

What's the same
What's different?



The numbers inside

KS 1 Maths for parents

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KS 1 Maths

Aims of the meeting

- Support your understanding of the Maths Curriculum
- Explore methodologies
- Enable you to support your child more effectively at home
- Gain some understanding of assessment requirements

Aims of the National Curriculum

- **Fluency**
- **Reasoning**
- **Problem Solving**

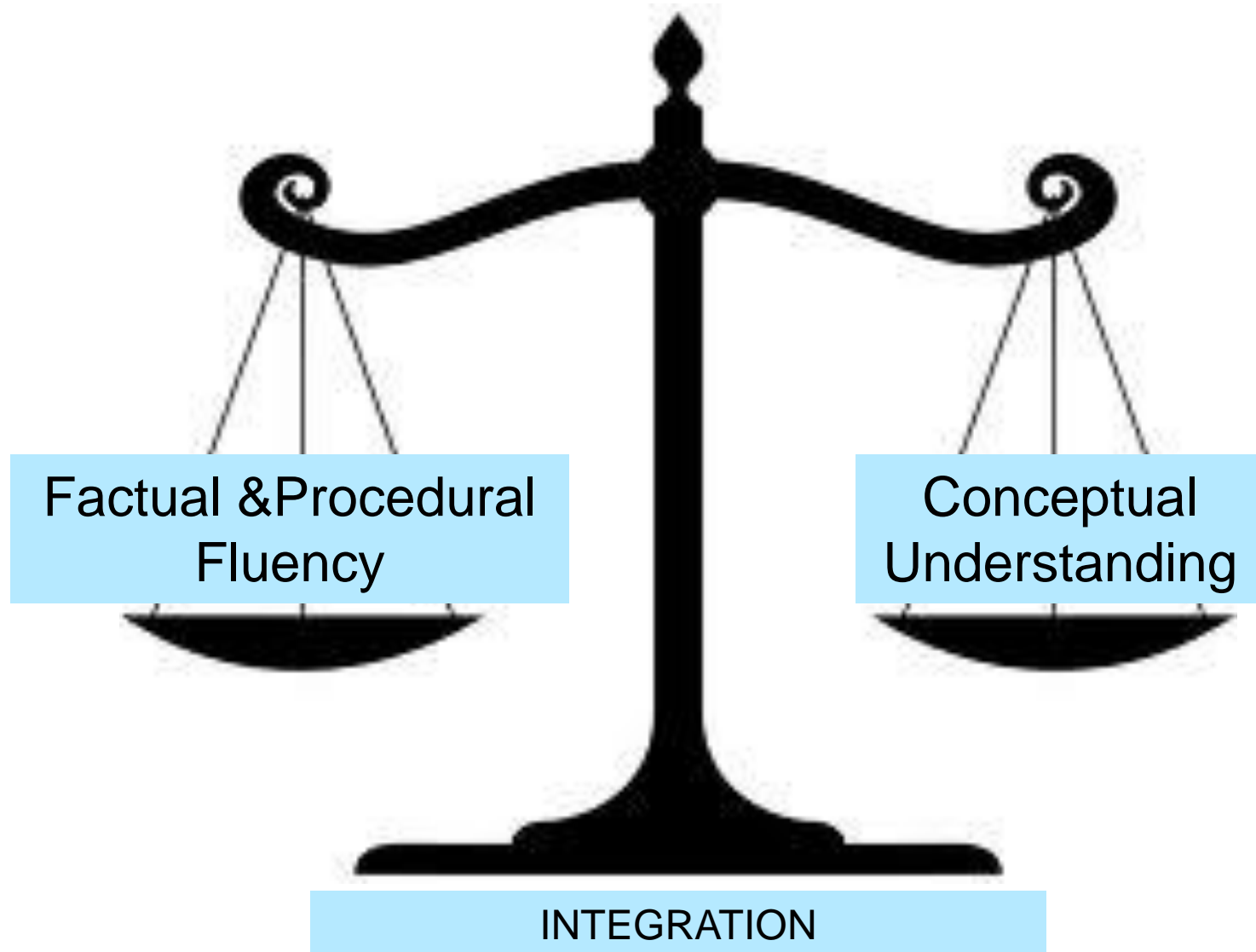
To be competent children need to develop three forms of knowledge

Factual *I know that*

Procedural *I know how*

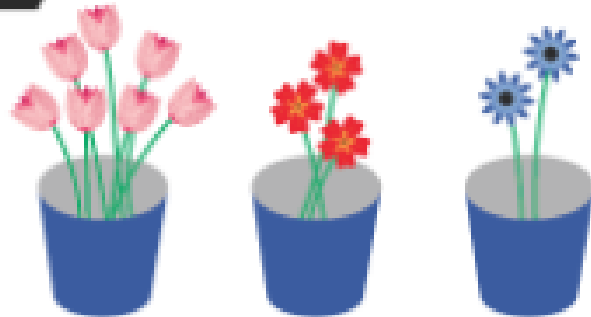
Conceptual *I know why*

The Curriculum



Addition of Three Numbers

In Focus



Can you add to find out how many flowers there are in total?

Guided Practice

1 Make 10 and add.

$$\begin{aligned} \text{(a)} \quad 2 + 8 + 4 &= \square + \square \\ &= \square \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad 3 + 9 + 1 &= \square + \square \\ &= \square \end{aligned}$$

2 Add.

$$\text{(a)} \quad 6 + 7 + 4 = \square$$

$$\text{(b)} \quad 9 + 0 + 4 = \square$$

$$\text{(c)} \quad 8 + 5 + 9 = \square$$

$$\text{(d)} \quad 7 + 9 + 6 = \square$$

Struggling, Average and Advanced Learners

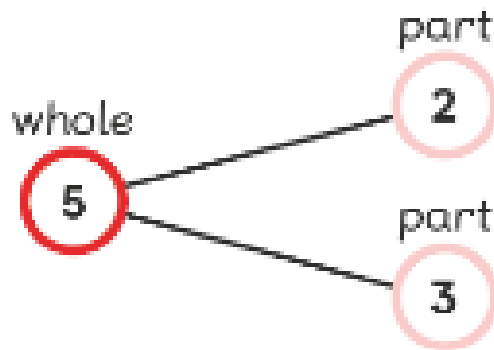
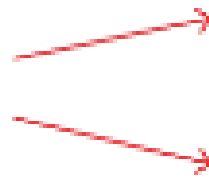
Most days we solve problems in two different ways. On clever days we find three ways.

Struggling Learners may need support to find the second way.

Advanced Learners are continually encouraged to challenge themselves to find novel ways for themselves.

Concrete Pictorial Abstract

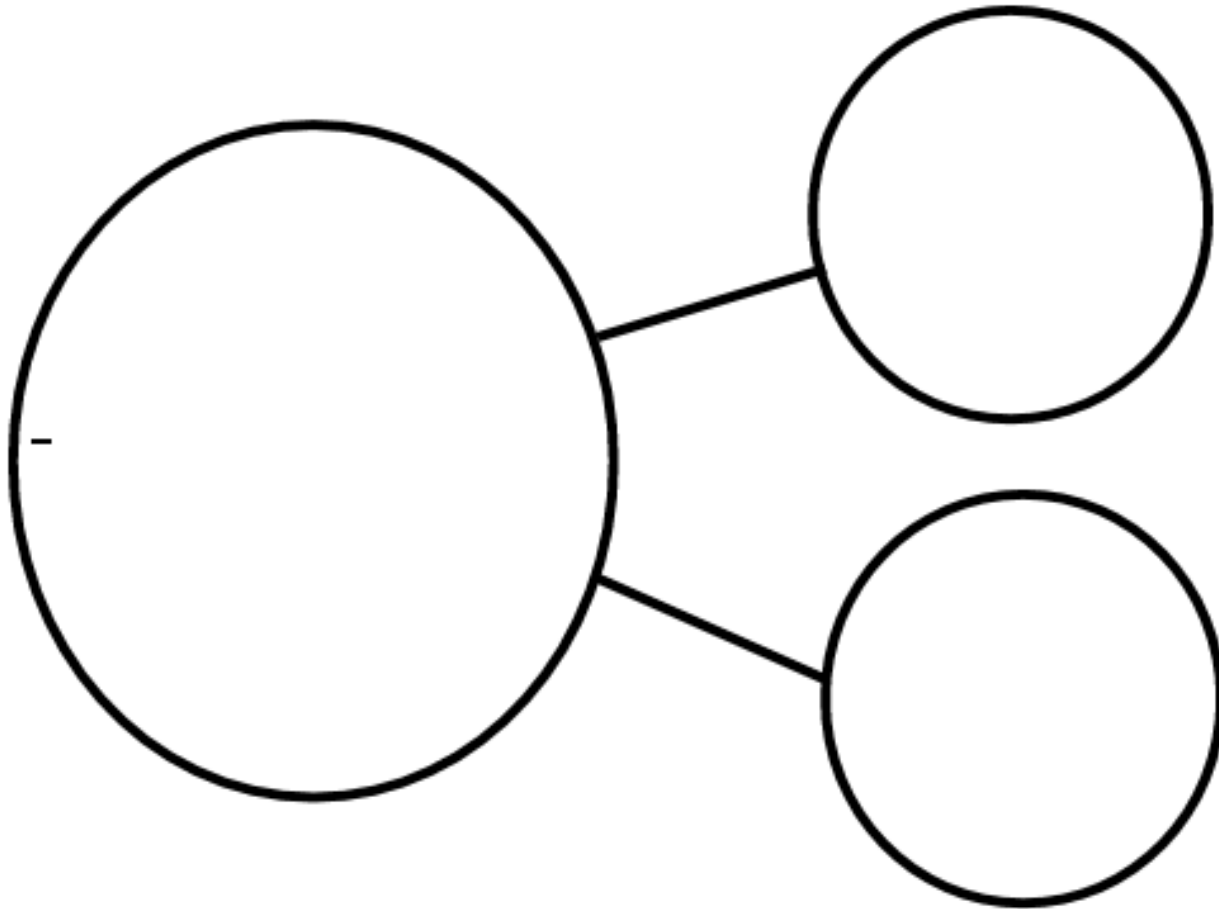
Put 5 cupcakes on two plates.



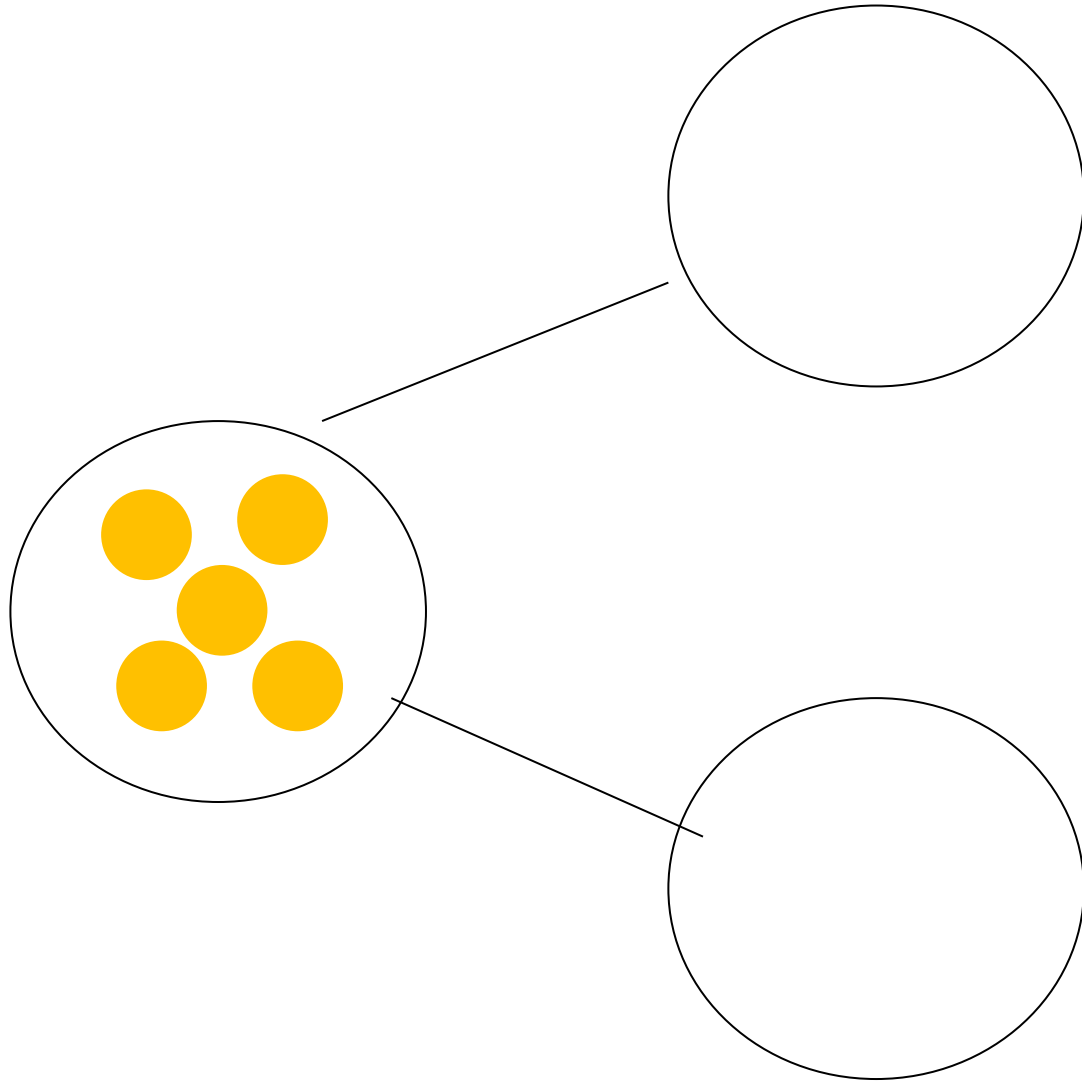
2 and 3
make 5.

This is a number bond.

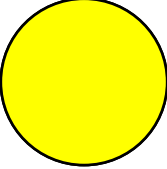
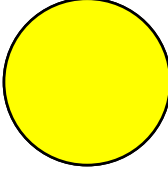
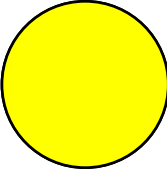
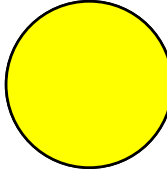
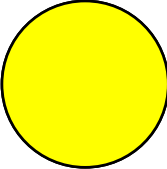
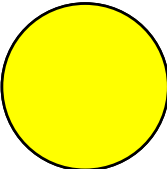
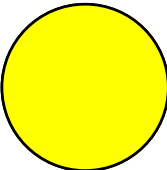
Part Part Whole Model



Partitioning



Make 7

$$6 + 1 = 7$$

$$5 + 2 = 7$$

$$4 + 3 = 7$$

$$3 + 4 = 7$$

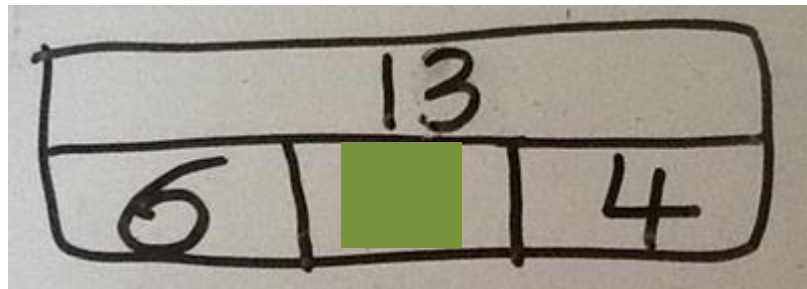
$$2 + 5 = 7$$

$$1 + 6 = 7$$

$$0 + 7 = 7$$

Amy

$$6 + \square + 4 = 13$$



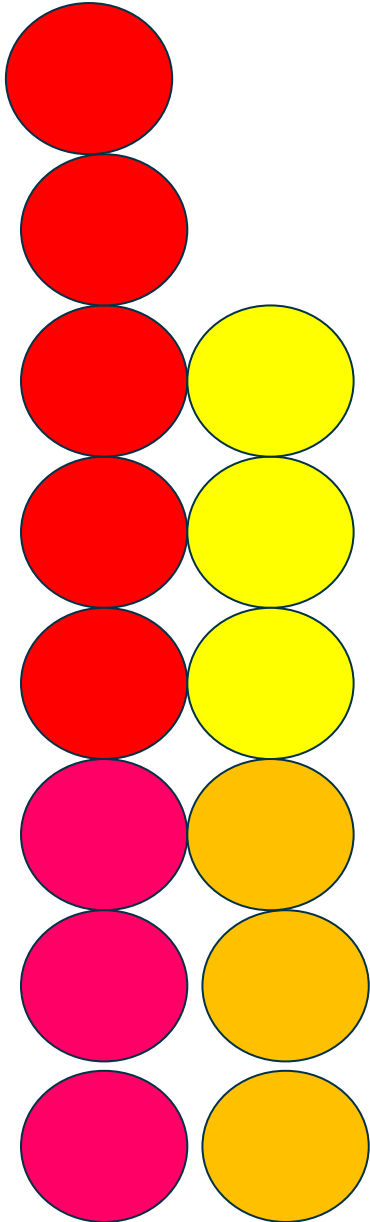
$$6 + \square 3 + 4 = 13$$

Solve the following

$$\square + 17 = 15 + 24$$

$$99 - \square = 90 - 59$$

Representing Mathematical Relationships



Same Difference

$$5 - 3 = 2$$

$$6 - 4 = 2$$

$$7 - 5 = 2$$

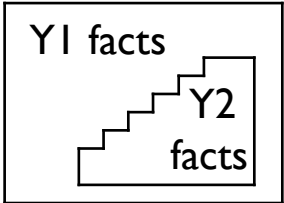
$$8 - 6 = 2$$

Adding 1 and 2

Bonds to 10

Adding 10

Bridging/
compensating



Doubles

Adding 0

Near doubles

+	0	1	2	3	4	5	6	7	8	9	10
0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10
1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	1+10
2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8	2+9	2+10
3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7	3+8	3+9	3+10
4	4+0	4+1	4+2	4+3	4+4	4+5	4+6	4+7	4+8	4+9	4+10
5	5+0	5+1	5+2	5+3	5+4	5+5	5+6	5+7	5+8	5+9	5+10
6	6+0	6+1	6+2	6+3	6+4	6+5	6+6	6+7	6+8	6+9	6+10
7	7+0	7+1	7+2	7+3	7+4	7+5	7+6	7+7	7+8	7+9	7+10
8	8+0	8+1	8+2	8+3	8+4	8+5	8+6	8+7	8+8	8+9	8+10
9	9+0	9+1	9+2	9+3	9+4	9+5	9+6	9+7	9+8	9+9	9+10
10	10+0	10+1	10+2	10+3	10+4	10+5	10+6	10+7	10+8	10+9	10+10

Learning Addition & Subtraction Facts and Times Tables

Times tables

Step 1.

Count all

Skip count alongside objects

Find meaning e.g. 6×4 draw 6 plates with 4 cakes on each

Step 2.

Explore. Derive answers using known facts e.g. 6×4 is $5 \times 4 + 4$ more or I know 3×4 , I need to double it

Step 3.

Mastered. I know all the facts. Can derive facts and apply facts in a range of situations.

Times table activities

Place value fact
 $30 \times 4 = 120$

Fact for Free
 $4 \times 3 = 12$

$$3 \times 4 = 12$$

Nearby Fact
 $4 \times 4 = 16$

Related fact
 $2 \times 4 + 4 = 12$

Sharing or Grouping

- **What does each mean?**
- **Model each with some counters for $8 \div 2$**
- **What's the same? What's different?**

End of KS1 tests

One of the key observations emerging from examination of teaching practices in Shanghai is that there is a focus on teaching relational understanding, ‘knowing both what to do and why’ (Skemp 1976).

This leads to an expectation that, when working on mathematics, children will ‘notice’ things and make decisions based on what they notice.

End of KS1 tests

Looking at the test papers for the end of both KS1 and KS2, it is clear that children who look to notice things and use what they notice, and what they know, to make decisions will have an advantage over children with an instrumental understanding who have memorised what to do and follow this route regardless of the numbers and the context involved.

KS 1 tests: arithmetic

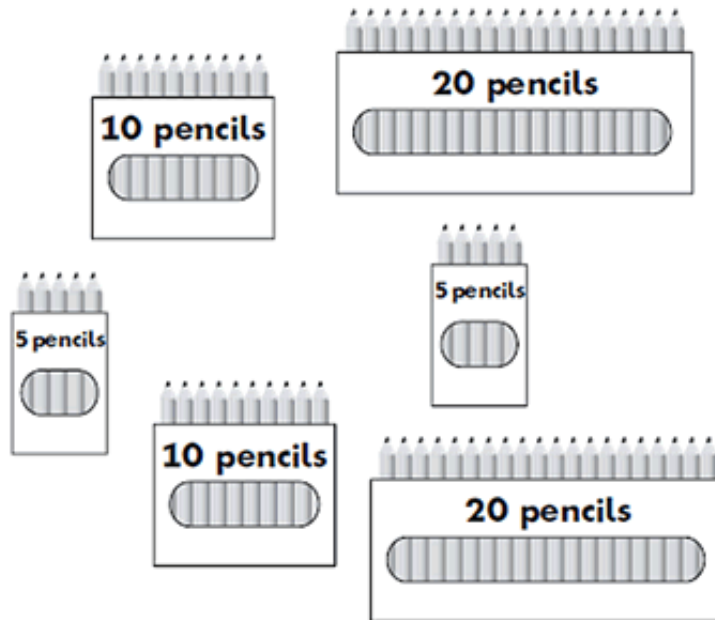
$$4 + 5 + 6 = \boxed{}$$

KS 1 tests: arithmetic

$$56 - \boxed{} = 51$$

KS1 tests: reasoning

18



Kemi and Ben share these pencils equally.

How many pencils do they each get?

Helping at Home

- Talk about maths. Make maths real.
- Play counting games. Do puzzles together.
- Support learning of number facts
- Allow your child to do their homework unaided
- Ask your child to explain their thinking. Ask if they could have solved the problem in a different way