

Potten End Primary School

Maths at home

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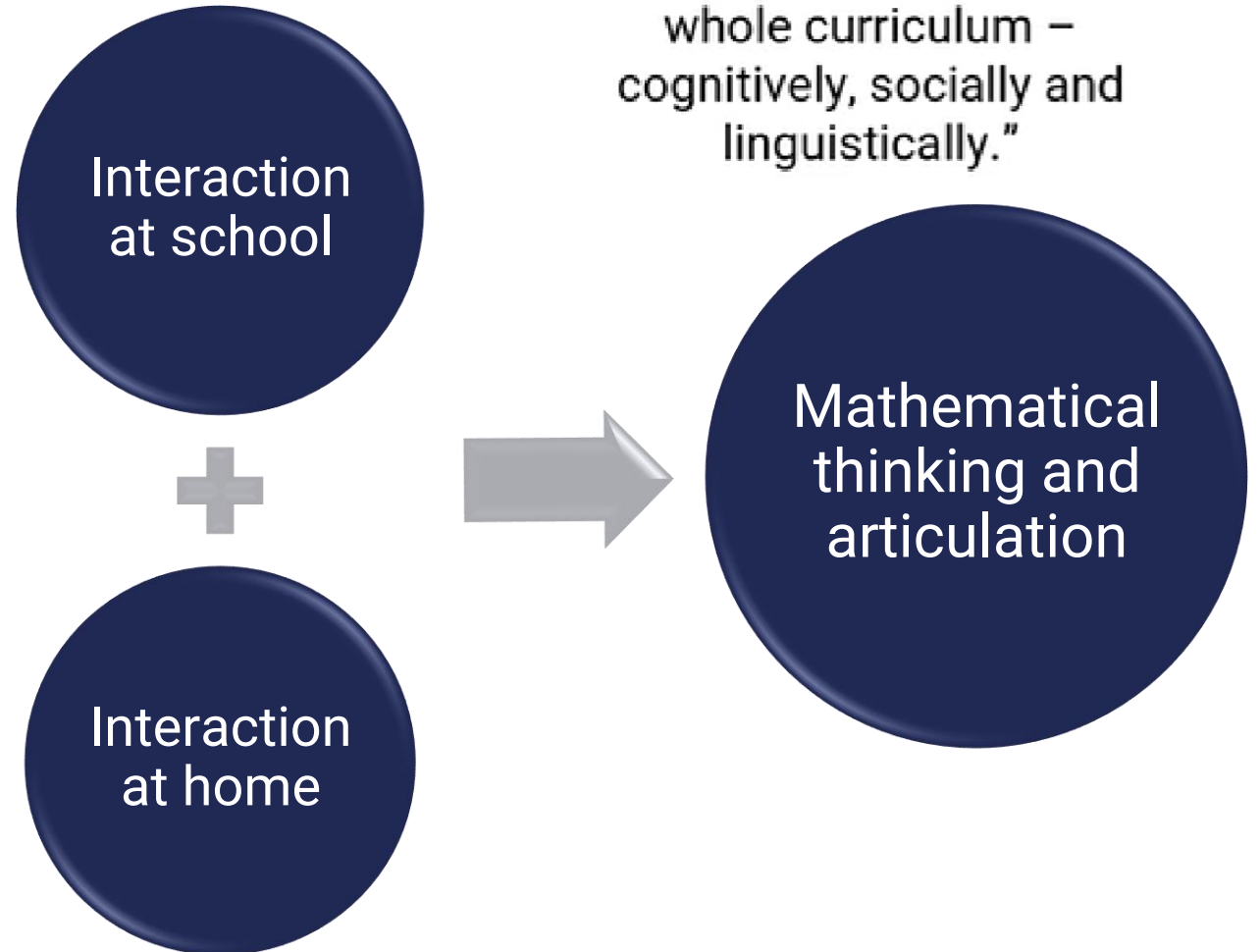
Maths Lead

Our aims

Why is parent partnership important?

It is important to focus on social interactions to develop maths skills at home.

The ways in which school and parents listen to and talk to children, can play a key role in developing their mathematical thinking.



“The national curriculum for mathematics reflects the importance of spoken language in pupils’ development across the whole curriculum – cognitively, socially and linguistically.”

What do we teach and when?

EYFS – Early Learning Goals

Number

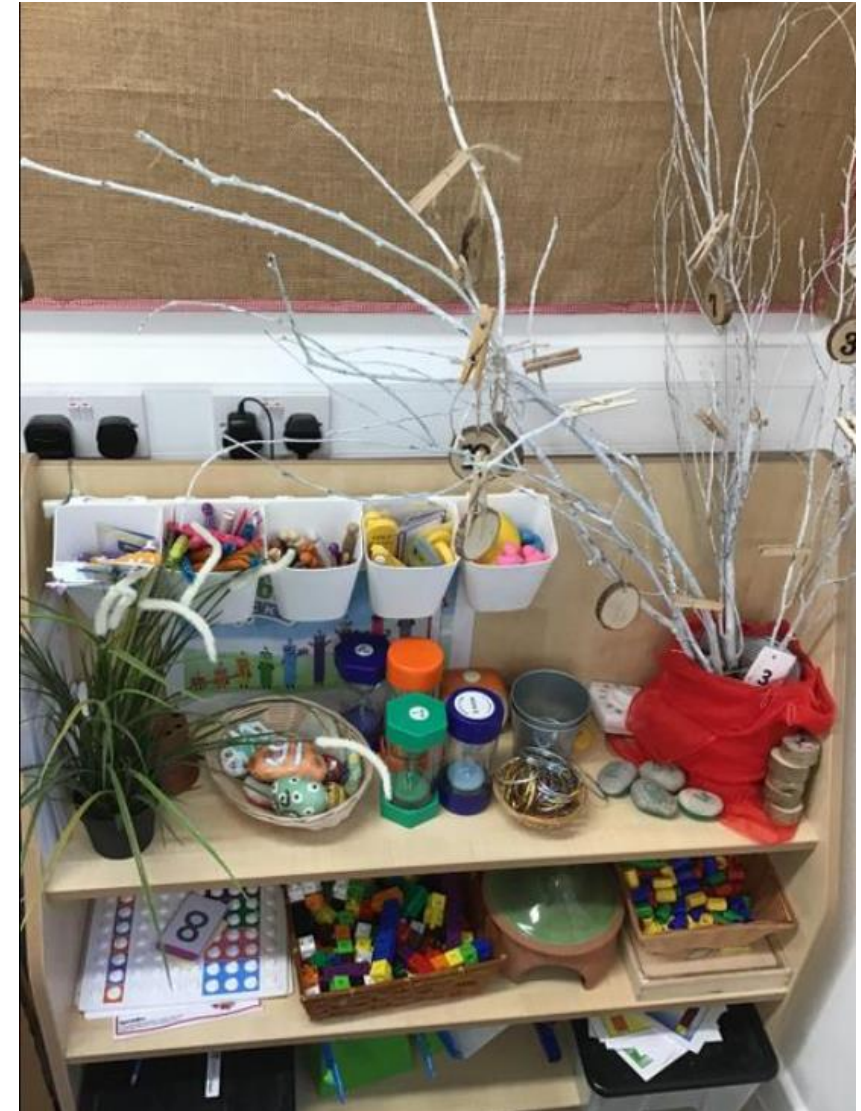
By the end of Reception, children at the expected level of development will:

- have a deep understanding of number to 10, including the composition of each number;
- subitise (recognise quantities without counting) up to 5;
- automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

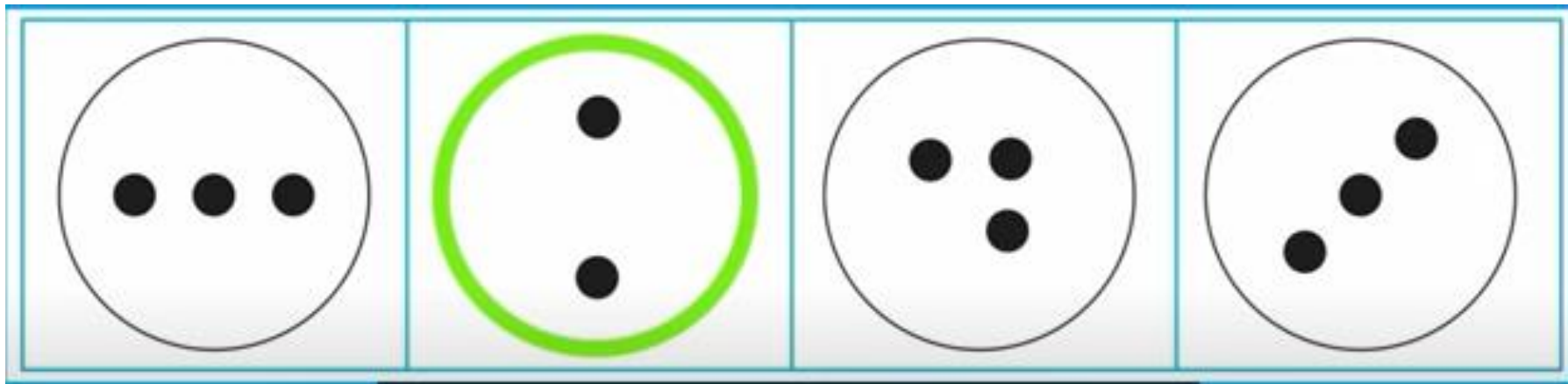
Numerical Patterns

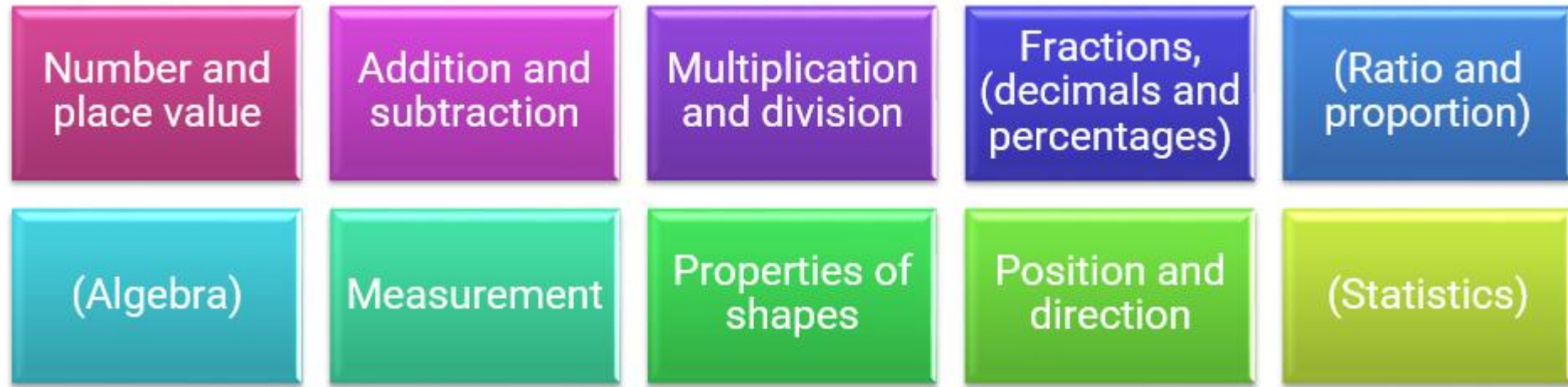
By the end of Reception, children at the expected level of development will:

- verbally count beyond 20, recognising the pattern of the counting system;
- compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.



Subitising is **the ability to instantly recall the number of objects or images without needing to count them individually** and it is an important skill for young children to practise and develop.





Maths Curriculum

- Hertfordshire Essential maths is followed throughout the school.
- This a spiral curriculum which builds on learning from previous year groups.
- Each lesson will contain 'destination questions' which are targeted at children who are working at the expected level of development.
- Teachers adapt challenges 1, 2, 3 to support all children within the class.
- The focus in on 'mastery and depth' of each year groups objectives and not to move onto the next year group objectives.

So what is Mastery....?

- Teaching maths for mastery involves employing approaches that help pupils to develop a deep and secure knowledge and understanding of mathematics at each stage of their learning.
- By the end of every school year or Key Stage, pupils will have acquired a deeper understanding of the mathematical facts and concepts they've been exposed to, equipping them to move on confidently and securely to more advanced material.

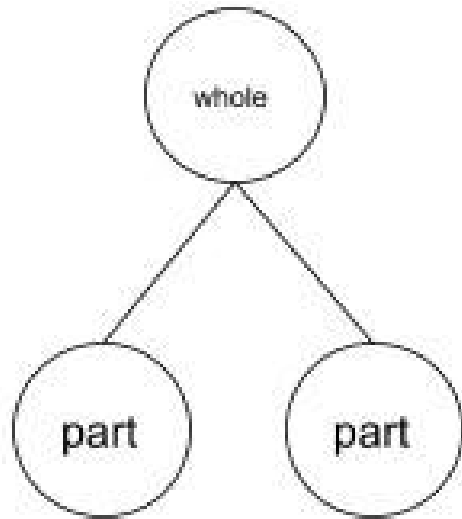


Pictorial

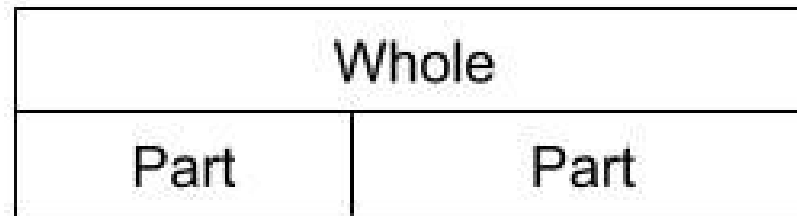
We use images to represent the part, whole model:

‘Susan had 10p. She gives 6p away. How much does she have now?’

‘Susan has 22 sweets. Her friend gives her 7 more. How many does she have now?’



cherry diagram

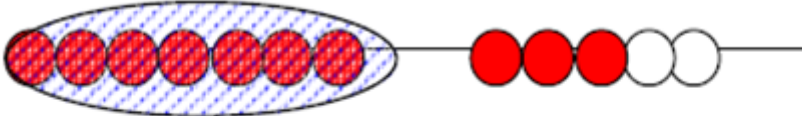


Bar model

Abstract

- We teach children written calculations in line with our School Calculation Policy, which is available on our website.

Bead string:



$7 + 5$ is decomposed / partitioned into $7 + 3 + 2$.
The bead string illustrates 'how many more to the next multiple of 10?' (children should identify how their number bonds are being applied) and then 'if we have used 3 of the 5 to get to 10, how many more do we need to add on? (ability to decompose/partition all numbers applied)

Maths teaching and learning in school

- Daily maths lessons
- Adult-led learning (guided opportunities or small group work)
- Child-led learning (independent/paired work)
- Fluency sessions 2/3 times per week
- Times table fluency session 2 times per week
- Maths games
- Online platforms- Numbots, TT Rock Stars

Noticing and talking about maths

I notice that ...
...is the same as ...
...is different to ...
It reminds me of ...
I think that ...
I know that ...

What do you notice?

What does that remind you of?

Its important to recognise that maths is not only about finding a single answer.

Describing, comparing, classification including sorting, looking for patterns and recognising groups, interpret numbers in context and recognising the value of numbers are key areas and can be so easily supported through talk.

Maths everywhere

Reception Maths Everywhere – Meal Times

Provide children with knives, forks and plates.

Ask questions such as:

- Have we got enough knives for every person?
- Are there more plates than bowls?

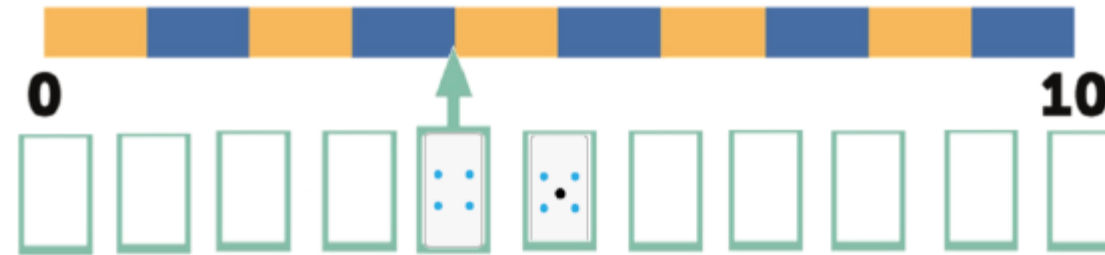


Ask children to help you serve food (which isn't hot).

- Here are the *sandwiches*. Share them out so that everybody has the same number.
- How did you know that everyone has the same amount?
- Can we share these grapes out equally?
- What about the carrot sticks?



Example:



I can see the arrow is pointing to 4.

I know that 4 is between 3 and 5.

one fewer than 4 is 3.

I can show one more than 4 is 5 by adding one more dot.

more less fewer between

Your turn:



The arrow is pointing to _____.

_____ is between _____ and _____.

One fewer than _____ is _____.

One more than _____ is _____.



Provide bench marks and consider values in context helps children place a value on number.

How many steps in a day?

Compare the height of a person to the height of a door

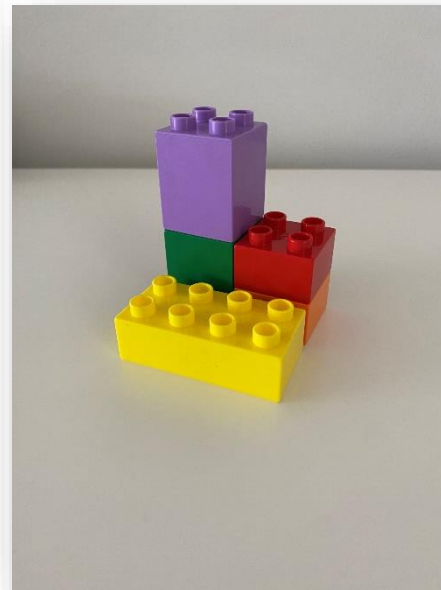
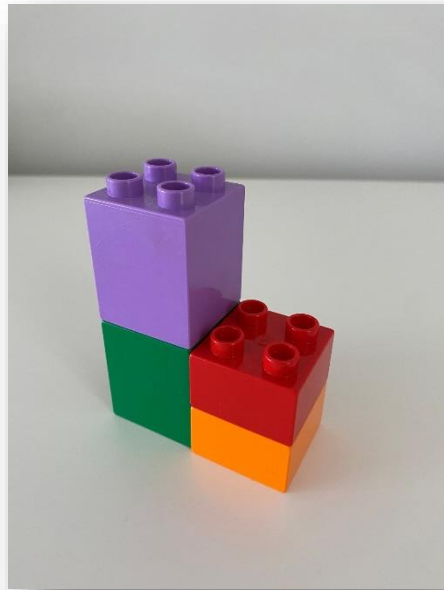
Estimate how many beans are in a dish

Children's interests



What do you notice?

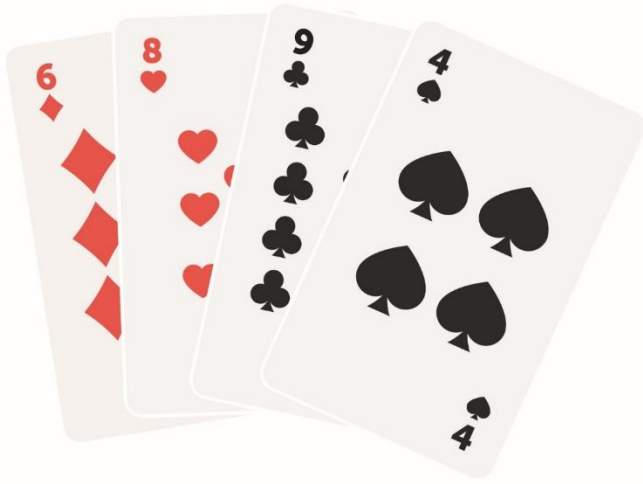
What's the same?



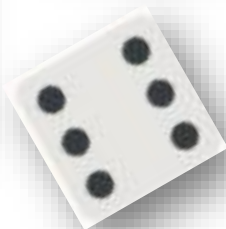
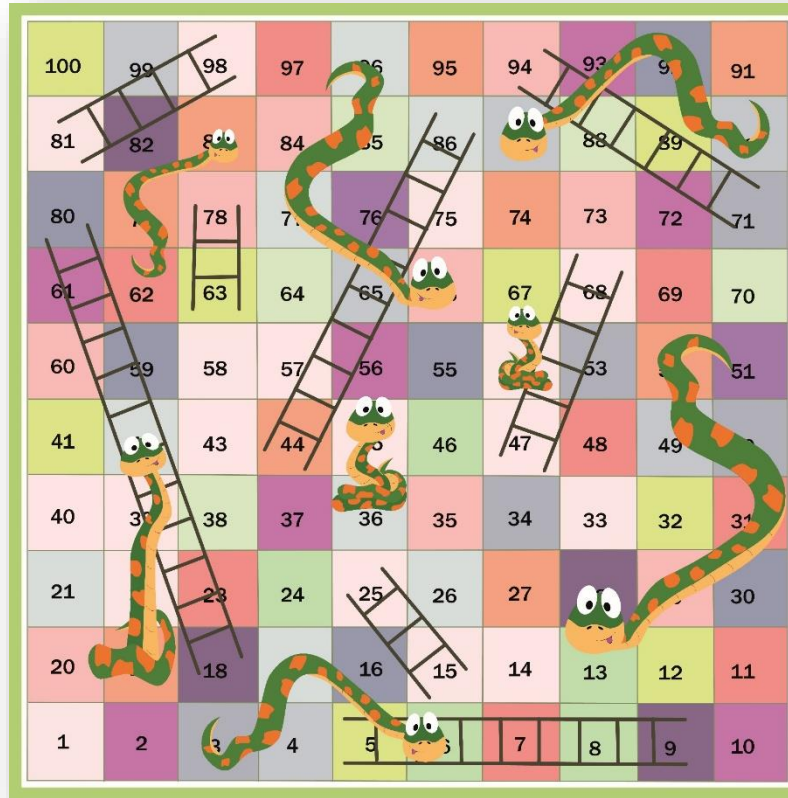
What's different?

Songs to sing

- <https://www.bbc.co.uk/teach/school-radio/nursery-rhymes-songs-index/zhwdgwx>



Playing games



Try this game

<https://www.youtube.com/c/HertsforLearningESSENTIALmaths/videos>

You will need:

- Paper, pens, dice

How to play:

- Draw 4 tens frames
- Roll the dice and choose where to place your dots
- You can't split the number across the tens frame
- First to fill the tens frame wins that frame

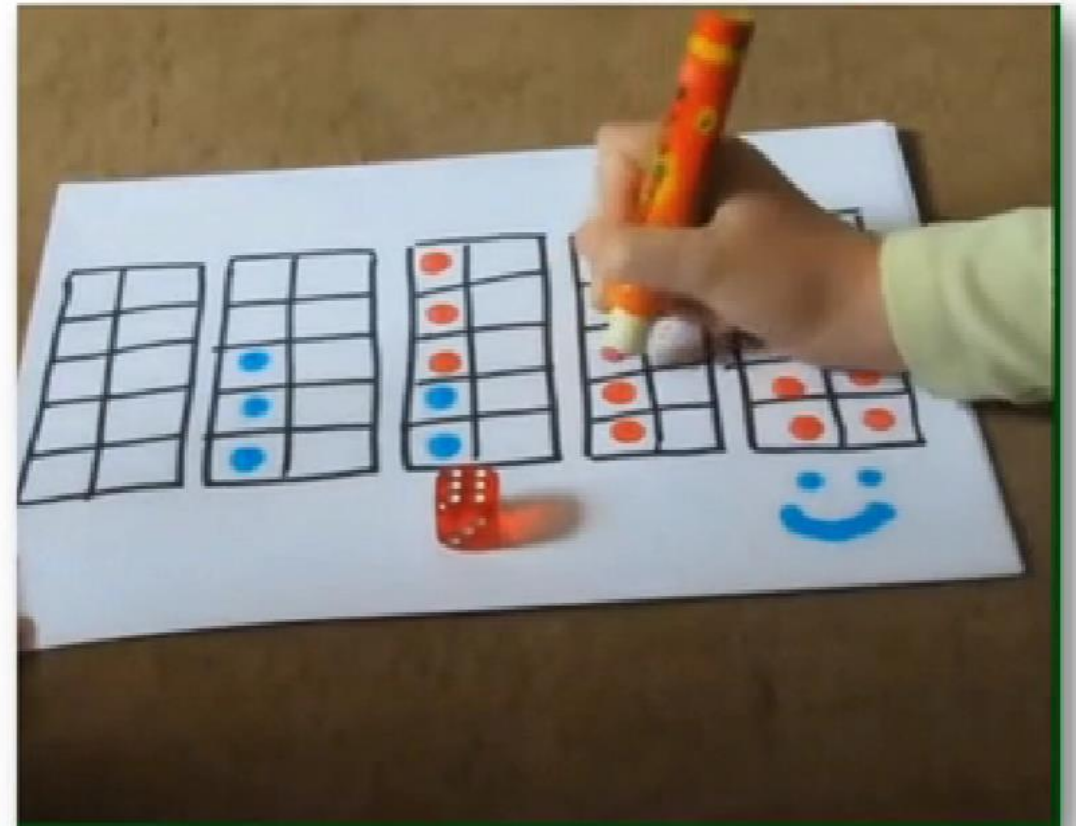
This game rehearses:

- Subitising, number recognition, pattern, number bonds,

Adaptations:

Taking away, 10p's to make a £1, tenths to make whole ones in the frames.

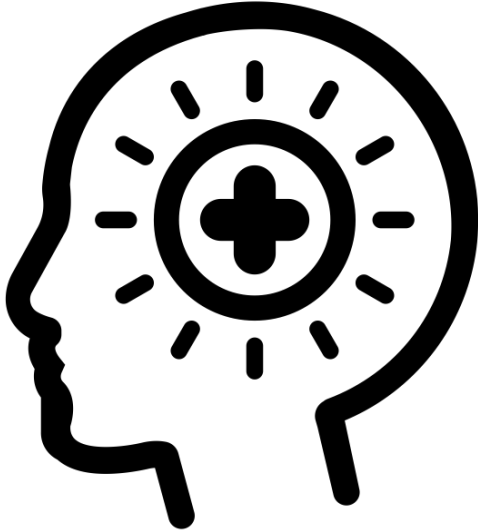
Games to play – Make 10



Maths online

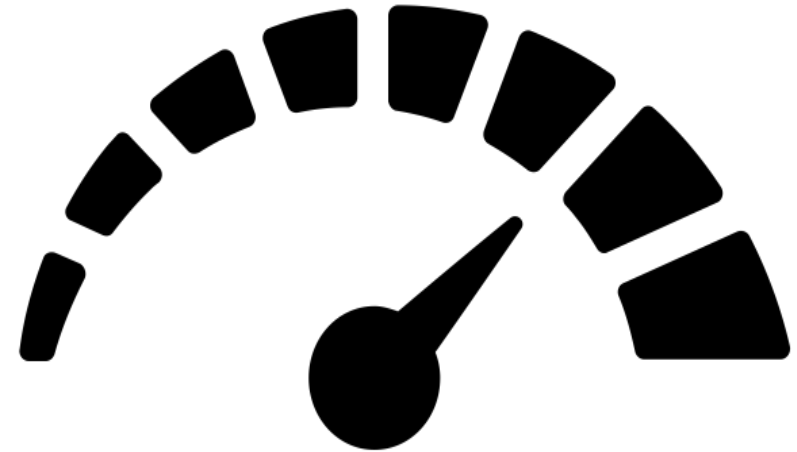
- Numbots
- TT Rock Stars
- <https://www.youtube.com/c/HertsforLearningESSENTIALmaths/videos>

Our role



Be positive

Everyone should be positive about maths
Negative attitudes towards maths stemming from our own schooling can impact our children
It is something that can be learnt rather than something we are born with or without



Value thought over speed

Recalling quickly doesn't mean better
Focus on slowing down and focus on how things are connected

Mathematical interactions at home

- Notice- everyday situations, independent play and games
- Clarify- before jumping in- they may be on a different line of enquiry
- Ask questions – open and closed
- Give time to think – at least 15 seconds to think about an answer
- Take time to listen – fascinating answers! Develop mathematical thinking over time.



A focus on

Times Tables and number facts

Times tables

Year 1:

- count in multiples of twos, fives and tens
- solve simple multiplication and division using objects, pictures and arrays with support

Year 2:

- count in steps of 2, 3, 5 and 10
- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables

Year 3:

- count from 0 in multiples of 4, 8, 50 and 100
- recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

Year 4:

- count in multiples of 6, 7, 9, 25 and 1000
- recall multiplication and division facts for multiplication tables up to 12×12

Reception	
Spring and Summer	Count in 2s up to 24. Count in 5s up to 60. Count in 10s up to 100.
<u>Ideas to support learning:</u> • Count pairs of objects • Count straws bundled in tens • Sing counting songs • Pictorial representations on display • Numbots: www.numbots.com	

Year 1	
Autumn 1 and 2	Count in 2s up to 24, linking with even numbers and supporting doubles. Count in multiples of 10 in order up to 120.
Spring 1 and 2	Focus on counting in multiples of 5 up to 60, linking with knowledge of counting in 10s. Continue to develop fluency of counting in 2s and 10s.
Summer 1	Count in multiples of 10, 2 and 5 in order with growing fluency.
Summer 2	Count in multiples of 10, 2 and 5 in order fluently.
<u>Ideas to support learning:</u> • Count pairs of objects • Count straws bundled in tens • Sing counting songs • Hundred square • Number lines • Pictorial representations on display • Numbots: www.numbots.com	

What is a times table / multiplication table?

Multiplication table

A list of multiples of a particular number, typically from 1 to 12.

Oxford English Dictionary online

$$1 \times 3 = 3$$

$$2 \times 3 = 6$$

$$3 \times 3 = 9$$

$$4 \times 3 = 12$$

$$5 \times 3 = 15$$

$$6 \times 3 = 18$$

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Can you see this one
group of three?

This is showing $1 \times 3 = 3$

Learning a times table



$$1 \times 3 = 3$$

1 group of 3 is
worth 3



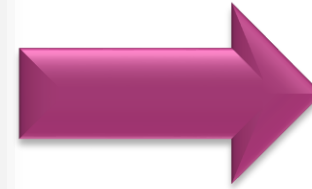
$$4 \times 3 = 12$$

4 groups of 3 is
worth 12

1, 2, 3,
4, 5, 6,
7, 8, 9,
10, 11, 12...

Learning a times table

$1 \times 3 = 3$
 $2 \times 3 = 6$
 $3 \times 3 = 9$
 $4 \times 3 = 12$
 $5 \times 3 = 15$
 $6 \times 3 = 18$
 $7 \times 3 = 21$
 $8 \times 3 = 24$
 $9 \times 3 = 27$
 $10 \times 3 = 30$
 $11 \times 3 = 33$
 $12 \times 3 = 36$



Multiplication and counting

Speaking Frame - Counting in Multiples

We are using _____ to count in multiples of

The multiple of is

This could also be + + + ...

groups of is

This is also x =



Multiplication and counting

Speaking Frame - Counting in Multiples

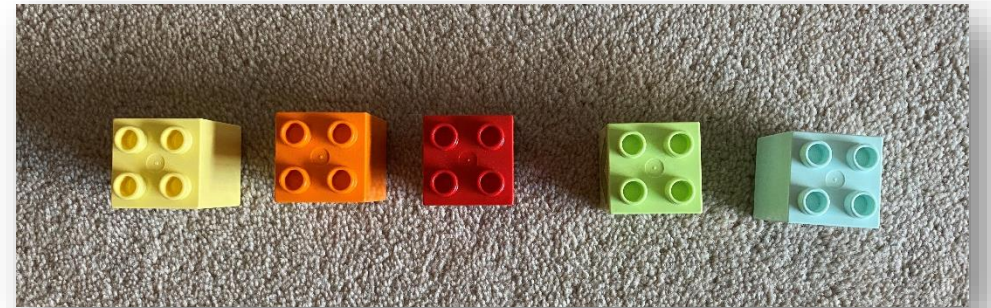
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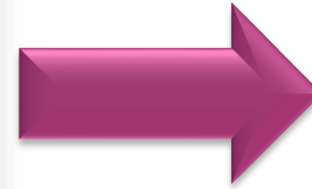
groups of is

This is also x =



Learning a times table

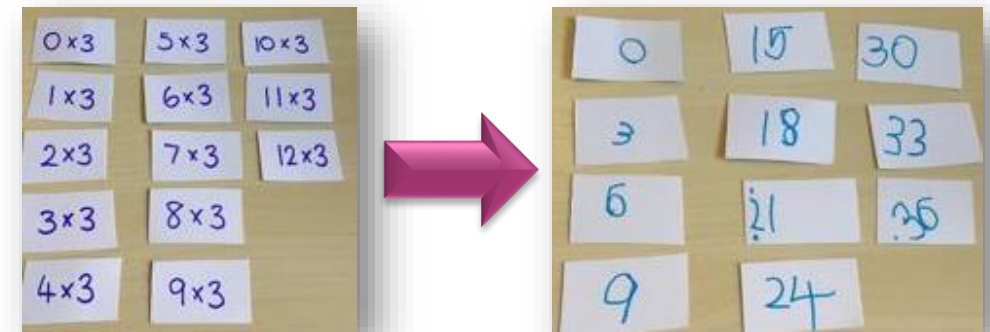
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 $10 \times 3 = 30$
 $11 \times 3 = 33$
 $12 \times 3 = 36$



Games with the cards

On your own or with an adult...

- In order first, with the list still visible
- In order, without the list
- Starting with the product, give the fact
- Out of order – choose 'easiest' first
- Out of order – less choice of order
- Speed round





Thank you

References

- Department for Education (2021) *Statutory framework for the early years foundation stage: setting the standards for learning, development and care for children from birth to five*. Available at:
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