



Supporting Your Child Mathematics 2019



Many people are concerned that, when supporting their child with maths at home, they may be confusing their child and making things worse.

This booklet, together with the yearly mathematics meeting we run for parents, is designed to reassure and support you!



What Do The Children At Torpoint Nursery And Infant School Learn In Mathematics?

"Through creative, practical and exciting teaching of mathematics we enable our children to not only feel confident using their developing skills, knowledge and understanding to tackle mathematics activities but also to feel pleasure and wonder when they solve a problem for the first time, discover patterns, or notice connections."

In the Early Years Foundation Stage we follow the Statutory Framework for the Early Years Foundation Stage (EYFS). With support from the Development Matters in the Early Years Foundation Stage and the Early Years Outcomes publications to help staff identify ways of working that enable children to demonstrate the typical behaviours for their age.

We ensure children are supported in developing their understanding of Mathematics in a broad range of contexts. These are contexts in which they can explore, enjoy, learn, practise and talk about their developing understanding.

Children are provided with opportunities to practise and extend their skills, including recording, in all areas and to gain confidence and competence.

In Key Stage One the National Curriculum provides the basis of mathematical learning.

Your child's teacher will talk to you about what your child is learning during parental consultations and in the termly reports.

In addition our open door policy means at any time your child's teacher can answer any questions you have and if there is any area that it would be particularly useful for you to support your child with.

Give plenty of
praise and
encouragement

If your child is choosing to do maths ask your child to explain how they do it in school and then use the same methods as used in school. If there is any confusion talk to their teacher!

1 2 3 4 5

Recognising Numbers

Choose a number for the week, e.g. 2.

Encourage your child to look out for this number all the time.

- ◆ Can your child see the number 2 anywhere?
 - Look for numerals in the environment. You can spot numerals at home, in the street or when out shopping in the kitchen
 - on pages in a book
 - on doors
 - on car number plates
 - on buses
 - on the shop till
 - on shelves
 - in shop windows
- ◆ Find two apples, toys, spoons, straws, sweets, etc.
- ◆ Make patterns, such as two knives, two forks, two spoons, two knives, two forks, two spoons...

Choose a different number each week

This can then be extended to look for teens, twenties, thirties etc as your child gets older.

0 1 2 3 4 5 6 7 8 9

Around and round and round we go,
When we get home we have a zero.



Start at the top and down we run,
That's the way to make a one

Around and back on a railway track,
Two, two, two

Around the tree and around the tree,
That's the way we make a three.

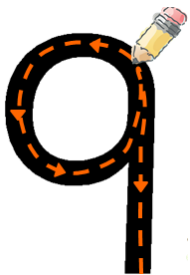


Down and along, down once more,
That's the way we make a four.

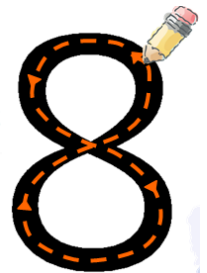
Down and around then a flag on high,
That's the way to make a five.

Down we go and make a loop,
Number six makes a hoop.

Across the sky and down to Devon,
That's the way we make a seven.



Make an 's' and do not wait!
When it's joined you have an eight.



Make a circle and then a line,
That's the way to make a nine

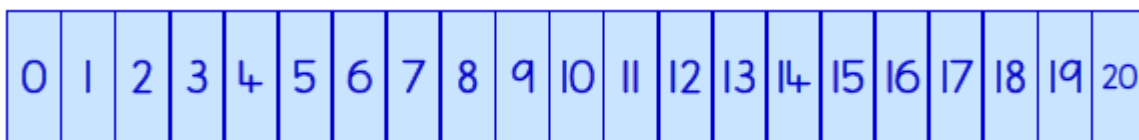
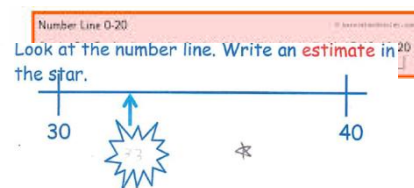
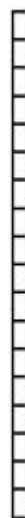
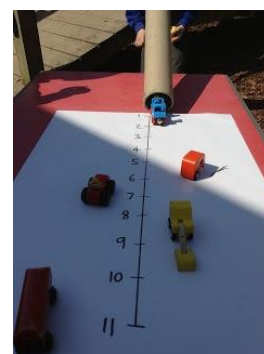
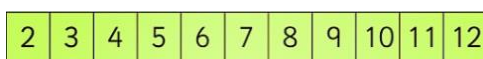
Ordering and Place Value

Place value and Ordering are the essential tools that underpin children's ability to calculate. Children should be taught these areas and then taught to apply them in the context of calculations

Ordering

Without an understanding of ordering children will not know if their answer is correct - we expect children to know that adding two numbers will give a bigger number; we teach them to put the biggest number first; understanding order is the tool they need to be able to do this.

The earliest work on ordering is counting by rote.



COUNTING IDEAS

- ⦿ Practise chanting the number names. Encourage your child to join in with you. When they are confident, try starting from different numbers - 4, 5, 6 . . .
- ⦿ Give your child the opportunity to count a range of interesting objects (coins, pasta shapes, buttons etc.). Encourage them to touch and move each object as they count.
- ⦿ Count things you cannot touch or see (more difficult!!). Try lights on the ceiling, window panes, jumps, claps or oranges in a bag.
- ⦿ Play games that involve counting (e.g. snakes and ladders, dice games, games that involve collecting objects).
- ⦿ Cut out numerals from newspapers, magazines or birthday cards. Then help your child to put the numbers in order.
- ⦿ Make mistakes when chanting, counting or ordering numbers. Can your child spot what you have done wrong?



Rhymes

Teach your child any number rhymes or songs that you know, particularly ones that involve holding up a number of fingers, like *five little speckled frogs* or *five little ducks*.

Practise them regularly, with actions.



Initially these counting games would be counting forward in ones. As your child moves through the school counting backwards in ones supports subtraction.

The next step is counting in steps other than one-forwards then backwards supports multiplication and division.

Place Value

1	2	3	4	5	6	7	8	9
10	20	30	40	50	60	70	80	90
100	200	300	400	500	600	700	800	900

Without an understanding of place value children will not be able to talk about or record answers that are bigger than 10.

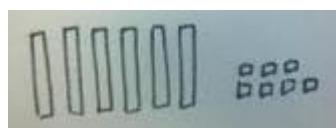
In its simplest terms place value is taught as the fact that the position of the **digit** is what tells us what it is worth.

The earliest work on place value is counting by rote beyond 10, and then counting by rote in steps of 10.

An understanding of place value allows children to derive facts e.g. $2 \times 3 = 6$ $12 + 3 = 15$ or $20 + 30 = 50$

Without understanding of place value children cannot progress to expanded or compact vertical calculations.

The key image for place value is Numicon; for children to readily use this to record and carry out calculations it should be recorded as dots and rectangles rather than images of the pieces.

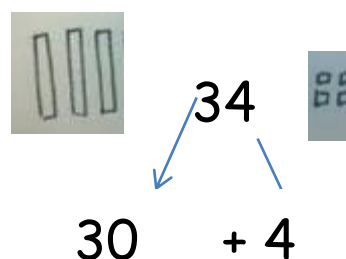


$$\begin{array}{r} 23 \\ + 22 \\ \hline 45 \end{array}$$

March 2016

(M.N. ELO)	2	Isabella used a 100 Square to help her find 1 more and less and then 10 more and less than a given number.
11	12	13
	22	

Other images and models support the language of place value



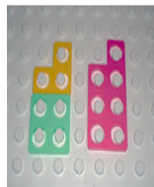
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Facts

Once the children have had repeated practical experience children are encouraged to learn facts by heart to help them do maths in their head. The key facts that underpin future mathematics are

EYFS Using quantities and objects, they add two single-digit numbers and count on to find the answer.

- the pairs of numbers which make 10 then 20



Remember children should be able to recall their number bonds for 10.

- the pairs of numbers that make all the totals up to 10 then 20



- doubles

- multiplication facts



$$5 \times 3 = 15$$

$$3 \times 5 = 15$$

Addition and Subtraction facts within 20 with an emphasis on learning them different ways to stop children just being able to do them in a sequence and so help children's fluency.

Fact Families

$$\begin{aligned} 10-3 &= 7 \\ 10-7 &= 3 \\ 10 &= 7+3 \\ 10 &= 3+7 \end{aligned}$$

Near Doubles

$$\begin{aligned} 6+7 &= 13 \\ 7+6 &= 13 \\ 7+8 &= 15 \\ 8+7 &= 15 \\ 8+9 &= 17 \\ 9+8 &= 17 \end{aligned}$$

Adding a set number

$$\begin{aligned} 8+3 &= 11 & 3+8 &= 11 \\ 8+4 &= 12 & 4+8 &= 12 \\ 8+5 &= 13 & 5+8 &= 13 \\ 8+6 &= 14 & 6+8 &= 14 \end{aligned}$$

Making a Total

$$\begin{aligned} 7 &= 6+1 \\ 7 &= 5+2 \\ 7 &= 4+3 \end{aligned}$$

Subtracting a set number

$$\begin{aligned} 11-3 &= 8 \\ 10-3 &= 7 \\ 9-3 &= 6 \\ 8-3 &= 5 \end{aligned}$$

Making a Number

$$\begin{aligned} 10-3 &= 7 \\ 9-2 &= 7 \\ 8-1 &= 7 \end{aligned}$$

Doubles

$$\begin{aligned} 1+1 &= 2 \\ 2+2 &= 4 \\ 3+3 &= 6 \\ 4+4 &= 8 \\ 5+5 &= 10 \\ 6+6 &= 12 \\ 7+7 &= 14 \\ 8+8 &= 16 \\ 9+9 &= 18 \\ 10+10 &= 20 \end{aligned}$$

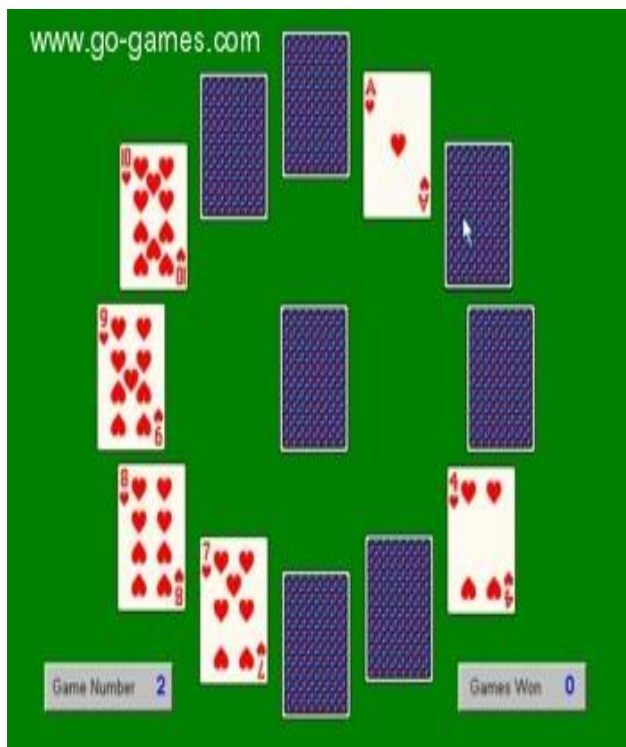
Making a Total

$$\begin{aligned} 4+1 &= 5 \\ 3+2 &= 5 \\ 2+3 &= 5 \\ 1+4 &= 5 \\ 0+5 &= 5 \end{aligned}$$

A Pack of Cards



- **Snap**- playing simple snap can help with counting and number recognition
- **Turn Over Tens** - Players take it in turns to turn cards over. The first player to say ten when that is the total made by adding the two cards together wins that pair of cards. The winner is the player with cards left. This game is more effective with the picture cards removed.
- **Turn Over Totals** - Players take it in turns to turn cards over. The first player to say the total made by adding the two cards together wins that pair of cards. The winner is the player with the most pairs.



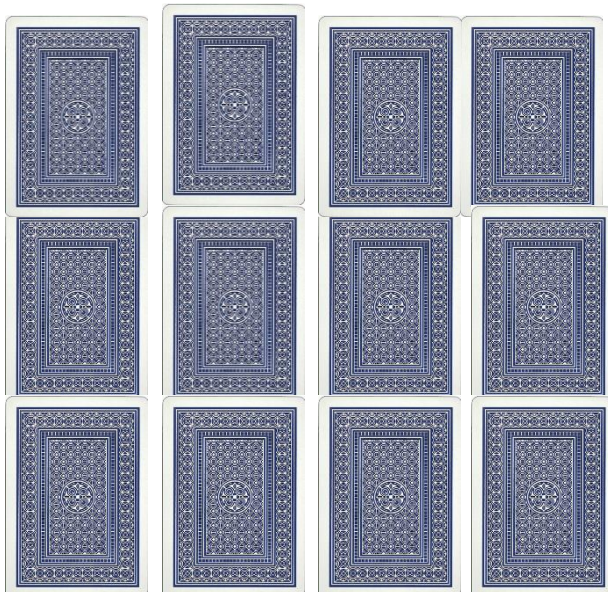
Clock Patience

Deal 13 piles of four cards - 12 in a circular pattern as if on to the hours of a clock, and one into the clock's centre.

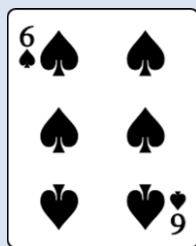
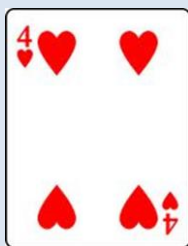
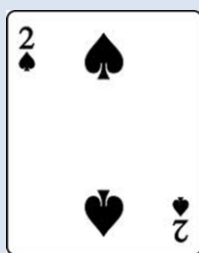
Turn over the top card of the central pile. Tuck it, face-up, beneath whichever hour pile matches its rank (ie five o'clock for a five, one o'clock for an ace), then turn over that pile's top card. Jacks go to 11 o'clock, queens to 12 and kings to the centre. Repeat the process with the new card. Play continues in this way until it can no longer continue.

You win if all the cards are turned face-up, but if four kings appear first you lose as there will be no card to flip - so have another go.

Elevens Patience (our version)



- Deal 12 cards face down on the table. Then deal out the rest of the cards until all the cards are dealt.
- Turn the top card on each pile face up
- Remove pairs of cards which total 11.
- As you remove the card turn the next card up, if there is a space move a card from any pile into the space.
- The game ends when you have no cards left.



Turn Over Multiples -

- Deal a pack of cards face up into five piles
- Players take it in turns to turn cards over.
- The first player to identify a multiple of 2 (or 5 or 10) picks up the pile of turned over cards.
- Play continues until one player has all the cards

Winner takes all!

You need two packs of playing cards or two sets of cards with numbers on them (*there is a set at the back of this booklet*)

- Two players will each turn a card over.
- The players will compare cards to see who has the biggest card, that person wins that round.
- Then work out the difference between the two numbers- (found by counting on smallest to largest) and win that in pennies.
- The first to reach 20 pence wins (and maybe gets to keep the money!)

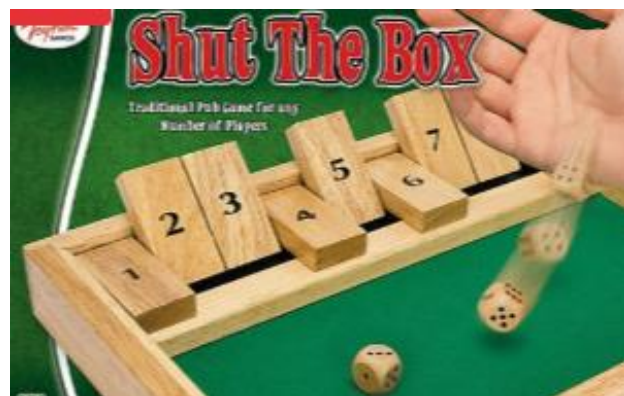


Using Dice

Cross it Out

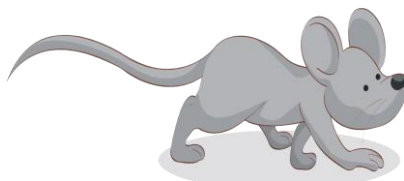
- Write the numbers 1-12 on a piece of paper.
- Throw two dice. Either cross out the total the dice make or the number on each dice e.g. if you throw a 1 and a 4 you could cross out the total 5, or the 1 and the 4.
- Keep throwing the dice and crossing out until you throw a pair of dice for which you have already crossed out the total or the face value of the dice.
 - Can you cross them all out?
 - Can you cross out more than your friends.?

This game is based on the game
shut the box .



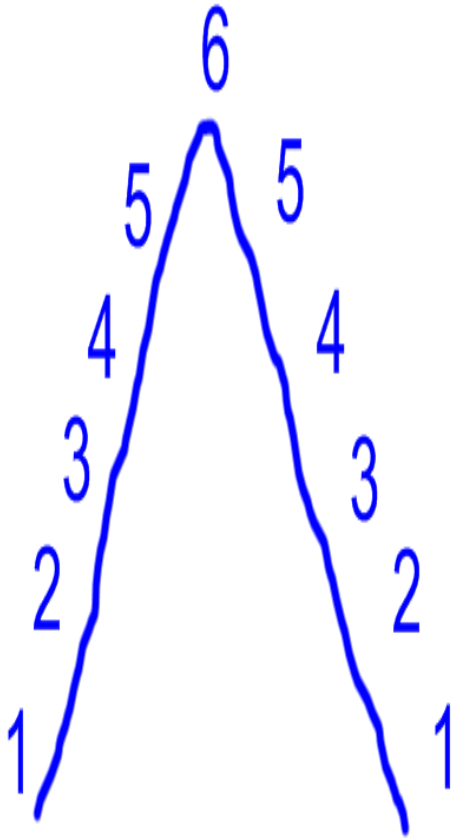
Mouse

The aim of the game is to be the first to complete a Mouse. Each roll of the die enables a particular body part to be drawn as follows:



- 6 = body
- 5 = nose
- 4 = whiskers
- 3 = eyes
- 2 = ears
- 1 = tail

The body must be drawn before the other body parts are added to it, so players must therefore roll a 6 to start. Once the body has been drawn, the other parts of the mouse may be added in any order. If you roll a number which relates to a part you have already added, you miss your go and pass the die on.



Mountain

The object of the game is to be the first to climb your mountain, in number order, and then descend the other side.

A piece of paper, a pencil and 2 dice. Allow the youngest player to start.

He rolls the dice and hopes for a 1, which will allow him to cross the number 1 off his mountain. He must "ascend" in numerical order, so cannot cross off the 2 until he has crossed off the 1. If he rolls a 1 and a 2, however, he can cross both numbers off in one turn. Play continues until someone has made it all the way up their mountain and down the other side in the correct order.

Beat that

How to play

Roll the dice and put them in order to make the highest number possible. If you roll a 4 and an 6, for example, your best answer would be 64. Using 3 dice, a roll of 3, 5 and 2 should give you 532, and so on. Write down your answer, pass the dice, and challenge the next player to "Beat That!"

Play in rounds and assign a winner to each round.

For a change, try making the smallest number possible!

This is a great game for reinforcing the concept of place value. If you are playing with younger children, explain your reasoning out loud and encourage them to do the same.

Pass it on.

You need

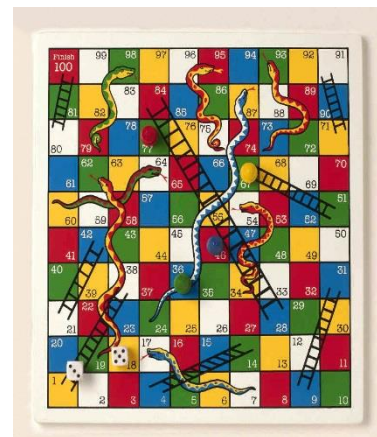
- A large bucket of water,
- A small bucket
- A scoop (shovel or cup)
- A dice.



Throw the dice and add that number of scoops of water to the small bucket.

Pass the scoop and the dice on

The children will have to keep count as once the scoop has been added to the small bucket it is no longer discreet and can't be checked.

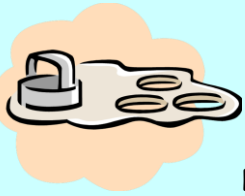


Changing Your Board Games

- Use two dice instead of one to help your children practice making totals.
- Ask the children to predict which number they will land on before counting the spaces.

Consider paying for small amounts with cash and talk about the coins you have used with your child.

Once a week, tip out some small change from a purse. Count it up with your child.



Double and Half Biscuits

- ◆ 2 margarine
- ◆ 1 icing sugar
- ◆ 2 plain flour
- ◆ 1 custard powder

*Usually 2= 200g of margarine and of flour
and 1= 100g of icing sugar and of custard powder
but it is the ratio of the quantities that is important.*

Cream the margarine and the icing sugar together with an electric mixer

Then mix in the Flour and custard powder

When all is combined bring the dough together with your hands.

Roll out on a floured surface - between, about half a centimetre thick

Cut into any shape you want or roll into small balls and push flat.

This mixture can be rolled out time and time again.

Bake for 10 mins at about 180degrees- until lightly golden.

Decorate, maybe dip half in chocolate.

Take Away Blocks

Start with 10 building blocks. Get the child to close his eyes and take three away. The child has to work out how many you have taken and how many are left.



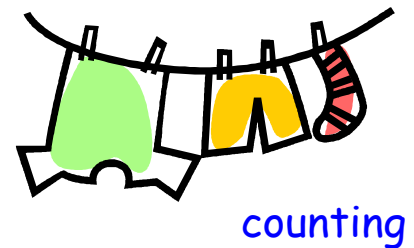
This game could also be played with beads, or collections of cars etc

Problem Solving- Noticing Maths Opportunities

- Everyday, Everywhere!



- ⊙ Planting seeds or bulbs in a container or flower bed. How many will fit, how far apart?
- ⊙ Make a model using boxes/containers of different shapes and sizes. Ask your child to describe their model.
- ⊙ Let your child help with cooking at home. Help them to measure ingredients accurately using weighing scales or measuring jugs. Talk about what each division on the scale stands for.
- ⊙ Recording the growth of plants in the garden. Ask the child to decide how to do it. Maybe use photos and then order them.
- ⊙ Drawing simple plans of the bedroom, the kitchen, the garden. Where will the new xxx go? measuring a distance using hand spans, footsteps
- ⊙ Calculating heights of family members - who is the tallest?
- ⊙ Playing with plastic jugs and containers in the bath; looking at the bottles and discussing capacity of various containers
- ⊙ Wrapping parcels (what shapes are the parcels, how much paper do we need?)
- ⊙ Sorting clothes for washing -by size or colour
- ⊙ Matching pairs of socks, gloves, shoes then in 2s
- ⊙ Ordering a group of items by size when tidying up.
- ⊙ Threading beads on a string to a set pattern
- ⊙ Setting the table for meals ; what if there was one more person. How many forks?
- ⊙ Making sandcastles and discussing different shapes.



Telling the time - help your child to master this difficult skill by taking it in stages.

First stress the 'o-clocks'. "It's nearly five o'clock, time for tea!" Children can learn to recognise o'clock times on a digital display (5:00) and on a clock face (long hand pointing up at the 12).

Then introduce half past, big hand pointing down and digital 5:30.

Next talk about and point out quarter past and quarter to.

Then finally (in Year Two) 5 minute intervals

As your child becomes confident at each stage also ask:

- ◆ What time will it be one hour from now?
- ◆ What time was it one hour ago?

*Ask your child to guess in advance how long they think an activity will take.
Can they beat their time when they repeat it?*

