Mathematics in the Early Years

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.

By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures.

It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.
(Statutory framework for the Early Years Foundation Stage: early adopter version.)

What predicts success in mathematics?

We actually know a lot from research about building mathematical success in the early years, and we could do this more effectively than at present. A large scale study of pre-school experiences (Sammons et al 2002, Siraj-Blatchford et al 2002) found two key factors which predict progress:

- **parents providing a home learning environment**, where, for instance, children were encouraged to paint, draw and play with letters and numbers

- **pre-school settings providing adult-led mathematics focused activities**, such as number rhymes and games, alongside independent play. (https://www.greatschools.org/gk/articles/early-math-equals-future-success/)

By the summer term, most pupils are expected to be secure in the following:

Number Early Learning Goal

Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing. (Development Matters)

Shape Space and Measure Early Learning Goal

Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

Maths termly objectives for Reception

Autumn Term

Number:
- Recite numbers up to 6 in order accurately.
- Recite numbers backwards from 6 accurately.
- Identify numerals from 0-6.
- Write numerals 0-6
- Identify dice patterns (0-6).
- Order and compare numbers 1-6
- Count a set of objects accurately (0-6)
- Understand that numbers represent the amount of objects in a set (physical, pictorial, things that cannot be seen – steps/claps etc).
- Partition numbers 1-6 in different ways.

(Biggest part of this term is getting a real feel for the numbers 0-6 but hard to put that as an objective but must be the main focus)

SSM:
- Compare length (by physical/visual comparison)
- Compare weight (by physical comparison)

Spring Term:

All of the above plus:

Number:
- Write numerals to 10.
- Recite numbers to 15 in order accurately.
- Count a smaller set of objects from a bigger set of objects.
- Combine two sets of objects to make a larger amount (practical objects)
- Removing some objects to make a smaller amount.
- Write numerals 6-15.
- Order and compare numbers from 0-15.
- Partition numbers 6-10 in different ways.

(Biggest part of this term is getting a real feel for the numbers 6-10 but hard to put that as an objective but must be the main focus)

SSM: *No new statements this term.*

Summer Term:

All of the above plus:

Number:
- Write numerals 16-20
- Recite numbers to 20 in order accurately.
- Order and compare numbers from 0-20.
- Use language of addition and subtraction (more, less, all together, take away, bigger, smaller)
- Begin to make marks and numbers independently to record their maths work.
- Count on (rather than recounting)
- Understand what doubling means (two lots of the same amount)
- Understanding halving means (sharing between two equally)
- Solve doubling problems practically.
- Solve halving problems practically.
- Estimate sets of objects (0-10 objects)

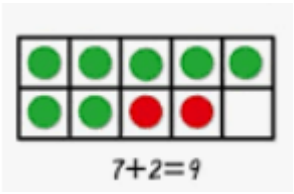
SSM:
- Talk about money.
- Describe patterns and shapes.

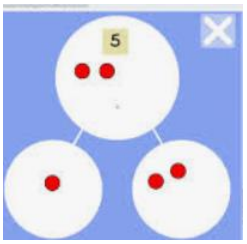
For further information, please click here to see our Maths handbook.

The manipulatives we use in Reception range from

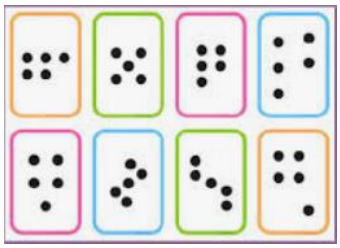
Everyday objects


to using specific mathematical resources to help a child develop their maths skills:






0	1	2	3	4	5	6	7	8	9	10



Developing maths skills at home

Outside

- Recognising bus numbers
- Number plate hunt. Who can find a 7? Add the numbers up.
- Comparing door numbers
- Counting – how many lampposts on the way to school?

Doing the washing

- Counting in 2s – matching shoes, socks, pairs of items
- Sorting by colour and size.
- Find four shoes that are different sizes. Can you put them in order?
- Which items are longer? Shorter?

Time

- What day is it yesterday, today, tomorrow?
- Use timers, phones and clocks to measure short periods of time.
- Count down 10/ 20 seconds to get to the table/ into bed etc.
- Recognising numbers on the clock. If you cover a number, what number was missing?

Food!

- Can you cut your toast into 4 pieces? Can you cut it into triangles?
- Setting the table. Counting the right number of plates etc. How many more do we need?
- Can you make shapes/ patterns out of the knives and forks. Can you put them in the right place in the drawers?
- Helping with the cooking by measuring and counting ingredients.
- Setting the timer.
- Positional language at dinner time: what is on the rice, where are the carrots etc?

Going shopping

- Reading price tags
- Counting items into the basket
- Finding and counting coins
- Comparing weights – which is heavier

Measuring

- Are you taller than a …?
- Marking height on the wall.
- Cut hand shapes out of paper. How many hands long is the couch? How long is the table? Which is longer?
- Who has the biggest hands in our family?
- How many steps from the gate to the front door?

Shapes

- Cut a potato into shapes (circles, triangle etc). Use with paint to make pictures and patterns.
- Cut out shapes from coloured paper/ newspaper and arrange into pictures.
- Shape hunt: Can you find a square in your house (windows etc), a circle …

Games

- Putting cards into piles
- Jigsaws (you can make your own by cutting up a magazine picture)
- Snap (matching pairs) or Happy Families (collect 4 of a kind)
- Snakes and ladders or other simple dice games.
- Adding numbers on two dice.
- Bingo, with numbers or shapes
- Hopscotch

Number rhymes and songs

Eg: 5 little monkeys jumping on the bed
One fell off and bumped his head
Mummy called the doctor and the doctor said
"No more monkeys jumping on the bed!"
4 little monkeys jumping on the bed …

Five little ducks went swimming one day …

Five little speckled frogs ….

For more nursery rhymes, head to the BBC website **https://www.bbc.co.uk/teach/school-radio/nursery-rhymes-counting-songs/zn67kmn**

For further guidance on how to support your child with maths, you may like to click on this link **https://home.oxfordowl.co.uk/maths/primary-maths-age-4-5-reception/**

For online maths games, please use Purplemash (Minimash) or Ictgames.co.uk