

Helping your child with Mathematics

A Parents' Information Session
Wednesday 10th November 2010

Our aims from this information session:

- ▶ How the maths curriculum is divided
- ▶ How you can help your child with their homework
- ▶ How you can adapt resources you have at home (playing cards, snakes and ladders board etc) to help your child with maths

We shall be running a practical maths workshop for parents during the evening next year.

The New Mathematics Framework

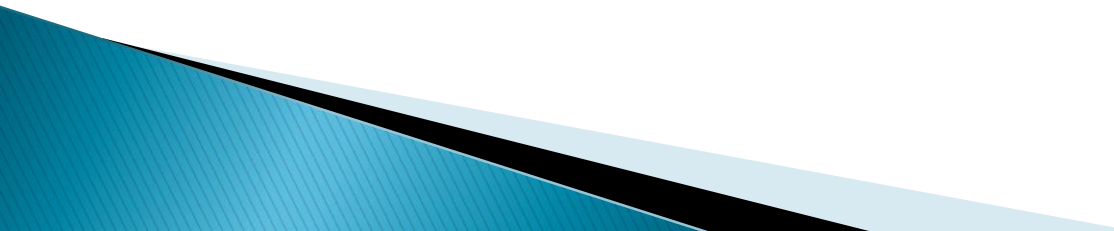
1. Counting, partitioning and calculating
2. Securing number facts and understanding shape
3. Handling data and measures
4. Calculating, measuring and understanding shape
5. Securing number facts, relationships and calculating

These 5 blocks repeat each term from Year 1 to year 6. New objectives review and build upon previous learning – like a spiral

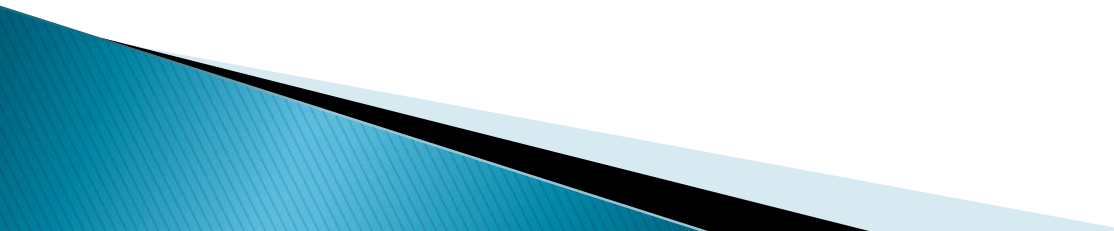
The Skills of Using and Applying

- ▶ **Problem solving**
- ▶ **Communicating**
- ▶ **Reasoning**

These are skills that run through all the maths topics and are taught through practical work and investigation.



The following slides show the objectives for the end of Year 6 and examples of assessment questions for different year groups, taken from the Primary Mathematics Framework.



Counting, partitioning and calculating

(By end of Year 6)

- ▶ Addition and subtraction
- ▶ Mental calculations
- ▶ Efficient written methods: whole numbers and decimals
- ▶ Ordering, partitioning and rounding decimals to 3 places: positive and negative numbers
- ▶ Solving multi-step word problems involving numbers, money or measures
- ▶ Explaining reasoning and conclusions, orally and on paper, using words, diagrams, symbols
- ▶ Multiplication and division
- ▶ Mental methods: $TU \times U$, $TU \div U$ and special cases
- ▶ Written methods: $TU \times TU$, $HTU \times TU$, $HTU \div U$, multiplying and dividing decimals by one-digit integer
- ▶ Using a calculator

Example of assessment question/ task:

Year 3: Here are some calculations: $52 - 9$,
 $8 + 74$,
 $71 - 68$,
 $4 + 5 + 6 - 8$.

What strategies did you use to work out the answers? Could you use a different method?

Year 5: Write a number that is bigger than 0.3 but smaller than 0.4

Securing number facts and understanding shape (End of Year 6)

- ▶ Multiples, factors, primes and prime factors
- ▶ Tables to 10×10 ; squares, squares of multiples of 10
- ▶ Tests of divisibility
- ▶ Mental methods: multiplication and division facts applied to decimals
- ▶ Patterns, relationships and properties of numbers and shapes; suggesting hypotheses
- ▶ Representing a problem using calculations, symbols, formulae, diagrams
- ▶ Visualising and classifying 3-D and 2-D shapes, including quadrilaterals
- ▶ Making and drawing shapes
- ▶ Using a calculator including to find inverses

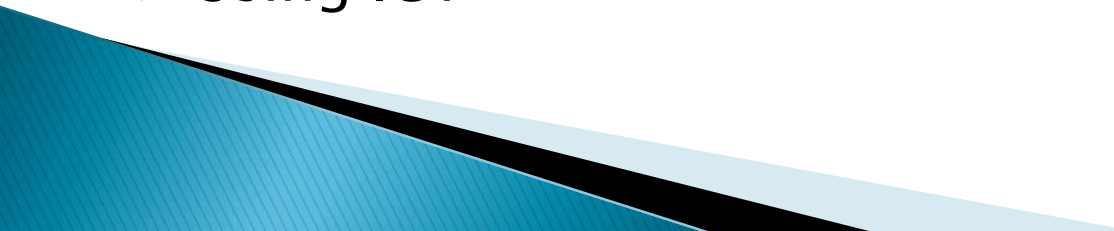
Example of an assessment question/ task :

Year 1: There are 12 pegs on a coat hanger. Five are showing. How many are hidden under the cloth?

Year 3: Tell me some addition and subtraction facts with the answer 12.

Year 5: What tips would you give someone who had forgotten the 7 times-table to help them to work it out?

Handling data and measures (End of Year 6)

- ▶ Language of probability
 - ▶ Finding outcomes from data
 - ▶ Constructing frequency tables, bar charts for grouped discrete data and line graphs
 - ▶ Interpreting pie charts
 - ▶ Finding the mode, range, median and mean
 - ▶ Collecting, processing presenting and interpreting data to solve problems
 - ▶ Describing and interpreting results and solutions
 - ▶ Identifying further questions
 - ▶ Estimating and measuring to required degree of accuracy
 - ▶ Metric units, conversions
 - ▶ Comparing readings from scales
 - ▶ Using ICT
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Example of assessment question/ task:

- ▶ Year 4: Look at these cards. They have weights in grams or kilograms.
5 kg, 500 g, $\frac{1}{4}$ kg, 1.5 kg, 750 g
Put the cards in order from the lightest to the heaviest.
- ▶ Year 2: This metre stick has a number label every 5 cm. Where is the mark for 17 cm?

Calculating, measuring and understanding shape (End of Year 6)

- ▶ Calculation
- ▶ Mental and written methods: integers and decimals, including $\text{HTU} \times \text{TU}$
- ▶ Metric units, conversions, imperial units
- ▶ Reading from scales
- ▶ Solving multi-step problems, using a calculator where appropriate
- ▶ Estimating and checking results
- ▶ Estimating, measuring and drawing angles
- ▶ Angle sum of triangle; angles around a point
- ▶ Coordinates
- ▶ Reflection, translation, rotation
- ▶ Area and perimeter of rectilinear shapes

Example of assessment question/ task

- ▶ Year 2: Ellen has a £5 note. She spends £1.99. Draw a ring around each coin she gets in her change.
- ▶ Year 4: Tick the correct box. A can of drink holds about...
 - 0.3 litre
 - 3 litres
 - 30 litres
 - 300 litres

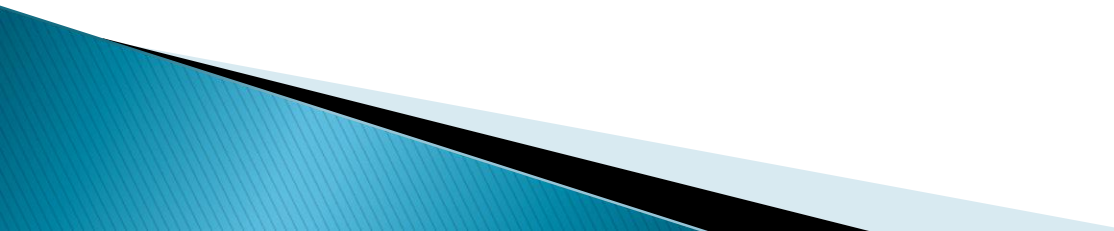
Securing number facts, relationships and calculating (End of Year 6)

- ▶ Mental methods with decimals
- ▶ Written methods: $\text{HTU} \times \text{TU}$, $\text{U.t} \times \text{U}$, $\text{HTU} \div \text{U}$, $\text{U.t} + \text{U}$
- ▶ Explaining reasoning
- ▶ Recording solutions, using symbols where appropriate
- ▶ Checking solutions in context
- ▶ Solving multi-step problems with integers and decimals
- ▶ Solving problems with fractions and percentages
- ▶ Solving puzzles by tabulating systematically
- ▶ Simplifying fractions
- ▶ Ordering fractions
- ▶ Equivalent fractions, decimals, percentages
- ▶ Fractions and percentages of quantities
- ▶ Solving direct proportion problems by scaling numbers up and down.
- ▶ Using a calculator

Example of assessment question/ task

- ▶ Year 2: Take 20 counters. Can you show me one quarter? Two quarters? Three quarters? Four quarters?
- ▶ Year 4: In a book of stamps, there are 2 red stamps to every 5 green stamps. There are 15 green stamps in the book. How many red stamps are there?

We want our children:

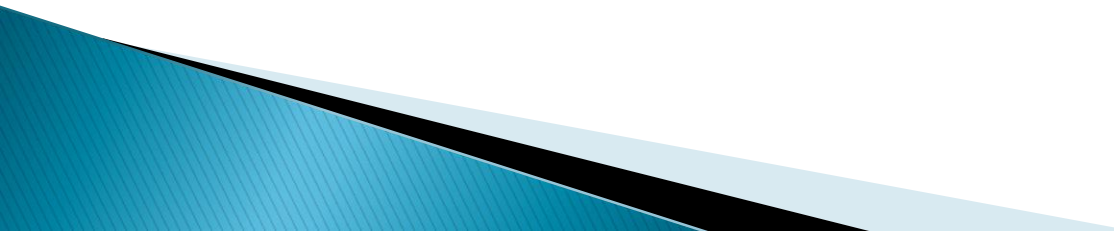
- ▶ To see maths as a fun subject
 - ▶ To know that maths is an important every day life skill
 - ▶ To see maths as a practical subject
 - ▶ To feel success
 - ▶ To be inspired to investigate and ask what if?
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Maths Homework

At times children will be set written problems or calculations. At other times children will be set investigations or practical tasks or games to play.


The discussion you have with your child is important to your child's learning. If your child completes homework without you, you must talk to your child about it. This will help them to develop their understanding

Please practise the skills from the set maths homework throughout the week and over time. Revise and practise these skills as you would do with reading.



How you can help

Play games with dice

- ✓ add together dice
 - ✓ How many more moves until ..?
 - ✓ How many moves ahead/ behind are you?
 - ✓ A snakes and ladders board is a hundred square – use it to read and recognise numbers, count in 2s, 3s, find ten more, 1 1 more
 - ✓ Double the dice score
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How you can help

Play cards or dominoes where you keep a score.

If you are not the winner, add up the score of the dominoes/cards you have left and keep score or subtract the score from 100.

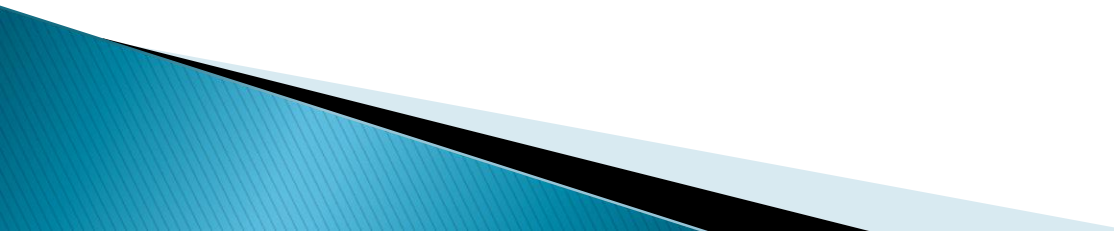
Use what you have at home to help your child to practise a little and often e.g. if your child is finding it difficult to learn their 6 times table, write each fact a different stair so they practise each time they go upstairs.

Overtime, remove the numbers.

How you can help -

The following games are ideas by Ian Roper

Use playing cards to practise maths

- ✓ Take 2 cards from the pack and multiply together to make a score. Keep the score. The first to 200 wins.
 - ✓ Adapt this game - add up the cards. Highest score from each round wins
 - ✓ Adapt this game - only count score if the cards add up to an even number
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How you can help –

The following games are ideas by Ian Roper

Use playing cards to practise maths

- ✓ Take 2 cards from the pack and use these to help you make 2 different 2 digit numbers e.g. I choose 5 of hearts and 3 of spades. I can make 53 or 35. What's the difference between these numbers. That's my score for the round. Who can get the biggest difference? (This can be done with dominoes)
- ✓ Adapt this game – who can make the biggest odd number?
- ✓ Adapt this game – choose 3 cards and use 2 to make a number. Who can make a number divisible by 5?

How you can help -

The following games are ideas by Ian Roper

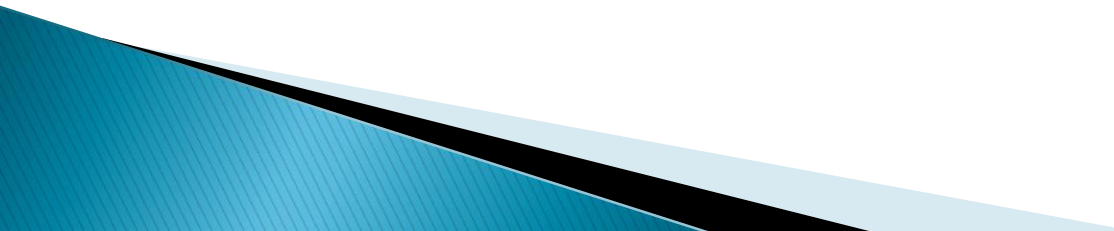
Use dice to practise maths

- ✓ Roll a dice 4 times and write down the number. If you roll a 4 it can count as 4 units or 4 tens so 4 or 40.
- ✓ The aim is to get as close to 100 as possible with the 4 numbers you rolled. The challenge is deciding whether to use the number as a units number or a tens number.

How you can help -

The following games are ideas by Ian Roper

Use dominoes to practise maths

- ✓ Share the dominoes out between each player. Each player must place a domino underneath each other's like a ladder.
 - ✓ Treat each domino as a 2 digit number e.g. If you have 5 and 2 this can stand for 52 or 25
 - ✓ Each domino should be higher than the previous player's. The person who can not place a higher number loses.
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How you can help

Use maths websites – play games together.

There are many free maths games available on line. Here are some examples you may wish to try:

Maths is fun

- ✓ mathsisfun.com/numbers/math-trainer-multiply.html

Hit the Button

- ✓ <http://www.wmnet.org.uk/resources/gordon/Hit%20the%20button%20v9.swf>

Count on

- ✓ <http://www.counton.org/games/>

Please remember to supervise your child when using the internet. For further information on using the internet safely please see the children's page.