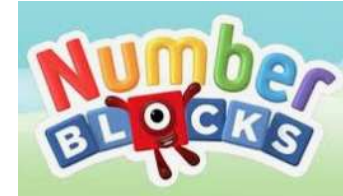
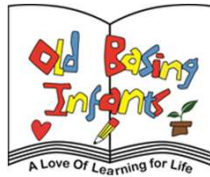


## Early Maths: How can you support at home?



- Point out examples of number in familiar environments.
- Spotting and discussing patterns and shapes.
- Using and discussing measures at home.
- Counting by rote – chanting, number rhymes, songs and stories (Check they are saying the right numbers – not eleven, twelve, thirty, forty – make sure that the ‘teen’ is well pronounced)
- Learning the days of the week and the months of the year.
- Using ordinal numbers (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> etc...)
- Combining groups (augmentation) of objects and look at the effect - more, amount getting bigger, adding, addition.
- Removing objects from a group (reduction) and looking at the effect – fewer, amount getting smaller, taking away, subtraction.
- Tell me: 1 more or 1 less
- 1-1 correspondence: What about when they can't touch it? How reliable is their object counting – with pictures, everyday objects they can't touch (windows on buildings etc..), sounds (coins in a jar)



## Supporting Early Maths at home – Using fingers and playing games

- Using their fingers: They have 10 fingers on their hands (This is why children always know that  $5+5=10$ !) This is the best resources they have and carry around with them at all times.
- Teach them how to use their fingers for counting
  - by touching to encourage accurate 1-1 correspondence (this is different from rote counting)
  - giving a sense of the size of a number.
  - counting out the spaces moved in a board game
- Board games also give children a good reason to learn to 'subitise', too – This is 5. You don't have to count that it's 5.
- Number lines:
  - 'Find me 8' Does the child know where to look? Can they do this without counting from the start?
  - Spotting visual patterns on a number line: a set of numbers that start with the digit 1.



Spotting patterns is at the heart of mathematical thinking

## Addition and Subtraction – How can you help at home?

- Subitising – Noticing numbers: “I can see 4 there and 3 there. 4 and 3 makes 7.”
  - Knowing pairs of numbers that go together to make all numbers up to 10 – number bonds.
  - Composition of numbers and objects – 5 is made out of 3 and 2, so  $5 - 3$  must be 2. If you know that  $5 + 3 = 8$ , What else do you know?
- Use cubes or objects. Shake them in your hand and throw them on a surface. What can you see? How many are there? How do you know? If I take away \_\_\_ how many will be left? Check if your child is still counting or if they are subitising. Encourage them to talk you through what they notice. If they are unsure, model this by doing it yourself.

From any 2-digit numbers:

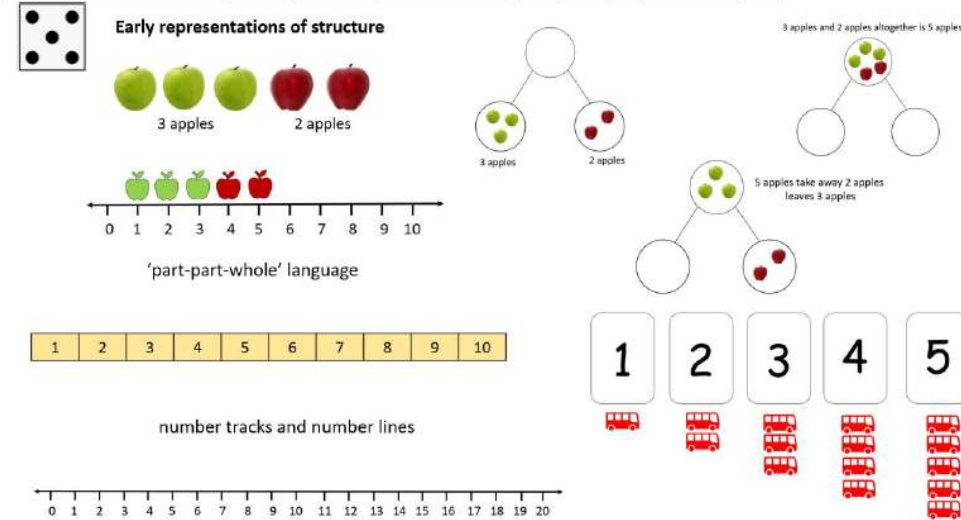
- What is one more than? What is 1 less than? (especially with ‘bridging’ numbers such as 39, 59 etc... and 1 less than tens numbers such as 50, 70)
- Once they can do the above, what about adding/subtracting 2 mentally? Can they explain what to do?
- Add/sub 10 and multiples of 10. Which parts of the number are staying the same and which parts are changing?
- Play board games using multiple dice or skittles to knock down. Can they combine the 2 numbers without counting on? If not, explain how you know.

# Key Facts – Year R Addition and Subtraction

## Year R: Early Calculation

- Be able to recognise numbers within numbers up to 10 (so 7 is made from 5 and 2)
- Know number bonds to 5
- Use the language of ‘more’ and ‘fewer’ to compare two sets of objects.
- Find the total number of items in two groups by counting all of them.
- Say the number that is one more than a given number to 10.
- Say the number that is one less than a given number to 10.
- Recognise when a quantity or items is reduced or increased by one.
- Subtract a quantity within 10. Say how many are left by counting (or counting back)
- **Double small numbers (e.g. the amount shown on two dice )**
- **Share objects equally, or fairly, by putting them in equal sized groups.**

Mathematical models and images to support conceptual understanding underpinning key facts in Reception



### Number Facts: Number and place value

- Know the sequence of counting in ones from 1 to 20 (by rote)
- Recognise numerals 0 - 9
- Accurately count up to 20 objects
- Place numbers to 20 in order
- Verbally count beyond 20 by patterning
- Recognise even and odd numbers up to 10

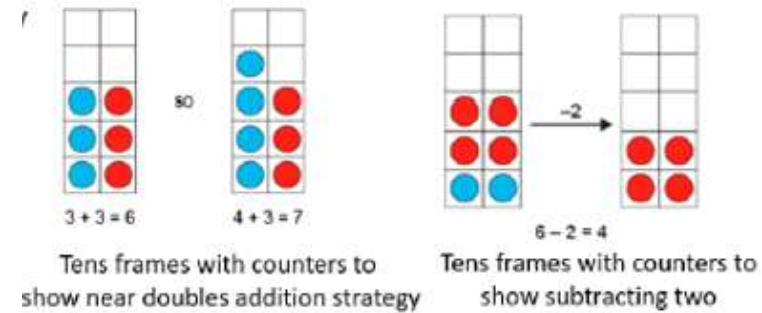
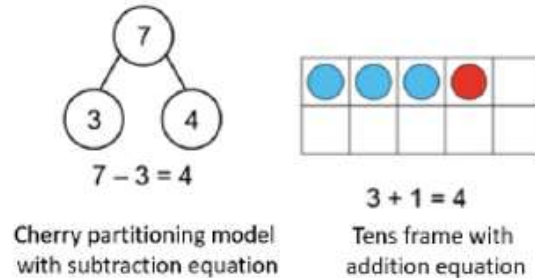
# Key Facts – Year 1 Addition and Subtraction

## Year 1: Calculation Facts

- Know the number bonds and related subtraction facts for all numbers to 5

For example:

- $4 + 0 = 4$     $4 - 0 = 4$
- $3 + 1 = 4$     $4 - 1 = 3$
- $2 + 2 = 4$     $4 - 2 = 2$
- $1 + 3 = 4$     $4 - 3 = 1$
- $0 + 4 = 4$     $4 - 4 = 0$

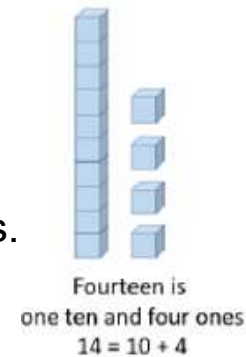


- Know the number bonds for all numbers to 10 and the related subtraction facts
- Know the number bonds for all numbers to 20 and the related subtraction facts

For example

- $10 + 2 = 12$     $12 - 2 = 10$
- $9 + 3 = 12$     $12 - 3 = 9$
- $8 + 4 = 12$     $12 - 4 = 8$

- Recognise that 'teens' numbers comprise one ten and some ones.
- Say one more / less than any number up to 20.



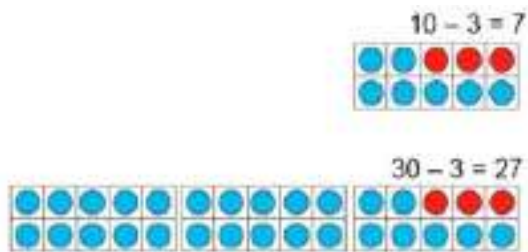
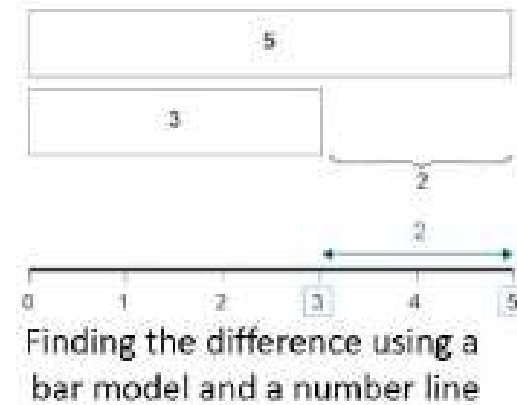
+	0	1	2	3	4	5	6	7	8	9	10
0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10
1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	
2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8		
3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7			
4	4+0	4+1	4+2	4+3	4+4	4+5	4+6				
5	5+0	5+1	5+2	5+3	5+4	5+5					
6	6+0	6+1	6+2	6+3	6+4						
7	7+0	7+1	7+2	7+3							
8	8+0	8+1	8+2								
9	9+0	9+1									
10	10+0										

Addition facts within 10

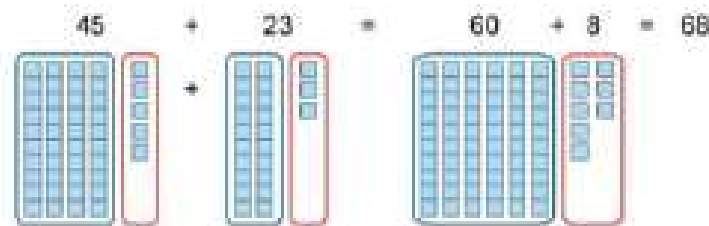
# Key Facts – Year 2 Addition and Subtraction

## Year 2: Early Calculation

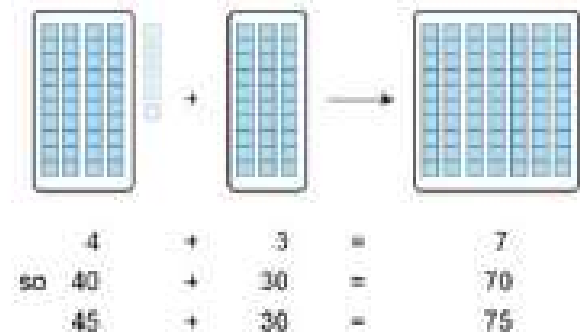
- Know number bonds and related subtraction facts to 20.
- Derive number bonds to 100 using multiples of 10, relating this to known number bonds to 10 (from Y1).
- Add and subtract numbers to 100 using informal methods, manipulative resources and visual representations.
- Count in steps of 10 from any number.



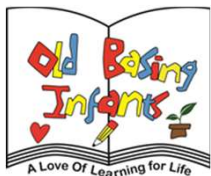
Tens frames with counters and number lines to support subtracting ones from a multiple of 10



Base 10 material and equations to support adding 2 two-digit numbers



Base 10 material and equations to support adding a multiple of 10



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## Multiplication – How to help at home

### Place Value and Number Facts: Counting

By the end of KS1: Children should be able to recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.

- Relate counting in steps of 2s, 3s, 5s and 10s from 0 to multiplication.
- Use fingers to help support the counting:  $4 \times 5$  is four steps of counting in 5 (5,10,15,20). They will drop the fingers eventually and if they don't, who cares?!
- There is nothing wrong with reciting times tables but it is best if they can go further and use their counting to find related facts. If I know that  $3 \times 5 = 15$ , what else do I know?

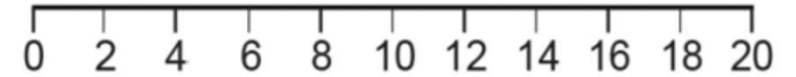
This is what we mean by reasoning.

Spotting Patterns – 2, 10, 5 derive. Using known facts to derive other facts rather than relying on pure recall.  $4x$  is the same as double  $2x$ .  $8x$  is the same as double  $4x$

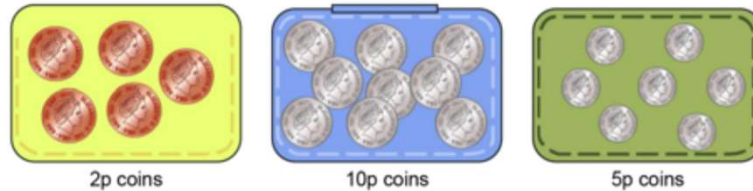
# Key facts – Key Stage 1: Multiplication and Division

## Year 1:

- Know the sequence of counting in multiples of 2.
- Know the sequence of counting in multiples of 10.
- Know the sequence of counting in 5s.



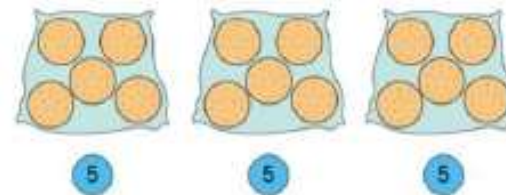
Number line to support counting in multiples of 2



Counting in 2s , 5s and 10s in the context of money

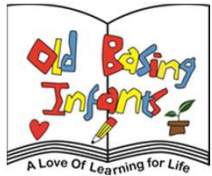
## Year 2:

- Recognise odd and even numbers.
- Know the 2x, 5x and 10x times table and the related division facts.
- Know the sequence of counting in multiples of 3.



Three bags of five biscuits with three 5-value counters to support skip counting for  $3 \times 5 = 15$





## Multiplication and Division – How to help

- Grouping/sharing objects into 2s, 3s, 5s and 10s.
- Count from 0 in steps of 2, 5, 10 (and 3 – Year 2) Try to do this **every day** as much as possible (going up/down stairs, brushing teeth, in car, walking to school etc..)
- Link children's counting in steps to times tables – with visuals as much as possible (such as counting peas/toys etc)
- If I know this, what else do I know? Using derived facts.
- Relating division facts to multiplication facts – If  $3 \times 5 = 15$ ,  $15 \div 5 = 3$ .
- Ask questions such as 'What if I have 1 more? and What if I have 1 more lot of \_\_\_?' How is this different?

## Other Areas of Maths

- Money – Showing children money. Looking at the different types of coins. Making different amounts and adding coins of the same quantity. Think about how often your children see you using money now that lots of payments are contactless.
- Measures – cm/m, g/kg, ml/l.
- Time – Telling the time to o'clock, half past, quarter past/to and 5 minute intervals by the end of Year 2.
- Shape – 2d and 3d: Properties of shape and comparing shapes.
- Position and Direction – Left and right, turning quarter, half and three-quarter turns clockwise or anti-clockwise.
- Fractions – Of shapes, amounts and measures.

**Vocabulary and Language**: The language of Maths can be a real barrier for some children. Many maths terms mean something different in everyday life, such as: half, share, factor, prime, take-away, operation...to name but a few. It is important that we take the time to explain the mathematical meanings of these words to increase understanding and to model their use.

To do this, provide a running commentary to model the vocabulary – “it looks as though you’re doing this”. Correct children by repeating what they have said using the correct vocabulary modelled back to them.

# Useful websites – Early Maths

- [BBC iPlayer – Numberblocks](#) – We use the Numberblocks in our daily learning as they are great images to develop number sense.
- [Jack Hartmann maths - Bing video](#) – We use Jack Hartmann videos to count to 100 every day as well as learning about other maths areas.
- [Early Years Foundation Stage Activities \(maths.org\)](#) – Activity ideas to help teach your child about Number, Measure, Shape and Space.
- [What is subitising and WHY is it so important in young children's maths? – YouTube](#) – A video about subitising and how you can support this at home (.).
- <https://www.youtube.com/watch?v=KWMiOW2Qcrk> – This video has lots of examples of images that can be used if your child is struggling with subitising or recognising the value of number.

## Useful Websites – KS1 Maths

[BBC iPlayer – Numberblocks](#) – Brilliant to help support counting and times tables knowledge as well as place value in larger numbers.

[KS1 Maths free game - Karate Cats - Primary school times tables, division, shapes, fractions - BBC Bitesize](#) – A great way for children to practise their Maths skills in a game format.

[ictgames || html5 Home Page](#) – Loads of different free games to play to apply mathematical knowledge in fun ways.

[Primary Students \(maths.org\)](#) – Nrich is a wonderful website with activities and games that your child can play with you or by themselves.

[Log In to EducationCity](#) – Use your child's log in to access games and activities that relate to their learning in class for that week.

[Hit the Button - Quick fire maths practise for 6-11 year olds \(topmarks.co.uk\)](#) – A great way to practise rapid recall of number facts.