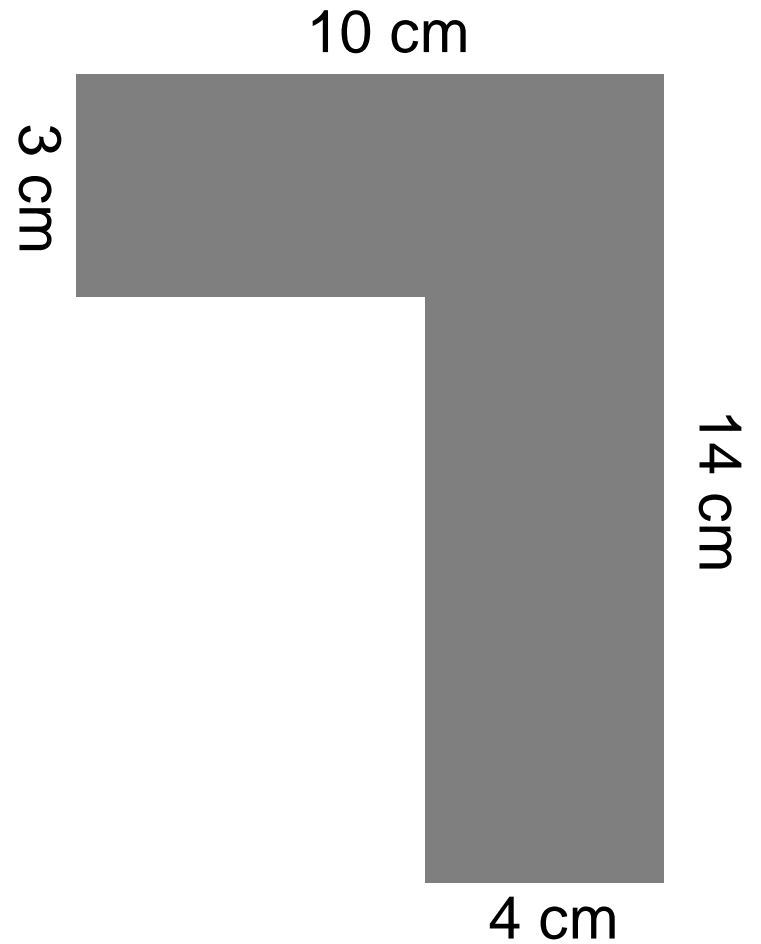
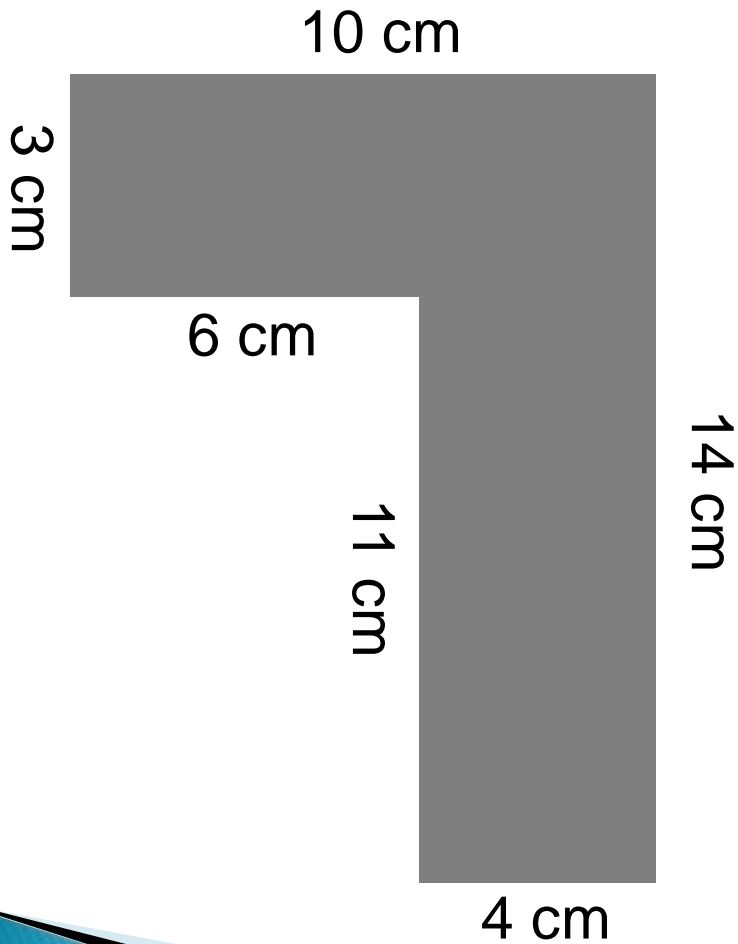


Draw three rectangles, each with a perimeter of 26cm.





Find the perimeter.



Fill in the missing boxes

$$\begin{array}{r} 3 \quad 8 \quad 5 \\ + \quad 4 \quad 2 \quad 7 \\ \hline \square \quad \square \quad \square \\ \hline \hline \end{array}$$

$$\begin{array}{r} 5 \quad \square \quad 4 \\ + \quad 2 \quad 5 \quad \square \\ \hline \square \quad 3 \quad 2 \\ \hline \hline \end{array}$$

**A pupil really understands a mathematical concept, idea or technique if he or she can:**

- describe it in his or her own words;
- explain it to someone else;
- represent it in a variety of ways (e.g. using concrete materials, pictures and symbols – the CPA approach);
- make up his or her own examples (and non-examples) of it;
- see connections between it and other facts or ideas;
- recognise it in new situations and contexts;
- make use of it in various ways, including in new situations.

(NCETM Assessment of mastery documentation).

