FCJ Maths Curriculum evening

Thursday 20th April 2017

Websites for videos

* http://www.mathsnoproblem.co.uk/blog/times-tables-do-they-really-improve-maths-skills/

* https://www.youtube.com/watch?v=yXdHGBfoqfw

Aims of the Maths Curriculum

Pupils should:

* 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.

Maths in 'greater depth'

$$\frac{1}{5} + \frac{3}{5} =$$
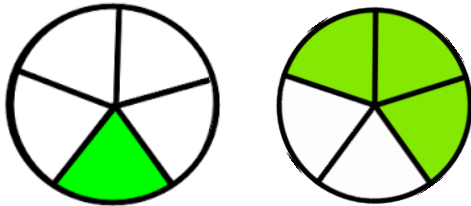
If children can recognise that the circles are split into 5 equal parts of the whole, and count that there are 4 fifths ($\frac{4}{5}$) after adding the fifths… Great! Move them onto 'harder' fractions…

Not anymore!

Children need to go into 'greater depth' and really understand the processes behind their calculation:

Explain why only the numerator changes in this calculation

'We are counting fifths, just like we would count a counter or coin. A fifth is something to count- we can have many of them. In fractions, we put this number on the bottom where the denominator is. 1 fifth and 3 fifths added together is 4 fifths, just like 1 flower and 3 flowers added together would make 4 flowers. We just write fractions in this mathematical way with the numerator on top and denominator on the bottom to show that there are parts of a whole.'

Depth of learning

Paddling

Snorkelling

Diving

How many fraction addition and subtractions can you make from this model?
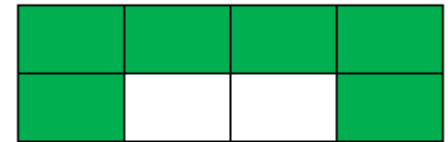
Do your additions and subtractions always have to be 1 part add 1 part or subtract only 1 part? Can there be more than 2 parts?

Homework

* These activities give children a chance to discuss their findings and the processes behind their mathematical thinking.
* They do not have to get to the answer…
* If they are thinking about the task; reasoning and justifying then they are learning.
* If they do get to the answer, that's just the beginning.

* To challenge them further- could they:
* find another way of completing it?
* explain how they found that way in terms of the mathematical concepts and vocabulary (not just a step by step instruction)?
* Explain why did they choose to do it that way?

Right: outlines the expectations of Maths homework, including the times tables practice and the

*Please also read the pathways which outlines what each award entails
+ See guidance for Emerald times tables award

Year group	Guidelines
	Maths Homework
1	Number bonds practice
2	Number bonds practice/ Times tables practice. One-two tasks per week.
3	Times tables practice. Two-three tasks per week.
4	These tasks will be given out on a Monday. Tasks will be discussed during lessons and teachers will feedback verbally. Children will then self-mark.
5	Four tasks a week given out at the beginning of the week with due date of each task stated. Tasks will be discussed during lessons and teachers will feedback verbally. Children will then self-mark.
6	Four tasks a week given out at the end of each lesson due in the following day. Tasks will be discussed during lessons and teachers will feedback verbally. Children will then self-mark.

Number bond and Times Table Awards

Number Bonds
- Bronze number bond award (Parent/Carer initials)
- Silver number bond award (Parent/Carer initials)
- Gold number bond award (Teacher/TA initials)

Number bond badge
- 20 mixed number bond questions, including addition, subtraction and missing number facts.

X tables Colour awards
- Bronze times table (Parent/Carer initials)
- Silver times table award per times tables (Parent/Carer initials)
- Gold times table award per times tables (Teacher/TA initials)

X Tables Badge
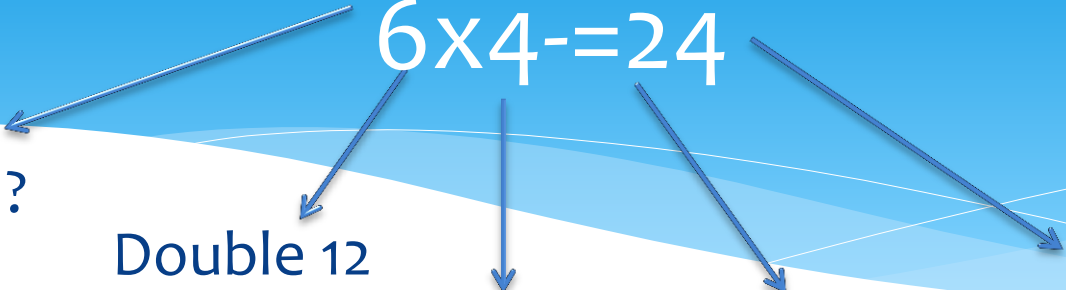- 20 mixed times table questions, including division facts.

X tables Emerald
- The Emerald Award consists of the application of times tables facts to; large numbers, fractions of numbers, missing number calculations, area, perimeter, square numbers and 2 and 3 step problems. (This used to be the Gold Award)

X tables Diamond
- The Diamond Award consists of a project, completed at home, where children independently complete a greater depth task that will use their problem solving skills together with their reasoning to produce a journal style project.

Examples of facts for Emerald Award

6x4-=24

60 x 4= ?

Double 12 then divide by 4

3 x 2 x 2 x 2

24 children were split evenly between 4 tables. How many children will there be on each table?

How many different ways can you make 24 pence using coins?

A rectangle has a length of 6cm and a height of 4cm. What is the area of the rectangle?

24 children were split evenly between 4 tables. How many children will there be on each table?

Using this number fact, find me another

Name a pair of factors for 240

Is 264 in the 6 times table?

0.6x4=?

What % is 6 of 24?

Maths Homework extension challenges

* Is this the only way you can solve it? Have you found all the possibilities?
* What do you notice? Be sure to explain your reasoning.
* Explain how to…(Write instructions for how to solve it)
* Explain why you did it this way…
* Prove to me…Convince me…
* Have you used the correct mathematical language?
* Can you find a pattern? Would the pattern continue?
* Can you make up a similar challenge for a friend / family member?
* Can you show this using a diagram or picture?
* How does this link to other areas of maths?
* Can you write this as a real-life story?