Year 3: Spring term

Topics studied this half term:

- Length and perimeter
- Fractions

Within length and perimeter, your children will be learning to:

- Measure length
- Recognise equivalent lengths – m & cm
- Recognise equivalent lengths – mm & cm
- Compare lengths
- Add lengths
- Subtract lengths
- Measure perimeter
- Calculate perimeter

Within fractions, your children will be learning to:

- Calculate with unit and non-unit fractions
- Make the whole
- Find tenths
- Count in tenths
- Recognise tenths as decimals
- Place fractions on a number line
- Find fractions of a set of objects

Tips for good homework habits:

Take a break before your child gets bored or overwhelmed.

Measurement of length

HERE'S THE MATHS

Length is measured in metres, centimetres and millimetres. 1 m = 100 cm and 1 cm = 10 mm. Using millimetres allows accurate measurement. Your child needs lots of practise estimating lengths and using a ruler. Make sure that they start measuring at the correct place on the ruler where the scale begins and not right at the end.

ACTIVITY

What to do

- Both of you draw widely spaced lines of lengths 1 cm (10 mm), 4 cm (40 mm), 10 cm (100 mm) and 16 cm (160 mm) as accurately as possible.
- In two minutes, each find four real objects (e.g. toys or objects from the kitchen) that are as close as possible to these lengths, using the lines to test.
- Carefully measure the lengths of the real objects to the nearest mm and calculate the difference between the drawn length and the actual length, e.g. a glasses case has a length of 16 cm 4 mm; that is 4 mm bigger than 16 cm.
- Add up the differences for all four objects. The winner is the person with the smallest sum.

You will need:

- ruler with mm marked
- paper and pencil

Variation

- Repeat using different lengths using objects from another room.

QUESTIONS TO ASK

Use your hands to estimate 15 cm. Check with a ruler.

Hold up an object, e.g. a book, and ask your child to estimate the height and width to the nearest centimetre. Use a ruler to check.

Change 5 cm to mm.

Change 120 mm to cm.

- Ask more questions like these and ask your child to make up questions to ask you.

Measurement of perimeter

HERE'S THE MATHS

The perimeter is the distance all the way around the edge of something. It is measured in centimetres or metres, using a ruler or tape measure.

ACTIVITY

What to do

- Collect 5 books or rectangular objects and try to put them in order of increasing perimeter.
- Both of you should estimate the perimeter of the first book to the nearest centimetre.
- Take turns to measure the perimeter of the objects to the nearest centimetre.
- The closer estimate scores a point and the winner is the person with the higher score.

You will need:

- 5 books or rectangular objects of different sizes
- tape measure or ruler in cm

Variation

- Reverse the challenge by choosing 5 different perimeter lengths and trying to find objects with those perimeter lengths.

QUESTIONS TO ASK

The perimeter of a regular pentagon is 20 cm. What is the length of each side?

A regular octagon has sides equal to 6 cm. What is its perimeter?

The perimeter of a rectangle is 12 cm. What could be the lengths of the sides?

The 2-D shape I am thinking of has a perimeter of 20 cm. What shapes could it be and what are the lengths of the sides?

What is the perimeter of an 8 cm square? If you cut it into four 4 cm squares, what is the total perimeter the squares? And when you cut these into 2 cm squares? And 1 cm?

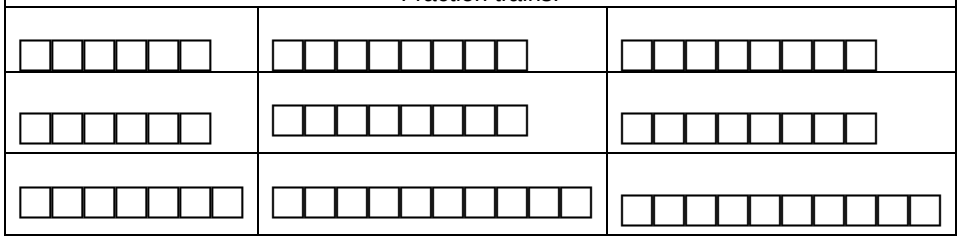
Fractions

HERE'S THE MATHS

Your child is learning to find unit and non-unit fractions of quantities and numbers using diagrams and apparatus. They understand what the numerator and denominator represent and can order fractions with the same denominator, e.g. $\frac{2}{5}$ is less than $\frac{3}{5}$. They know that when the numerator is the same as the denominator, the value is 1, e.g. $\frac{5}{5} = 1$. They understand that to find $\frac{1}{4}$ of a set of objects, you divide the number by 4.

ACTIVITY

Fraction trains!



What to do

- Ask your child to choose two colours to colour the first train.
- You write the fractions that describe the train, e.g. if 4 of the six carriages are blue and 2 are green, it is $\frac{4}{6}$ blue and $\frac{2}{6}$ green.
- Change roles and complete the grid.

You will need

- coloured pencils

Variation

- Use three colours for the train.
- Draw more trains

QUESTIONS TO ASK

How do I find $\frac{1}{2}$ ($\frac{1}{4}$, $\frac{1}{5}$) of 40 objects? Explain.

How many eighths do I need to add to $\frac{5}{8}$ to make a whole?

What is $\frac{3}{4}$ of 12?

What does $\frac{2}{5} + \frac{3}{5}$ equal?

Fractions

HERE'S THE MATHS

Equivalent fractions have the same value, e.g. $\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$. To understand equivalent fractions, your child needs to have a secure grasp of unit and non-unit fractions e.g. $\frac{1}{8}$ and $\frac{3}{5}$. Using diagrams can help. The use of a fraction wall can also help. You can demonstrate fractions in a practical way when you share a bar of chocolate or a pizza (providing everyone has equal shares).

ACTIVITY

What to do

$\frac{1}{4}$	Circle with $\frac{1}{4}$ coloured	$\frac{1}{4}$ rectangle coloured	$\frac{2}{8}$
$\frac{1}{2}$	$\frac{1}{2}$ square coloured	$\frac{2}{4}$	$\frac{4}{8}$
$\frac{3}{4}$	$\frac{3}{4}$ rectangle coloured	Circle with $\frac{3}{4}$ coloured	$\frac{6}{8}$
$\frac{1}{3}$	$\frac{1}{3}$ circle coloured	$\frac{1}{3}$ square coloured	$\frac{2}{6}$

- Look at the grid with your child and agree that each row represents the same fraction expressed in a different way.
- Carefully cut up the grid. Turn the pieces over and muddle then up.
- Play the pairs game. Take turns to turn over two pieces. If they represent the same fraction, keep the pair and have another go. If they do not, turn them back over, making sure that they remain in the same positions.
- The winner is the player with the most pairs at the end of the game.

Variation

- Add more cards with more challenging fractions.

QUESTIONS TO ASK

How do you find a quarter of a group of items?

What has to be added to $\frac{5}{8}$ to make one whole?

Tell me some fractions that are equivalent to $\frac{1}{2}$?