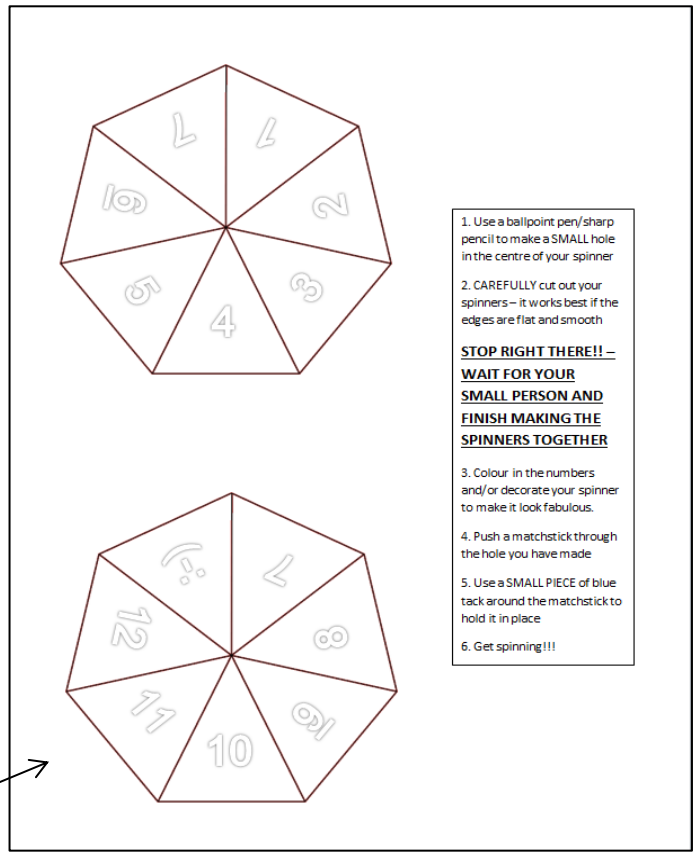
Welcome!!

While you are waiting……..

- Count out 150 matchsticks and grab a few elastic bands



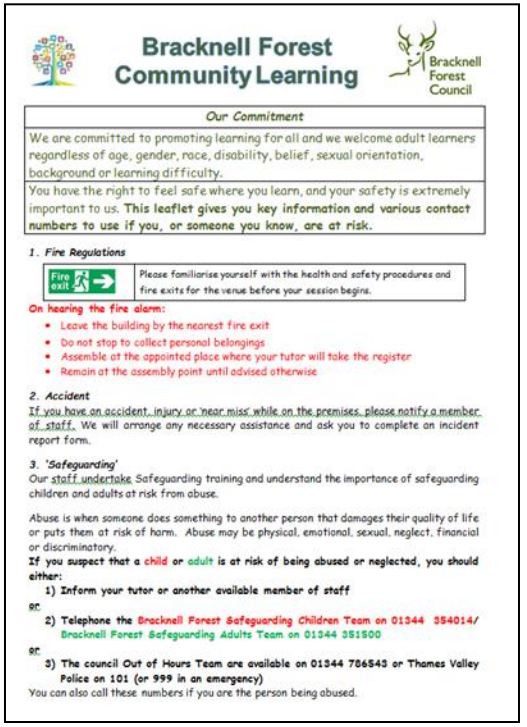
- Find your spinner template
- Use your pen to make A SMALL hole in the centre of each spinner
- Cut the spinners out BUT DON'T GO ANY FURTHER
  (your child will enjoy making the spinner themselves rather than you doing it for them)

Bracknell Forest Community Learning Team

Bringing learning to life

Heather Williams

Heather-L.Williams@bracknell-forest.gov.uk



Bracknell Forest Community Learning

Bracknell Forest Council

Our Commitment
We are committed to promoting learning for all and we welcome adult learners regardless of age, gender, race, disability, belief, sexual orientation, background or learning difficulty.
You have the right to feel safe where you learn, and your safety is extremely important to us. **This leaflet gives you key information and various contact numbers to use if you, or someone you know, are at risk.**

1. Fire Regulations

Fire exit	Please familiarise yourself with the health and safety procedures and fire exits for the venue before your session begins.

On hearing the fire alarm:

- Leave the building by the nearest fire exit
- Do not stop to collect personal belongings
- Assemble at the appointed place where your tutor will take the register
- Remain at the assembly point until advised otherwise

2. Accident

If you have an accident, injury or 'near miss' while on the premises, please notify a member of staff. We will arrange any necessary assistance and ask you to complete an incident report form.

3. 'Safeguarding'

Our staff undertake Safeguarding training and understand the importance of safeguarding children and adults at risk from abuse.

Abuse is when someone does something to another person that damages their quality of life or puts them at risk of harm. Abuse may be physical, emotional, sexual, neglect, financial or discriminatory.

If you suspect that a child or adult is at risk of being abused or neglected, you should either:

1) Inform your tutor or another available member of staff

or

2) Telephone the Bracknell Forest Safeguarding Children Team on 01344 354014/ Bracknell Forest Safeguarding Adults Team on 01344 351500

or

3) The council Out of Hours Team are available on 01344 786543 or Thames Valley Police on 101 (or 999 in an emergency)

You can also call these numbers if you are the person being abused.

Calculation in Year 3

The Plan:

1. To explain the importance of using equipment and models in maths
2. To explain the link between multiplication and division and how your child is building their calculation skills, especially their understanding of DIVISION
3. To work with your child to make and play a 'Remainders' board game
4. To have used a practical 'grouping' method to explore division with your child

…..and……

To build lots of other skills as we work together (following school values)

"You didn't give up, even though it was hard for you……"

"That's brilliant! – thank-you for listening so well"

"I liked the way you waited until it was your turn……"

The purpose of this session is to provide information and experiences that will help you to support your child's learning. However……
One size **doesn't** fit all!!

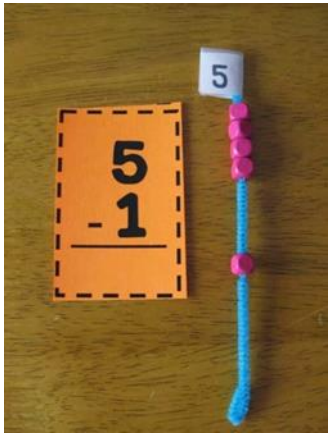
Each parent has different knowledge, skills & experiences – if any of the topics covered are familiar to you, please feel free to chip in and share – we can learn a lot from each other!

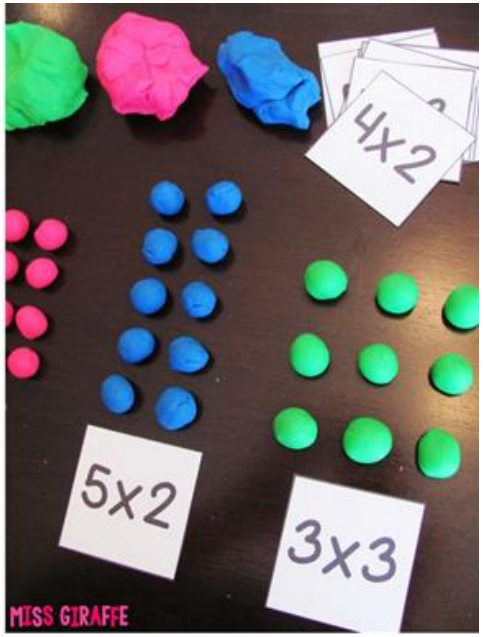
Questions & Suggestions? – *please use the handy sheet provided to jot down:*

- questions/things you want to know more about
- notes on things you would like to try out with your child
- any ideas or 'top tips' you can think of

Building Calculation skills

It is essential that children have lots of **PRACTICAL EXPERIENCE** using real objects to help them **UNDERSTAND** rather than just memorise calculation processes.





Take a look -

'The Importance of Concrete'

The White Rose Hub

https://vimeo.com/198328025

The curriculum says:

The 4 calculation skills (addition, subtraction, multiplication and division) need to be taught, constantly practised and most importantly **understood**, if the more formal written methods of calculation are to be used successfully by children.

Practical Experience: Strategies for calculation need to be supported by familiar models and images to ensure understanding.

Purpose: Children need to *understand why* they are doing what they are doing and *know when it is appropriate* to use different methods. If children memorise and practise procedures without understanding, they have nothing to build on when tackling new and harder concepts.

"What operation/ which method should I use to solve this problem?"

"What operation/ which method should I use to check my answer

Number – multiplication and division

Statutory requirements

Pupils should be taught to:

- recall and use multiplication **and division facts** for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- calculate mathematical statements for multiplication **and division** within the multiplication tables and write them using the multiplication (×), **division (÷)** and equals (=) signs
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- solve problems involving multiplication **and division**, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Year 2

Number – multiplication and division

Statutory requirements

Pupils should be taught to:

- recall and use multiplication **and division facts** for the 3, 4 and 8 multiplication tables
- write and calculate mathematical statements for multiplication **and division** using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- solve problems, including missing number problems, involving multiplication **and division**, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

Year 3

Number – multiplication and division

Statutory requirements

Pupils should be taught to:

- recall multiplication **and division facts** for multiplication tables up to 12 × 12
- use place value, known and derived facts to multiply **and divide** mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
- recognise and use factor pairs and commutativity in mental calculations
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

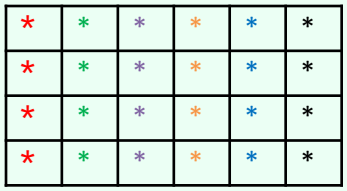
Year 4

Multiplication

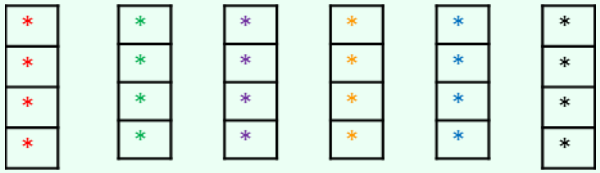
Is the opposite (inverse) of division

Six groups of four make twenty-four

6x4=24



There are six groups of four in twenty-four



24÷4=6

- If I know that six lots of four makes 24 (multiplication fact) it is much easier to see and understand that 24 can be divided into six groups of four (or indeed four groups of six!)

- It is vital to be able to see and experience how this works

- Give your child opportunities to practise multiplying and dividing using real objects

A good grasp of what multiplication is, and quick recall of multiplication facts, makes a huge difference when children learn about division

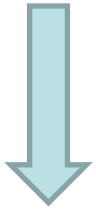
Use any of the activities below to help your child to practise multiplying

- http://www.bbc.co.uk/bitesize/ks1/maths/multiplication/play/popup.shtml
- http://www.wmnet.org.uk/resources/gordon/Bingo%20-%20counting%20v4.swf
- https://www.superteacherworksheets.com/counting/count-by-4s-objects.pdf
- http://www.printactivities.com/Mazes/Math-Mazes/Alien-CountingBy4s.shtml
- http://www.sheppardsoftware.com/mathgames/earlymath/BalloonPopSkip.htm
- http://www.oswego.org/ocsd-web/games/Mathmagician/mathsmulti.html
- http://www.transum.org/Tables/Times_Tables.asp
- www.tablestest.com
- www.mathletics.co.uk
- http://www.coolmath4kids.com/times-tables/math-lines-xfactor-40.html
- http://primarygamesarena.com/Multiplication-Grand-Prix386
- http://primarygamesarena.com/tabletrees2837
- http://www.topmarks.co.uk/Flash.aspx?f=HitTheButtonv11
- http://www.topmarks.co.uk/Flash.aspx?a=activity02
- http://www.mad4maths.com/8_x_multiplication_table_math_game/
- http://www.amblesideprimary.com/ambleweb/mentalmaths/testtest.html
- http://www.sumdog.com/en/parents/
- http://www.coolmath-games.com/0-crazy-taxi-m12/index.html

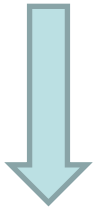
Also look out for 'Percy Parker', 'Steve Storm and the tables of doom' & 'Squeebles'

The road to understanding……

- Concrete (real objects)

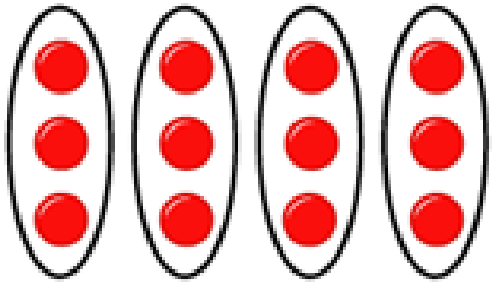


- Models (pictorial representations)



- Abstract (written methods)

Division by 'grouping'



12 ÷ 3 = 4

This represents 12 ÷ 3, posed as how many groups of 3 are in 12?

Exploring division using real objects will make sure that children understand the process they are being asked to do.

÷ is just a symbol we use

What does 'divided by' mean, anyway?

Rather than saying 'what is 12 divided by 3?', we invite children to investigate how many groups of 3 are in 12.
We start with a set of 12 things, and keep removing groups of 3 until there are none left

This is the 'concrete' stage ☺

Grab 12 matchsticks and make groups of 3

How many groups?

Any left over?

Put your 12 matchsticks back together

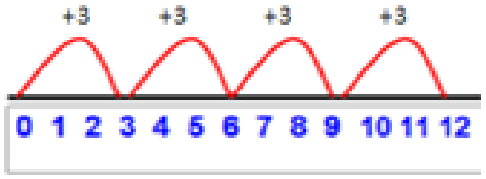
Now, make groups of 5

How many groups?

Any left over?

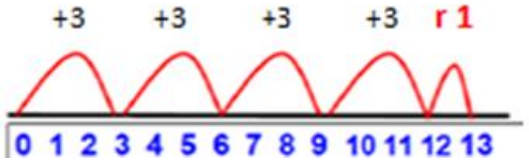
Grouping using a number line: (moving on from concrete)

Children are taught to group from zero in equal jumps of 3 to find out "how many groups of 3 in 12?"



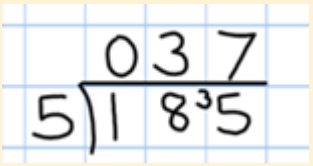
Children are also introduced to the concept of **remainders**, firstly using concrete methods (think matchsticks!!) and then using other representations like number lines:

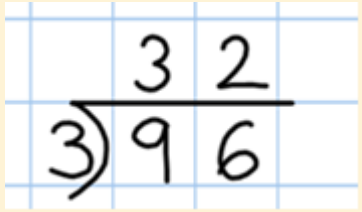
"how many groups of 3 in 13?"

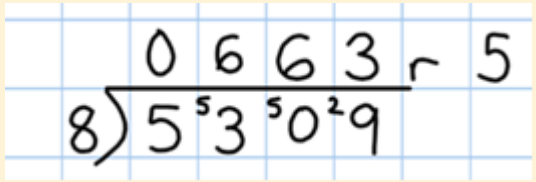


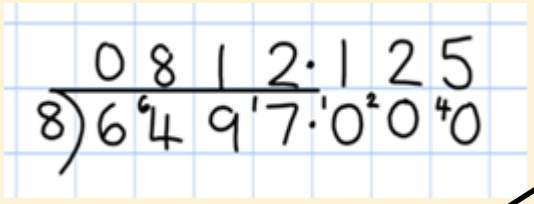
You have a laminated 0-120 number line in your pack – make at home and use with a dry-wipe marker WHEN YOUR CHILD IS READY.

Where does this fit in?

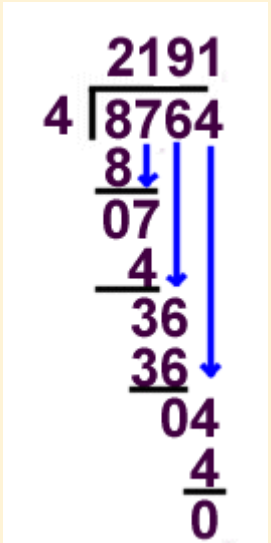








Want to know more? – please ask



Standard written methods such as these are actually the last piece of the jigsaw – only introduced when children securely understand the concept of division, and have had lots of practical experience using different tools, different models, and a variety of their own recordings.

2

Making a division board game with your child

Playing games :

Helps to develop a range of skills:

- Memory skills
- Spatial skills eg: directions
- Planning and anticipation
- Fine motor skills
- Listening skills
- Higher level thinking skills

Your children will also learn:

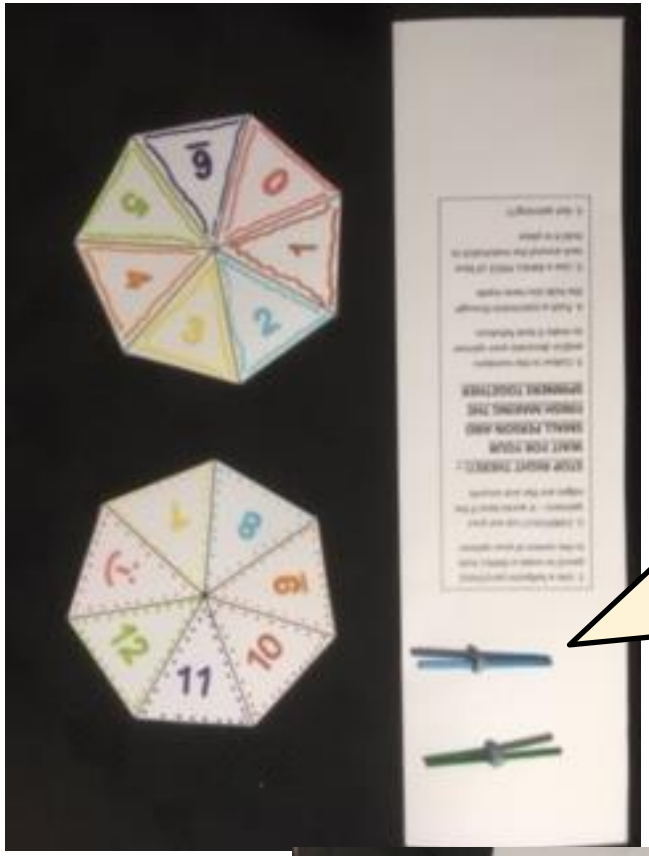
- To be patient
- To lose
- To share
- To take turns
- To concentrate

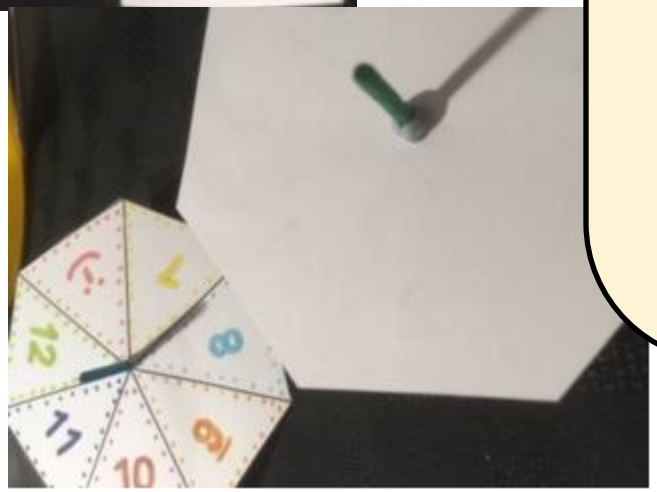
Things to remember when you are playing games:

- Make sure you understand the rules before you start
- Ideally, only play when you know you can have a quiet undisturbed time together
- Play the game more than once
- Don't always let your child win. It is an important social skill to learn to lose!

  [wear your body armour ;-)]
- Talk as you play. A great deal will be learnt from talking things through together.
- ENJOY!!!!

Activity 1 (8 mins)



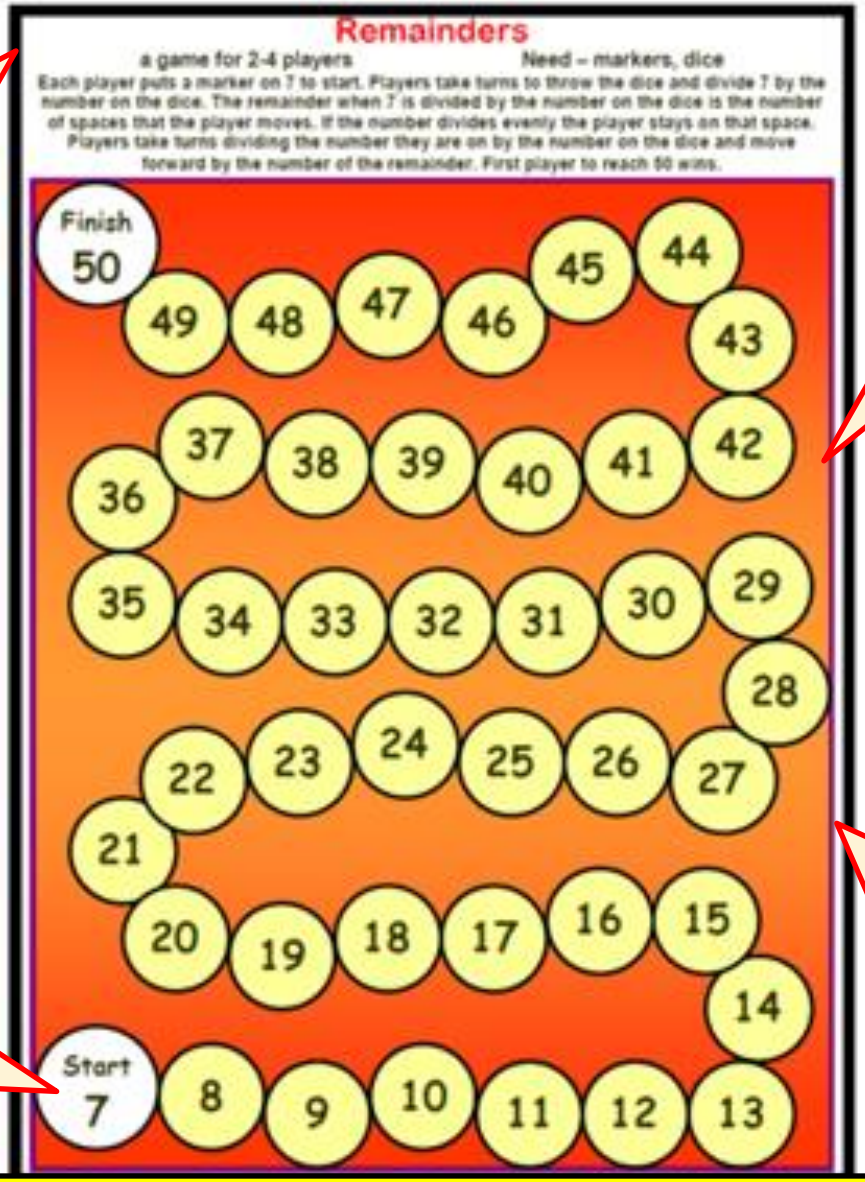


First you need to help your child to make two spinners - get them to colour in the numbers & add patterns if they like, put matchsticks through the holes you made earlier and secure with blue tack

Activity 2 (8 mins)

1. Encourage your child to read the instructions so that they know how to play

2. Choose a coloured counter each and place them on number 7 to start



3. For each turn, you need to check which number your counter is on and pick up the corresponding number of matchsticks

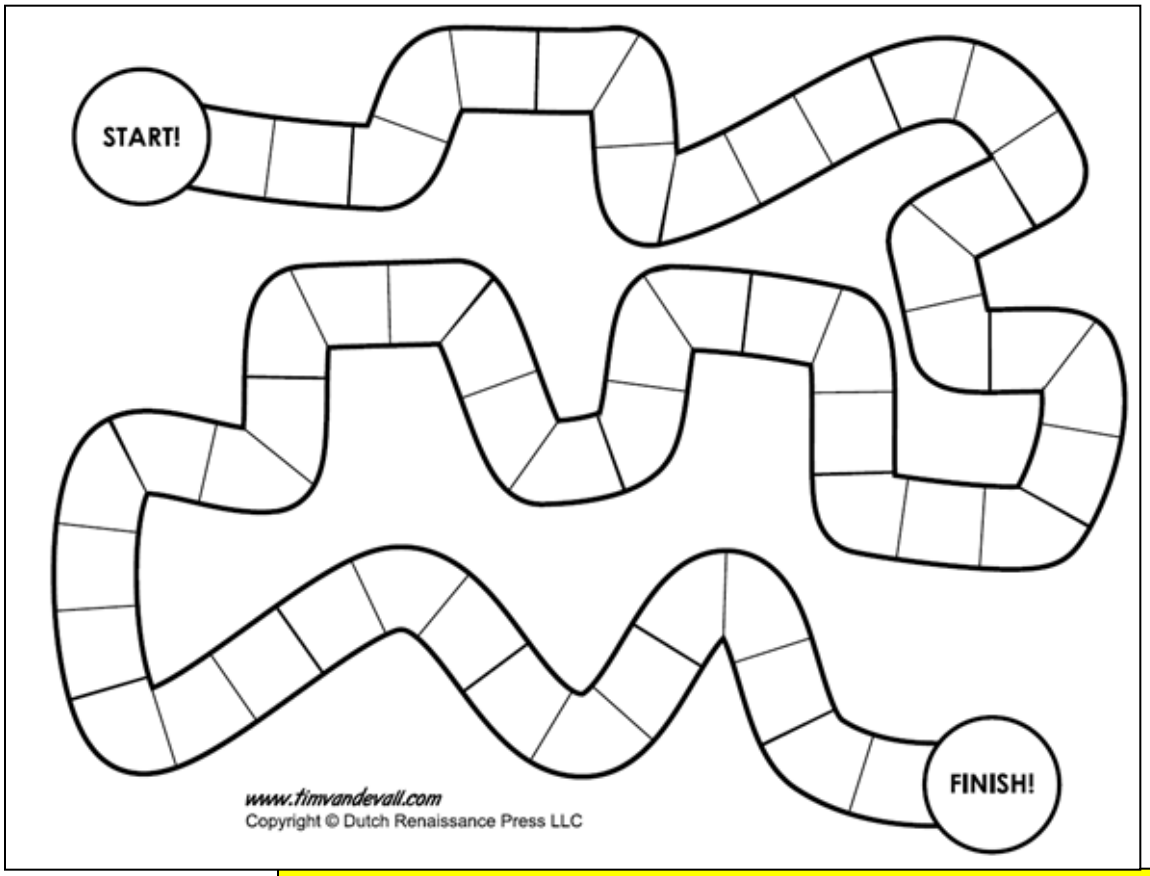
4. Spin your 1-6 spinner to find **the number you need to divide by**. Make groups of this number – are there any left over? If so, this is the number of spaces you can now move forward

Use your 1-6 spinner for this game

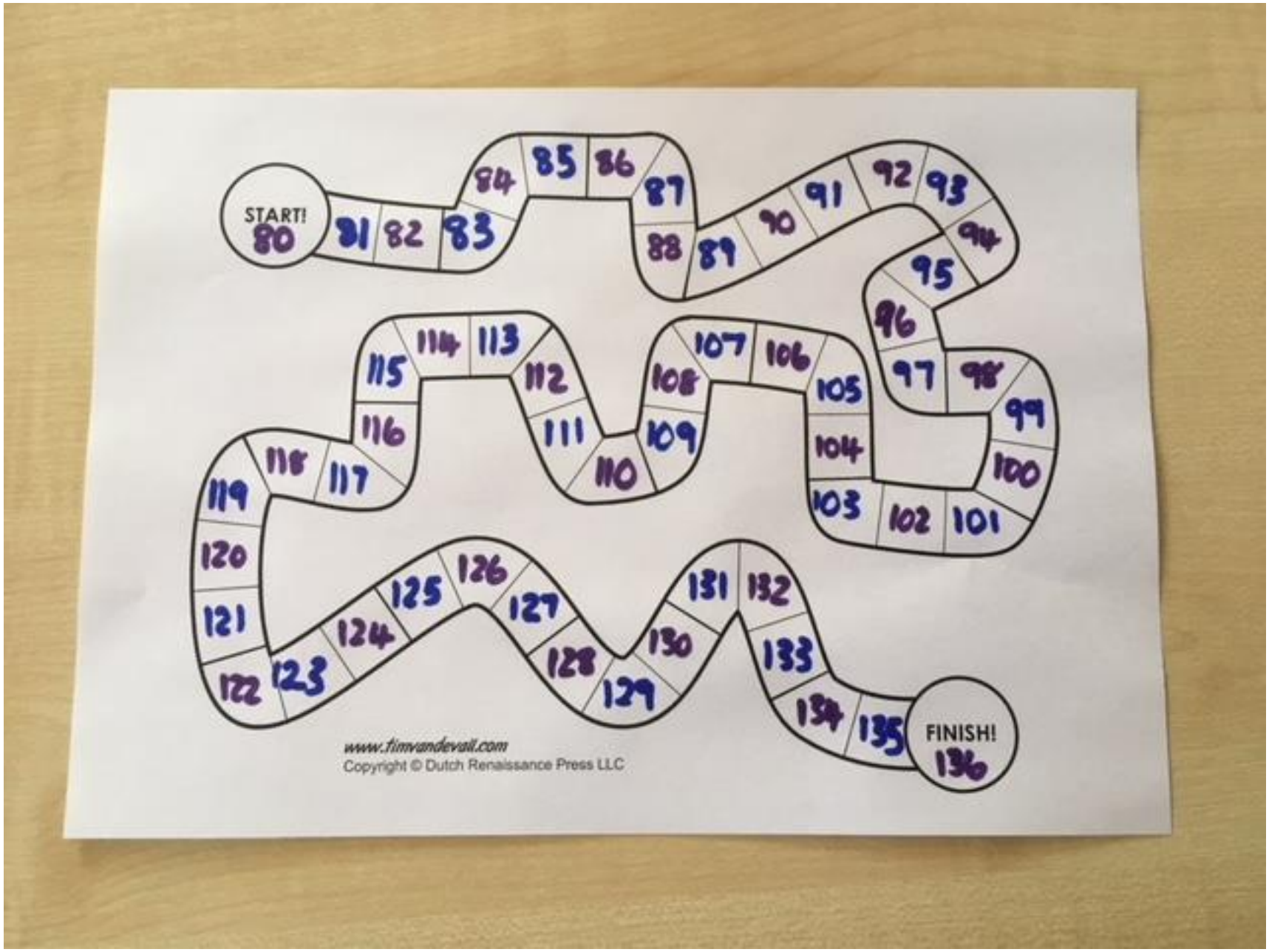
Top tip – make a few bundles of 10 matchsticks, this will help speed up counting out larger numbers during the game

Activity 3 (8 mins)

Now you know how to play, you can make your own version of the game – try putting numbers above 50 on the board and use your 7-12 spinner to select what to divide by.



Use your 7-12 spinner for this game


START!
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3

Other activities and games to try with your child

Activity 4 (8 mins)

Had enough of finding remainders…..Why not try some of the other games instead?

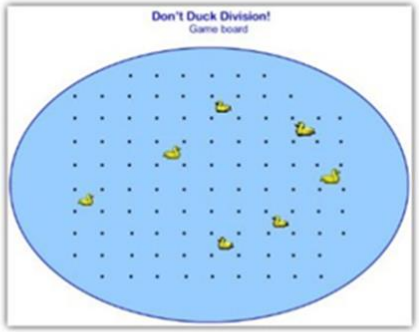
Don't Duck Division

'FACTOR' - a whole number that divides exactly into another number

Skill: Division with factors up to 12

Number of players: 2

Object of the game: Score more points than your opponent by completing boxes on the game board



Equipment:

- Don't Duck Division game board
- Game cards, or your own *division flash cards*
- Equipment to help you to divide –
  - *small objects (such as counters, straws, lego bricks etc.)*
  - *a numberline or 100 square,*
  - *paper & pen.*
- Calculator to check answers
- Dry-wipe marker for each player
- Timer (optional)

To Play:

1. Decide who plays first. Player with the shortest name starts. Decide how long the game will last. Set a timer if necessary.
2. The first player draws a card, reads the division problem and works out the answer (to begin with, you might want to use practical equipment to help get the answer)
3. The other player uses the calculator to check Player 1's answer. If his answer is correct, Player 1 draws a line segment on the game board. If the answer is incorrect, he does not draw a line and his turn is over.
4. Player 2 takes a turn using the same method.
5. Continue to play. The player who draws a line that finishes a 4-sided box writes his initials in that box. When a player completes a box, he also gets to draw an extra line on the game board.
6. At the end of playing time, players calculate their score. Each box with a duck inside is worth 3 points. Each box with initials only is worth 1 point. The player with the most points wins.

"Gazinta"- a division maths game

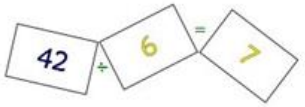
(A Division and Factor Game)

'FACTOR' - a whole number that divides exactly into another number

'FACTORING' – finding the factors of a given whole number

Focus Skill: Division, Factoring

2	4
2	4
3	5
3	5



44	49
45	50
48	54
48	56

Equipment: Game Cards:

- 45 blue cards with various numbers from 12-100
- 15 yellow cards with various numbers from 2-10

A timer & paper and pen to record score

How to Play:

Two players can play. Shuffle the blue cards and the yellow cards, keeping them in two separate decks. Turn over one blue card and one yellow card so that both players can see them easily.

If the number on the blue card is divisible by the number on the yellow card, the first player to say ***"Gazinta!"*** scores 1 point. (Because the number on the yellow card ***goes into*** ***"Gazinta"*** — the number on the blue card).

If the number on the blue card is NOT divisible by the number on the yellow card, the first player to say ***"No!"*** scores 1 point.

Put the cards back in their decks, shuffle them, and turn over one blue card and one yellow card to begin another round. You can play for a certain amount of time (whoever has the most points wins), or you can play up to a certain total (21 points, for example).

Example 1: The blue card is a 24 and the yellow card is an 8. Because 8 goes into 24, whoever says "Gazinta!" first scores 1 point.

And some great online games to try at home - once your child has had lots of fun with concrete ☺ ☺ ☺

- DIVISION MACHINE ACTIVITY: See how many points you can score with this division game. Three different skill levels to choose from. http://www.amblesideprimary.com/ambleweb/mentalmaths/dividermachine.html
- SUM SENSE DIVISION: Drag and Drop the number cards to make a correct division statement. Try to answer as many problems in limited time.
- http://www.oswego.org/ocsd-web/games/SumSense/sumdiv.html
- http://www.multiplication.com/games/play/cave-run-division
- http://www.multiplication.com/games/play/knock-down-division
- http://www.multiplication.com/games/play/granny-prix-multi-player-division
- http://www.topmarks.co.uk/maths-games/7-11-years/multiplication-and-division
- http://www.mathplayground.com/puzzle_pics_division.html

Family Learning Evaluation

Session Attended: Year 3 Calculation Skills - Division
Tutor: Heather Williams

We hope you have enjoyed today's session - In order for us to monitor the quality of our courses, we would be grateful if you could spend a couple of minutes completing the sections below:

Your name: ..... **Date:** .....

1. Glad you came?

Did you enjoy your time in school today? **Yes/No**

Did you learn something new? Please rate increase in knowledge/skills:

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

Two things I have found useful today:

.....

.....

We want our sessions to be as helpful as possible - what could we do better?

.....

2. Want to do more/something else? We run a variety of short courses - please circle any of interest (many are FREE)

Family Learning sessions: Maths /Literacy /anxiety /transition & change /other.....

Parenting courses: Challenging behaviour/ self esteem/ sleep/ anxious thoughts & worries

Back to work courses: working with children / be your own boss / retail / hospitality / customer service / food safety / health & safety / first aid

Soft Skills: Managing change / confidence building/ team building/ effective communication

English/maths for adults - informal 'café style' sessions *(brush up skills / gain a qualification)*

IT skills: Word / Excel / Outlook / Power Point / IT for jobseekers

Something else? .....

Phone number/email address.....

Please take a minute to give feedback and consider whether you would like to know more about our other courses ☺

Time for the tiddly peeps……

- Help your child to decorate and construct the spinners *(use the instruction sheet for help if needed)*
- Grab your 'Remainders' game board and a coloured counter each. Read through the instructions together
- Play the "Remainders" game with your 1-6 spinner (remember to get them using the matchsticks…..)
- Help your child to design and make their own version of 'Remainders', using the blank board game template provided – you can use the 7-12 spinner if you like……
- Additional game/activity ideas can be found on the table at the front – feel free to try them out

ENJOY!!!