

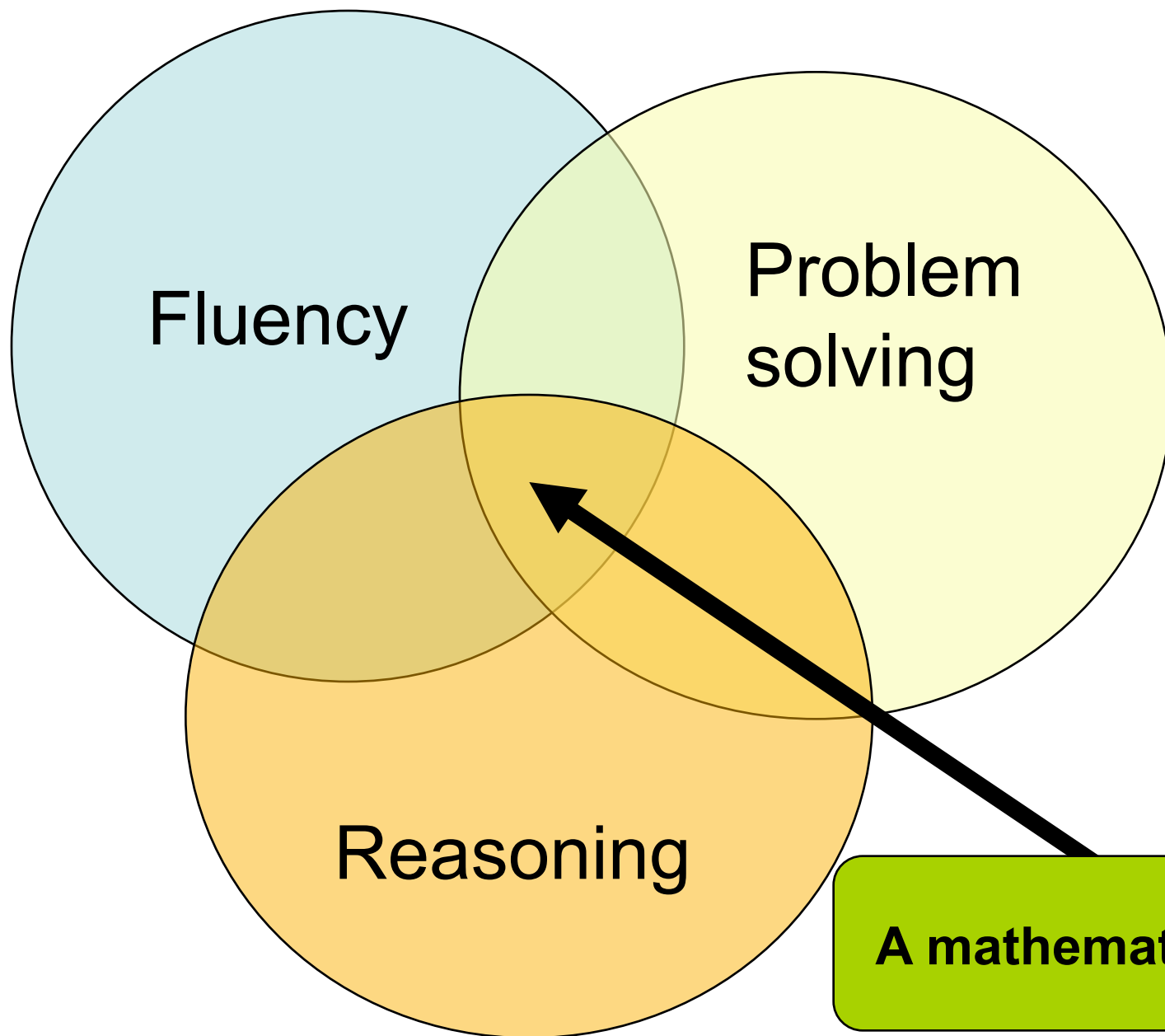
# Helping your child to meet the new standards in maths

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Freelance Maths Consultant



- Maths is about spotting patterns, making links and understanding how pieces of knowledge fit together.
- NOT purely memorising facts and procedures by rote.



**A mathematician?**

# Number Sense!

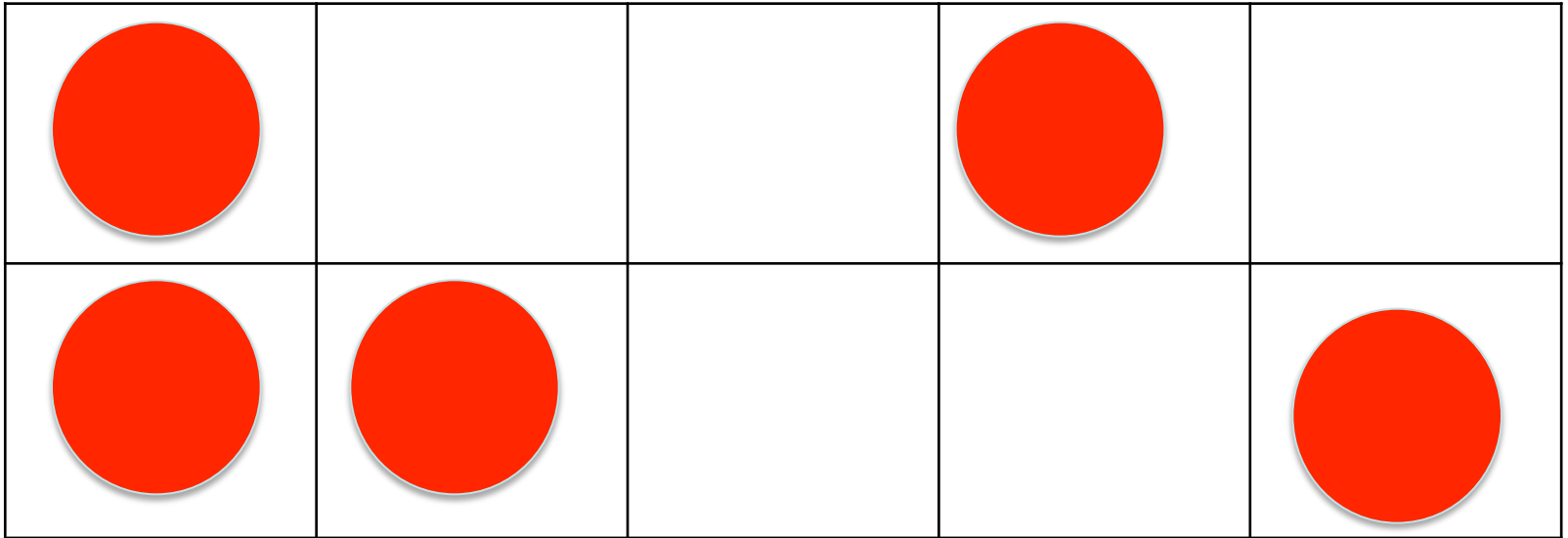
Children need to understand our number system, starting with counting numbers, building an understanding of how our numbers work and fit together. This includes exploring place value and comparing and ordering numbers then applying this understanding in different contexts.





# Using ten frames

Ten frames- making 5 in different ways



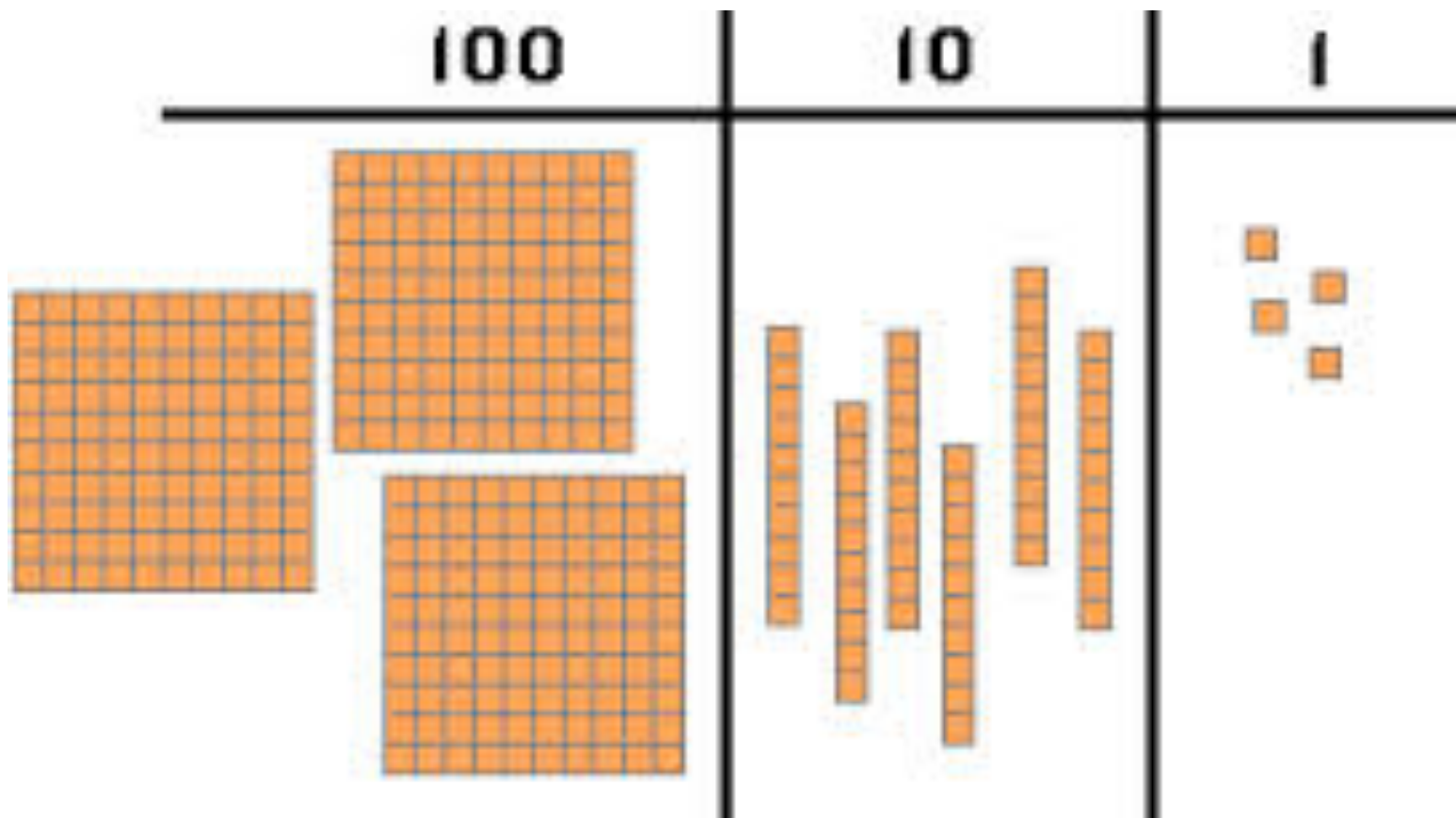


# Place Value

- Place value is at the heart of the number system. All digits have a value and a secure understanding of this will enable children to use and understand different calculation methods.









# Column methods

- Children with a secure understanding of place value will better understand the column method for addition and subtraction.

$$\begin{array}{r} 342 \\ + 77 \\ \hline 419 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 8948 \\ - 263 \\ \hline 685 \end{array}$$

- Understanding place value will help children see the relationship between the columns.

**Tell me how you have worked it out**

**Prove it!**

**Can you work it out another way?**

$$47 - 28$$



# Recalling facts

- It is important that children recognise number bonds, different pairs of numbers with the same total.

10

$7 + 3$



$6 + 4$



8

$6 + 2$

$5 + 3$



6

$3 + 3$

$5 + 4$

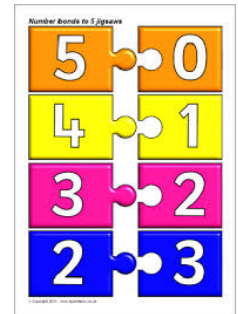
$6 + 3$

9

$3 + 2$

5

$1 + 4$



$6 + 1$

7

$3 + 4$





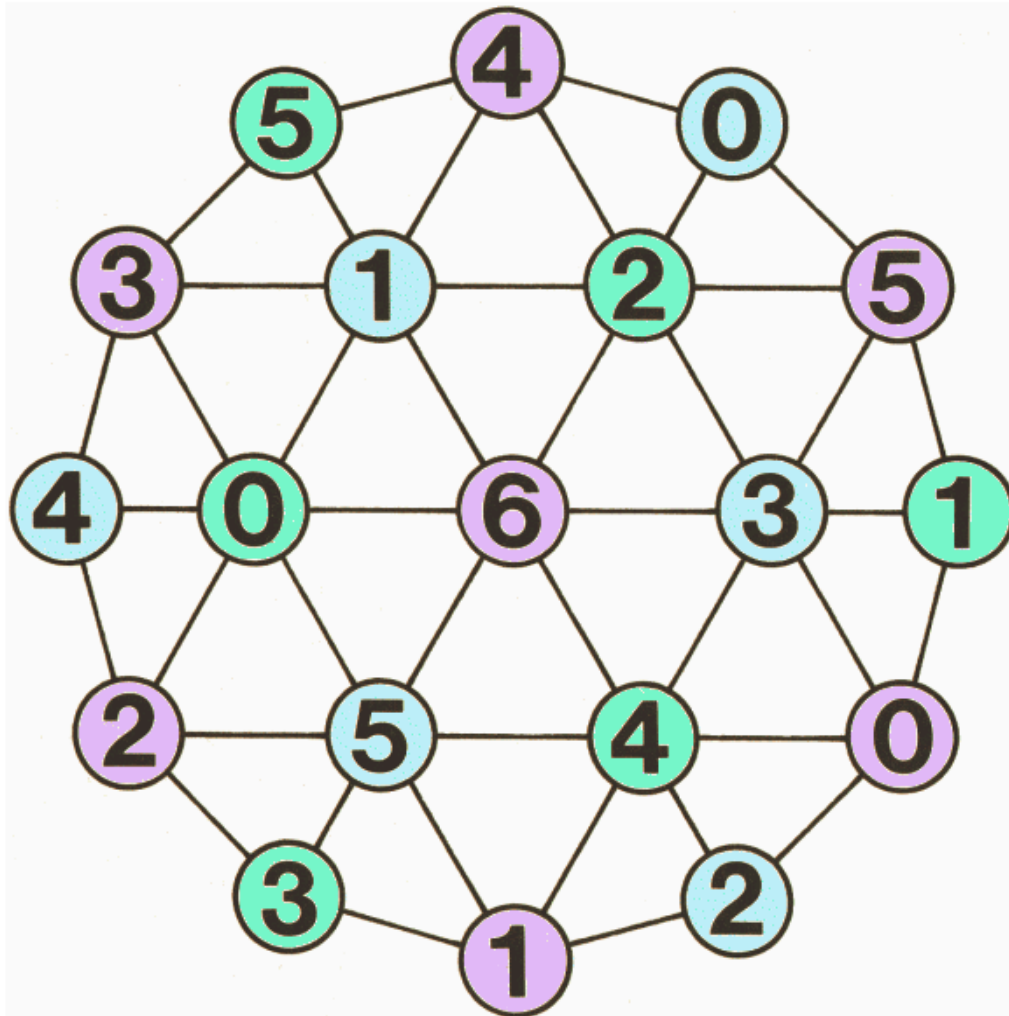
# Ten Nice Things

- A game for two players. Each player chooses ten items each. They take it in turns to throw a dice and choose that number of items from their opponent's set. First to get all items wins.

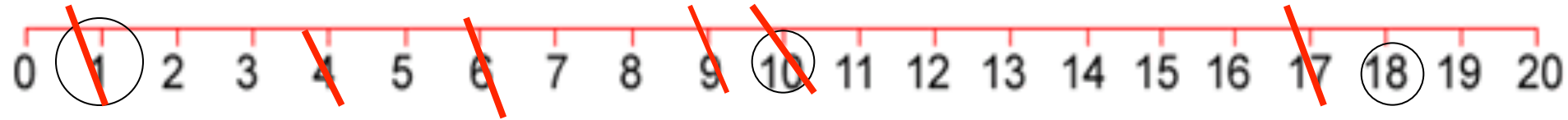


# Totality

[www.nrich.maths.org](http://www.nrich.maths.org)



# Strike It Out



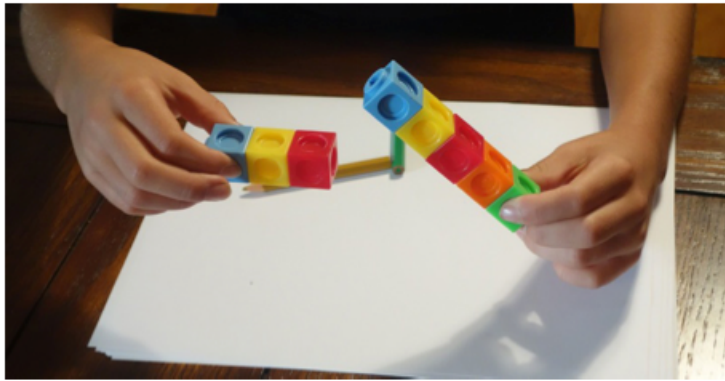
$$6 + 4 = 10$$

10 take away 9 makes 1

1 add 17 is 18

18.....





**Snap It!**



**Board Games**

**Add Snap**



# Fluency

## Using a pack of cards



Remove the face cards

- Sort into pairs which equal 10
- Shuffle the pack and place face down. Play like snap, turning over a card each and the first to call the total gets the cards.
- Other versions: first to call the difference, first to multiply the two numbers.
- Set up challenges - only the child calls the answer and he/she tries to beat their personal time.
- Beat the clock – focus on a multiplication table e.g.  $\times 7$ . Use two suits. Against the clock turn over a card and multiply by 7. Try to beat previous times.

# Practice to deepen knowledge.

## Using a pack of cards



Use the digits 7, 5, 3, 4, 1. Choose two digits.

- What's the largest **total** you can make?
- What's the smallest?
- What totals between these can you find. Put the totals in order.
- What's the largest **even** total you can make? What's the smallest?
- What's the largest **odd** total you can make? What's the smallest?



Use the digits 7 5 3 4 1 to make a **3-digit number** and a **2-digit number**.

- What's the largest total you can make? What's the smallest? What totals between these can you find. Put the totals in order.
- What's the largest **even** total you can make? What's the smallest?
- What's the largest **odd** total you can make? What's the smallest?
- A total nearest to 500? 300? Etc.
- Arrange 5 digits into a 3-digit and 2-digit number which sum to a given total.

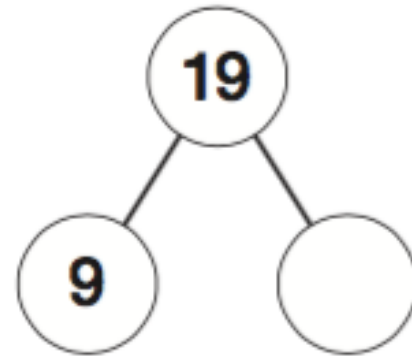
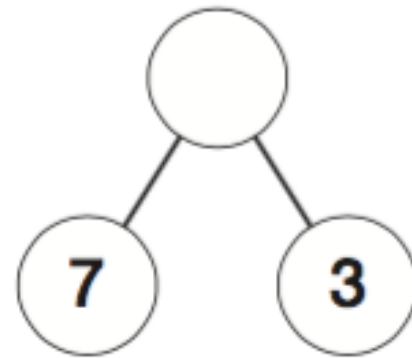
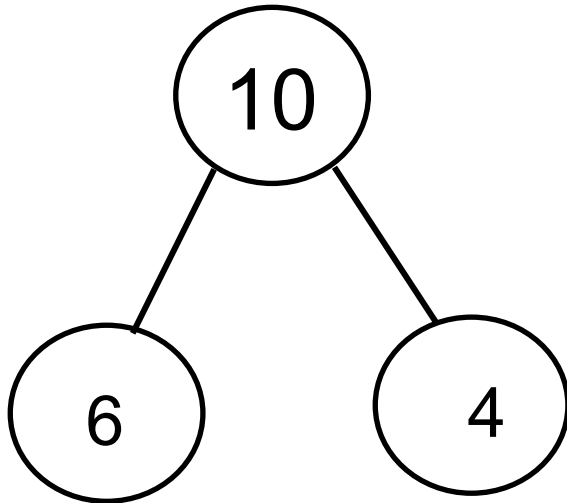


## Countdown

[http://www.topmarks.co.uk/  
Flash.aspx?f=countdowntimerv3](http://www.topmarks.co.uk/Flash.aspx?f=countdowntimerv3)

# New language

Part – part – whole model





$$+ 3.7 = 7.0$$

$$2.8 +$$



$$= 9.5$$



$$- 3.8 = 2.5$$

$$10.3 -$$



$$= 6.5$$

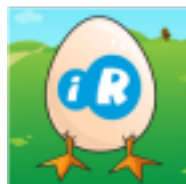
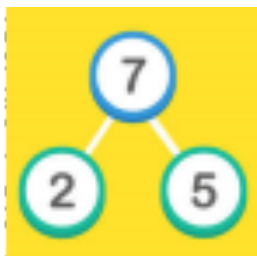
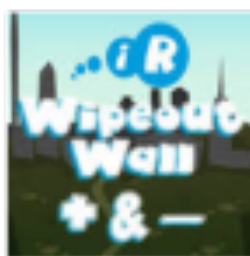
# Times Tables

- Y2 – 10, 5 and 2
- Y3 – 4, 8 and 3
- Y4 – up to 12 x 12

|     |    |    |    |    |    |    |    |    |
|-----|----|----|----|----|----|----|----|----|
| x10 | x5 | x2 | x4 | x8 | x3 | x6 | x9 | x7 |
|-----|----|----|----|----|----|----|----|----|



# TIMES TABLES ROCK STARS



Alison says  $6 \times 7 = 42$

Do you agree?

Explain why.

$$7 \times 6 =$$

$$7 \times 2 \times 3 =$$

$$8 \times 7 =$$

$$2 \times 4 \times 7 =$$

$$2 \times 2 \times 2 \times 7 =$$

Which of these calculations are the same?  
Can you explain why?

# So, what is reasoning?

Some things reasoning can be seen as:

- **Thinking** about mathematics
- Making connections
- Application of facts and knowledge – either explicitly or implicitly
- Justifying
- Convincing yourself and others

12

Amir says,

***'All numbers that end in a 4  
are multiples of 4'.***



Is he correct?  
Circle **Yes** or **No**.



Yes / No

Explain how you know.



12

1 mark







What is in  
between the  
trees?

What time of  
day is it?

How many  
orange fish?

What is  
beneath the  
bridge?

Which is greater  
– the number of  
trees or frogs?

How many  
birds in the  
sky?

How many  
spiders  
altogether?

Are there  
more fish or  
trees?

How many short  
red flowers  
are there?

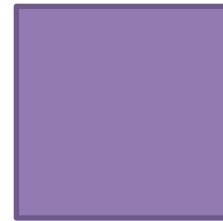
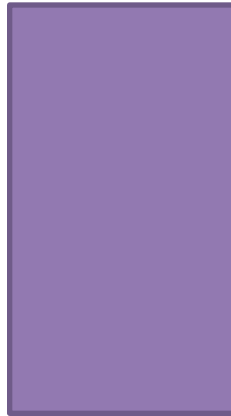
What shapes  
can you see?

What is on top  
of the house?



# Reasoning

- Which is the odd one out? Why?



# Odd one out

- Which is the odd one out? Why?

**6, 15, 28, 36, 66**

# Tell me everything you know

# 24



Nearly  
half of 50



'My aunt was  
24 last year'

24



$14 + 10$

Christmas  
Eve

Approximate  
weight in  
grams of a  
slice of bread

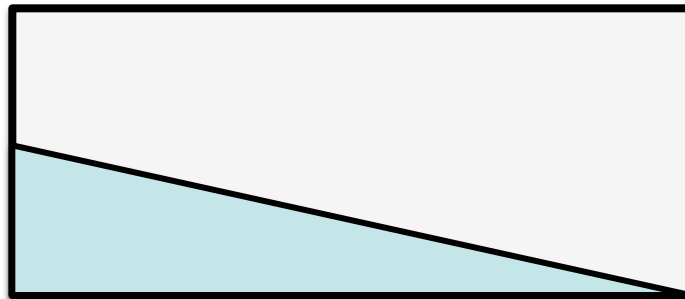
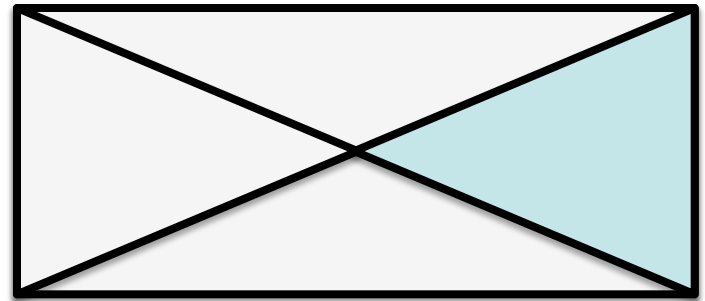
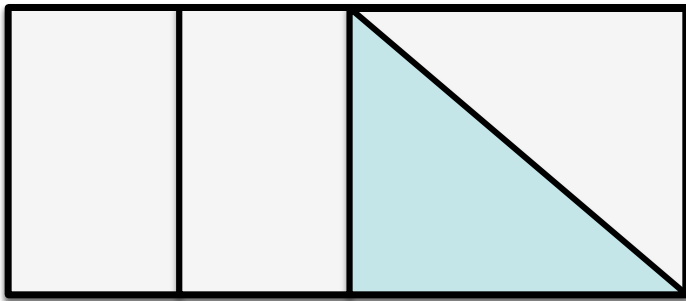
Where have  
you  
seen....?

What do you  
know  
about....?

How many different  
ways can you  
make....?

Can you show  
me....?

Do these diagrams represent  $\frac{1}{4}$  ?





# Problem solving

- Learning **to** solve problems
- Learning **through** solving problems

# A problem for you to solve

|                                                                                    |                                                                                    |                                                                                     |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   |   |   |
|   |   |   |
|  |  |  |

= 12

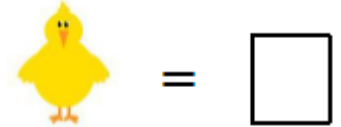
= 15

= 13

=  
14

=  
10

=  
16

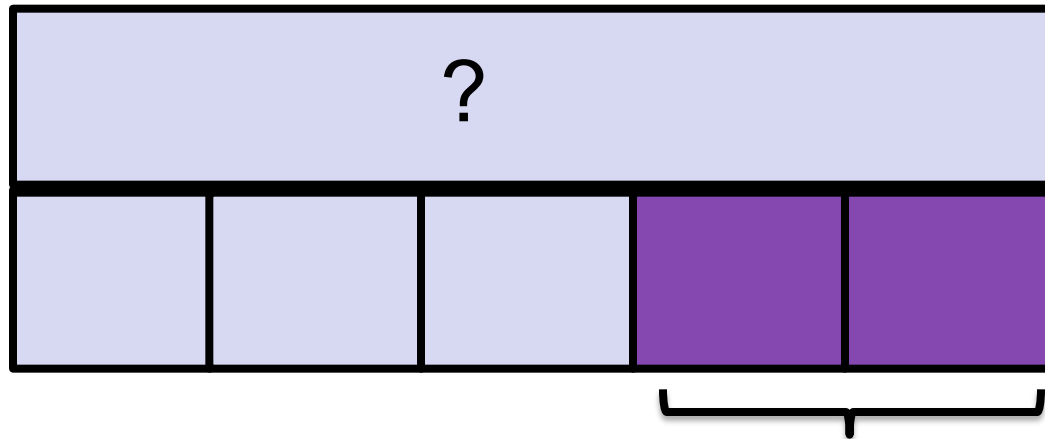


**Ben spent  $\frac{2}{5}$  of his money on a CD.  
The CD cost £10. How much money  
did he have at first?**



# Word Problems





£10

**20** On Saturday Lara read  $\frac{2}{5}$  of her book.

On Saturday Lara read  $\frac{2}{5}$  of her book.



On Sunday she read the **other** 90 pages to finish the book.

How many pages are there in Lara's book?

Show  
your  
method

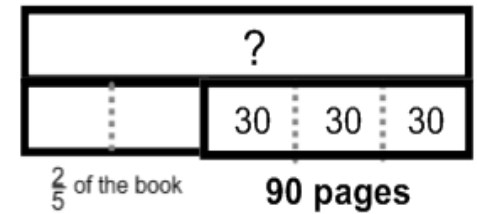
**pages**

2 marks



On Saturday Lara read  $\frac{2}{5}$  of her book.

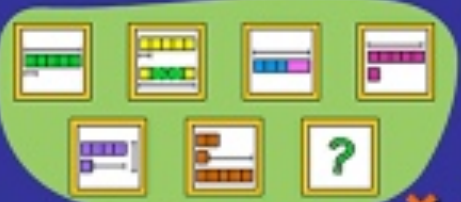
On Sunday she read the **other** 90 pages to finish the book.



How many pages are there in Lara's book?

# Thinking Blocks:

<http://www.mathplayground.com/thinkingblocks.html>

|                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                          |                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Thinking Blocks</b><br/>Model and Solve Word Problems</p>  <p>Addition and Subtraction Practice</p> <p><b>Addition and Subtraction</b></p> | <p><b>Thinking Blocks</b><br/>Model and Solve Word Problems</p>  <p>Multiplication and Division Practice</p> <p><b>Multiplication and Division</b></p> | <p><b>Thinking Blocks</b></p> <p><b>JR</b></p> <p>addition and subtraction<br/>with small numbers</p> <p><b>Thinking Blocks Junior</b></p>   |
| <p><b>Thinking Blocks</b><br/>Model and Solve Word Problems</p>  <p>Fraction Practice</p> <p><b>Fractions</b></p>                               | <p><b>Thinking Blocks</b><br/>Model and Solve Word Problems</p>  <p>Ratio and Proportion Practice</p> <p><b>Ratio and Proportion</b></p>              | <p><b>Modeling Tool</b></p>  <p><b>Modeling Tool</b></p> |

# Keep it simple!

Maths is not always about 'big' numbers and times tables – it is about being able to apply concepts to different situations, problem solve, and find different strategies to check working.

# Props around the home

- A prominent clock- digital and analogue is even better. Place it somewhere where you can talk about the time each day.
- A traditional wall calendar-Calendars help with counting days and spotting number patterns
- Board games
- A pack of playing cards- Card games can be adapted in many ways to learn about number bonds, chance, adding and subtracting
- Measuring Jug-Your child will use them in school, but seeing them used in real life is invaluable. Also useful for discussing converting from metric to imperial

- Dried beans, Macaroni or Smarties- for counting and estimating
- A tape measure and a ruler- Let your child help when measuring up for furniture, curtains etc
- A large bar of chocolate (one divided into chunks) - a great motivator for fractions work
- Fridge magnets with numbers on- can be used for a little practice of written methods
- Indoor/outdoor Thermometer- especially useful in winter for teaching negative numbers when the temperature drops below freezing
- A dartboard with velcro darts- Helps with doubling, trebling, adding and subtracting.

# Calendar Activities

- Mark off days
- What day is it today? Yesterday was.... Tomorrow will be....
- How many days until the weekend?
- Who has a birthday this week? How many days until Jack's birthday?
- How many school days left this month?
- What fraction of the month is either a Monday or Tuesday?

Include rhymes/songs about days of the week, months of the year, seasons, weather....

<https://www.youtube.com/watch?v=3tx0rvuXIRg>

# KS1 Dice Games

- Tug of War

<http://nrich.maths.org/5897>

- Two dice

<http://nrich.maths.org/150>

- Dotty Six

<http://nrich.maths.org/7337/note>

- Shut the box

<http://nrich.maths.org/6074/note>

- Snail One Hundred

<http://nrich.maths.org/8303>



# Supporting your child at home

## **Maths Apps**

There are thousands of educational apps which will support your child's maths learning. We have selected just a few that we would recommend as being particularly good.

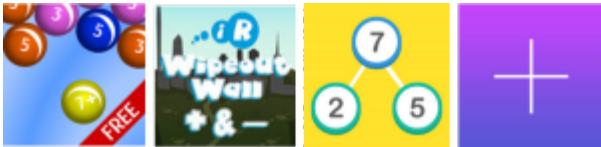
### **Number Bonds**

[Bubble Pop Number Bonds](#) (free)

[Wipeout Wall Addition and Subtraction](#) (69p)

[Number Bonds and Fact Families](#) (69p)

[Number Bonds Pro](#) (£1.49)



### **All 4 Operations**

[6 Numbers](#) (free)

[Pop Maths Lite](#) (free)

[Mathletics](#) (free)

[Super Tiles](#) (69p)



Click on the links below to be taken  
directly to the App Store

# Supporting your child at home

## Maths Apps

### Times Tables

[Tables Lite](#) (free)

[Cloud Tables](#) (free)

[DK Times Tables](#) (free)

[Wipeout Wall Multiplication and Division](#) (69p)

[Eggs on Legs](#) (69p)

[Table Mountain](#) (69p)

[Division Descent](#) (69p)

[Frontier Factors](#) (69p)



### Shape

[Banana Hunt](#) (69p)

[Billy Bug and his Quest for Grub](#) (69p)

[Beebot](#) (69p)



### Telling the Time

[Telling Time Quiz](#) (free)

[Stop the Clock](#) (free)

[Interactive Telling Time Lite](#) (free)



# Supporting your child at home

## **Board Games and Card Games**

Here are a few ideas for board games and card games that you can buy to play at home. All these games are fun to play but also develop essential maths skills including number, shape and problem solving.

Games that you can buy:

[Battleships](#)

[Rush Hour](#)

[Connect Four](#)

[Trionimos](#)

[Swish](#)

[Square by Square](#)

[Addition Snap](#)

[Maths Snap Plus](#)

[Fraction Action Snap](#)

[Monopoly Junior](#)

[Uno](#)

[Rubiks Cubes](#)

[Dominoes](#)

[Hexago Continuo](#)

[Quirkle](#)

[Shape by Shape](#)

[Subtraction Snap](#)

[Four Function Snap](#)

[Times Tables Snap](#)

**Click the links to go  
directly to Amazon**

# Websites For Parents

- National Numeracy Parent Toolkit has a wealth of tips and advice for parents.

<http://www.nnparenttoolkit.org.uk/>

- Oxford Owl includes a range of activities, top tips and eBooks simple ideas, to help your child with their maths at home.

<http://www.oxfordowl.co.uk/maths-owl/maths>

- Maths 4 Mums and Dads explains some of the milestones children make between the ages of 3-and-11-years-old.

<http://www.maths4mumsanddads.co.uk/index.php>

- Nrich. A range of maths games, problems and articles on all areas of maths. Parents of Key Stage 1 children should select 'stage 1'.

<http://nrich.maths.org/frontpage>

<http://www.mathsnoproblem.co.uk/parent-videos>

# Websites For Children

<http://www.amathsdictionaryforkids.com/>

<http://www.bbc.co.uk/bitesize/ks1/maths/>

<http://www.ictgames.com/resources.html>

<http://www.ilovemathsgames.com/>

<http://www.mathsisfun.com/index.htm>

<http://www.mathszone.co.uk/>

<http://www.multiplication.com/>

<http://www.primarygames.co.uk/>

<http://resources.woodlands-junior.kent.sch.uk/maths>

<http://www.topmarks.co.uk/>