Bishop Loveday C. E. Primary School

Parent Information Evening

Times Tables

Games And Strategies

23rd October, 2019

Aims

- To show how multiplicative skills develop within the EYU and Primary Maths curriculum.

- To discuss the importance of vocabulary used in the teaching of multiplication

- Provide ways that you can support your child's Maths learning at home.

EYU

Counting in steps of 2,5 and 10 using songs, rhymes, bead bars and manipulatives.

Exploring practical ways of counting in pairs with hands on activities.

Year 1 & 2

- Increase fluency and speed of recall of counting in steps of 2,5 and 10 in many contexts.

- Use manipulatives to introduce concepts of arrays and groups,

- Count in groups and steps of 2,5 and 10 in many contexts.

- Begin to notice pattern in multiples of 2s, 5s and 10s using manipulatives, rhythmic counting and visual support such as 100 squares.

Lower KS2 (Years 3 & 4)

Mental agility.

Children encouraged to use known facts to reason and extend thinking.
Use a standard columnar written methods for addition, subtraction and multiplication.
Division introduced as grouping rather than sharing.
Children should know tables, 2x3x4x5x6x,x8 x10, to 12th multiple including inverse.
Add and subtract fractions.

Upper KS2

- Use Roman numeral system

- Use known facts to derive related facts using bigger numbers or decimals.

- Multiply & divide up to a 4-digit by a 2-digit number using an efficient written method.

- Add and subtract fractions with different denominators e.g. 3/8 + 5/7

- Divide fractions e.g. 1/3 divided by 2 and learn the related decimal fraction.

Aims of The Maths Curriculum

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

What is Maths Mastery?

➢ At Bishop Loveday, we believe 'mastery to mean deep, conceptual learning so a child is able to demonstrate a skill in a variety of different contexts and can reason and convince others..

Different levels of learning

Shallow learning: surface, temporary, often lost.

Deep learning: it sticks, can be recalled and used.

Deeper learning: can be transferred and applied in different context

The 3 foundations of the Maths Curriculum

5x2= 10

☐ **x2= 10**

fluency variation

Do you think the answer will be odd or even? Explain your ideas.
What patterns have you noticed?

You can keep 5 goldfish in 1 bowl. How many can you keep in 7 bowls ?

Problem Solving

Deep Learning

Reasoning

What is Fluency?

- Key facts and methods (number bonds, times tables, four operations etc).
- Recall and automatic.
- Frequent practise, drill and memorisation.
- Includes variation and "agility" e.g. reverse tables.
- Speed, accuracy and reliability.

What is Reasoning?

Is there another way…?

What do you notice when…?

Using mathematical vocabulary to explain logical thinking.

"reasoning could be thought of as the 'glue' which helps mathematics makes sense."
NRICH Maths think tank that provides teacher training and pupil resources.

APE answer, prove, explain

Levels of reasoning:
1. Describe,
2. Explain,
3. Justify,
4. Prove.

How do you know?

What might explain that…?

What is Problem Solving?

"Problem solving … is about engaging with real problems; guessing, discovering, and making sense of mathematics." NRICH
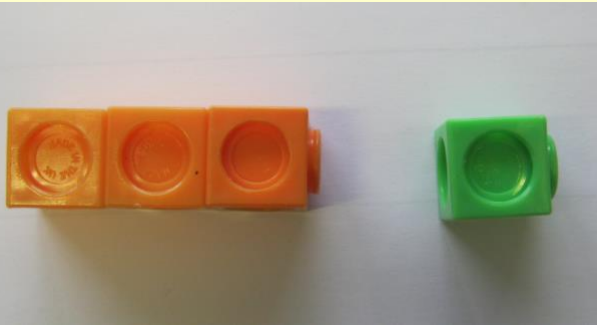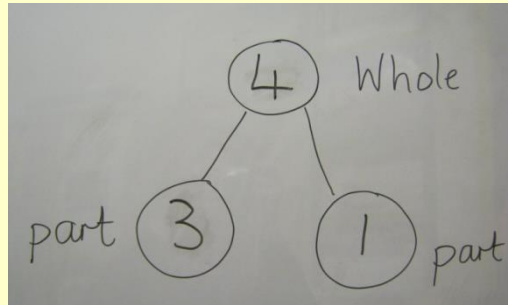
Conjecture

Follow a line of enquiry

Seek a solution

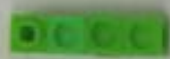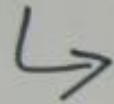BLS problem solving strategy. ICECAP

Concrete   Pictorial   Abstract

$$3 + 1 = 4$$

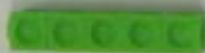Concrete or pictorial representations support students to understand abstract concepts

Concrete Pictorial Abstract in Upper KS2

When Should Times Tables Facts Be mastered?
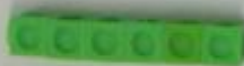
- Primary-school children are expected to know all their times tables up to 12x12.

- Under the current National Curriculum, children need to know their times tables so they can recall them quickly and accurately by the end of Y4.

Statutory Tables Test

- From June 2020, all Year 4 pupils will sit a government Dept of Education on-screen multiplication test (on Ipads).

- The test (25 questions) will last no longer than 5 minutes and the answers are marked instantly.

- There will only be multiplication x? x = x style questions. There will be no problem solving or division in the test.

- The check will help teachers identify which children struggle and arrange further support.

Learning Times Tables

Tables seem easy when children have learned them, but the prospect of having to learn them drives fear into children and this in turn can have a negative effect on learning.

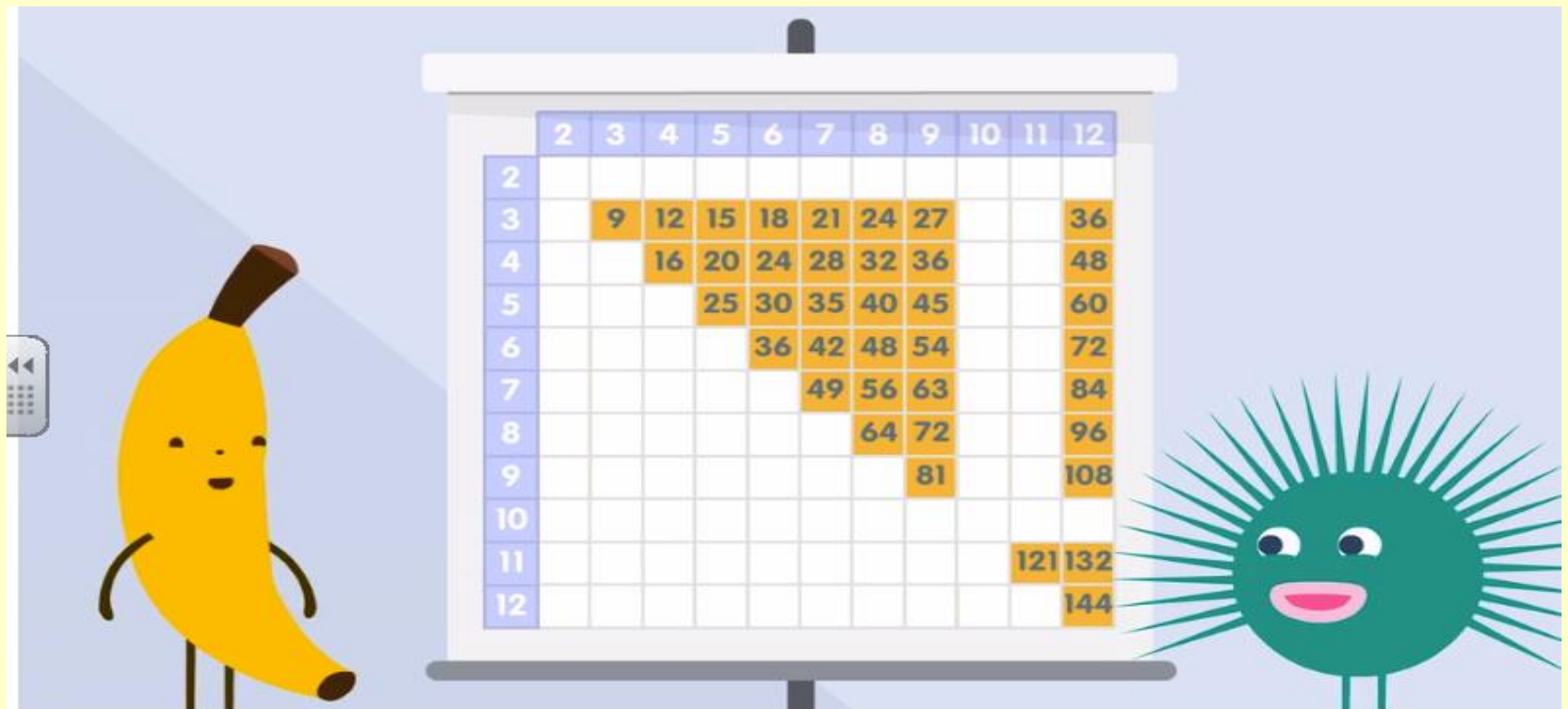This diagram shows the 144 times tables facts that every child needs to commit to memory.

X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Children need to be able to recall any times tables answer within 2 or 3 seconds.
This leaves no time for counting the way up to the answer from 2x, 3x, 4x etc- the answer has to 'pop' out of memory pretty much instantly.

Do you really have to learn 144 facts individually?

So you can see there are only 38 times tables to learn, *and you will soon know them all!*

Language and Times Tables

There are many different ways to say the tables and they're all correct
but it helps if you're consistent and if you adopt the language your child already uses in school.

For example we have;

Three times eight is…

Three multiplied by eight…

Three eights are…

Three lots of eight…

Useful Tips

Stick to one table at a time to minimise confusion.

Start with chanting and writing them out slowly in order.

Then move on to completing the answers quickly in order –on paper or verbally with your child.

Finally, move on to completing the answers in any order.

Memory Hooks

- Keep reminding your child that 3 x 4 is the same as 4 x 3 –this is effectively halves the number of tables facts.

-
  Each table has a square number 3 x 3, 7 x 7 etc. These are special numbers that can act as a memory hook –emphasise them!

- Talk about the numbers as you are encountering them " 5 x 7 = 35 that's our house number" –this makes more memory hooks

Games to try at home…

Super Fingers!

- This is a game for two players.

- The game is basically a version of rock, paper, scissors but with numbers. Two players count to 3 and then make a number using their fingers.

- Both players then have to multiply both numbers together and the quickest wins.

Games to try at home…
Multiplication Snap!
You will need a deck of cards
1.Flip over the cards as though you are playing snap.
2.The first to say the fact based on the cards turned over (2 and 3 say 6) gets the card.
3.The person to get all of the cards wins.

Maths Games

www.topmarks.co.uk

Hit the Button

Coconut Multiples

https://www.topmarks.co.uk/timestables/coconut-multiples

Maths Fishing

Times Tables Grid

www.timetables.co.uk

Times Tables Shooting

Times Tables Memory

SpuqBallloons

Times Tables Rally
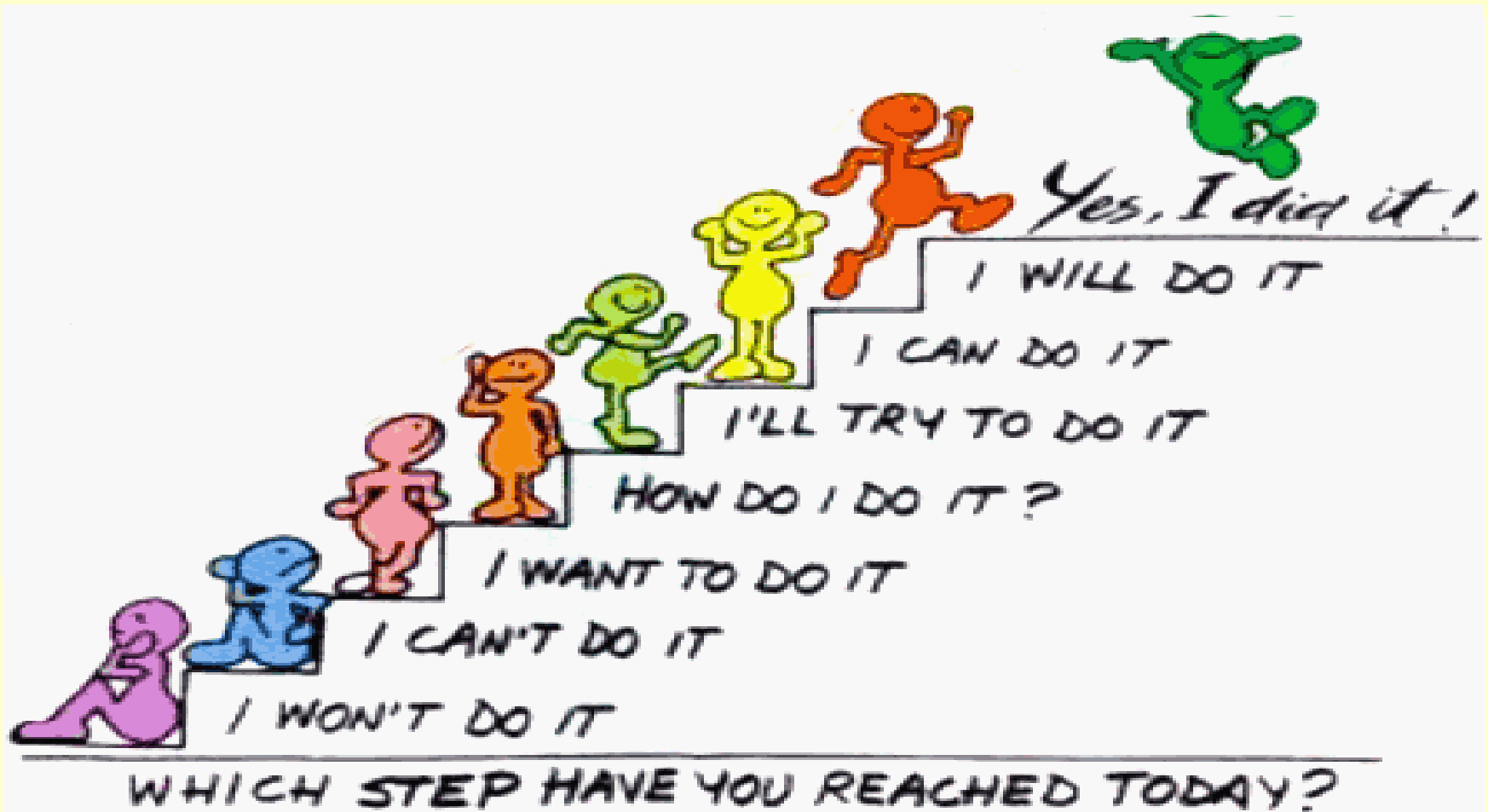https://www.timestables.co.uk/rally.html

Times Table Rockstars

https://ttrockstars.com

What is Growth Mindset?
A vital learning approach to support all.
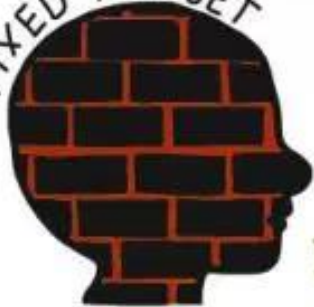
National Curriculum Expectation

In the table below are the National Curriculum times tables expectations for each year group. The children will be tested on their times tables regularly in school.

Expectations for times tables for each year group

- **Year 1**   Count in multiples of 2, 5 and 10.

    Recall and use all doubles to 10 and corresponding halves.

    Begin to reason, problem solve and talk about patterns

- **Year 2**   Recall and use multiplication and division facts for the 2, 5 and 10 times tables including recognising odd and even nos.

.   Begin to reason and problem solve.

- **Year 3**   Recall and use multiplication and division facts for the 3, 4 and 8 times tables.   Reason and problem solve.

- **Year 4**   Recall and use multiplication and division facts for tables up to 12 x 12   Reason and problem solve.

- **Year 5**   Revision of all times tables and division facts up to 12 x 12.

    Use known tables facts to multiply decimals and bigger numbers

        Use knowledge of tables facts in a variety of problem solving contexts

- **Year 6**   Revision of all times tables and division facts up to 12 x 12

    Begin to explore algebra using tables facts   (nth term)

10 Growth Mindset Statements

What can I say to myself?

FIXED MINDSET

GROWTH MINDSET

INSTEAD OF:	TRY THINKING:
I'm not good at this.	**1** What am I missing?
I'm awesome at this.	**2** I'm on the right track.
I give up.	**3** I'll use some of the strategies we've learned.
This is too hard.	**4** This may take some time and effort.
I can't make this any better.	**5** I can always improve so I'll keep trying.
I just can't do Math.	**6** I'm going to train my brain in Math.
I made a mistake.	**7** Mistakes help me to learn better.
She's so smart. I will never be that smart.	**8** I'm going to figure out how she does it.
It's good enough.	**9** Is it really my best work?
Plan "A" didn't work.	**10** Good thing the alphabet has 25 more letters!

(Original source unknown)

@sylviaduckworth

How to be a growth mindset champion

- **Praise effort, persistence, strategies, seeking challenges, setting goals, planning, using creative ways of solving problems. Celebrate mistakes as the key to understanding.**

- **"If parents want to give their children a gift, the best thing they can do is to teach their children to love challenges, be intrigued by mistakes, enjoy effort, and keep on learning" – Carol Dweck**

Help us by using the same language…Praise effort rather than ability.

Fixed Mindset
- I like my work to be easy
- I don't like to try a challenge
- I want people to praise me for how clever I am
- I believe I cannot change how clever I am
- I don't like to try new things because I won't be very good at it
- I give up easily

Growth Mindset
- I never give up
- I like my work to be difficult – it means I am learning
- I love challenges
- I want people to praise me for the effort I put into my work
- I believe I can get more intelligent by working hard
- I feel clever when I'm learning something new
- I learn from my mistakes

Helping your child to develop a growth mindset

- The effort you put in makes us so proud.

- You tried so hard – I can see that.

- That was a struggle for you and you kept going – well done.

- Let's go back over the words that you found difficult – they're a real chance to learn

- Your commitment and practice have paid off.

Let's talk about Maths!

Have a Maths chat! Ask your child what they are learning about in Maths at the moment.

If your child seems 'stuck'. Use the calculation policy on the school website to help them practise further.

Find out what number facts/tables your child is learning at school. Practice them for a few minutes every day.

Try and vary the ways you practise the tables facts.

Ask your child to explain their thinking. Can they explain their homework to you?

Give your child lots of praise and encouragement! Make them feel confident.

Ask your child about the related Maths vocabulary. Use in context in everyday life!

Talk to your child's teacher, or the Maths Co-ordinators .

Real Life Maths!

Encourage your child to see Maths as skills essential to life, not just a lesson.   Look at all these examples!

Real Life Maths
Involve your child in as many problem-solving activities as possible.

shopping

counting, estimating, rounding, budgeting, percentages giving change, adding, subtracting, multiplying, dividing comparing,

Planning an outing

estimating, rounding, budgeting, timing using timetables, distance, journey time, dividing

adding subtracting dividing multiplying, working out change and cost.

Cooking a meal

Proportion and ratio, measuring, estimating

timing, ordering dividing multiplying adding.

Using a TV guide

Reading tables, data handling/ interpretation, time estimation, rounding, telling the time.

Thank You!

Thank you for coming along this afternoon. I hope you have found the meeting useful and that you are leaving with a few extra ideas on how to support your child at home.

If you have any questions then please just ask!