

Maths Workshop 1

5/10/16

Vision of Maths at Herrick

Aim: Our vision is teaching to Mastery where all children develop sufficient fluency and depth of understanding, so learning is sustainable over time and can be built upon something that has already been mastered.

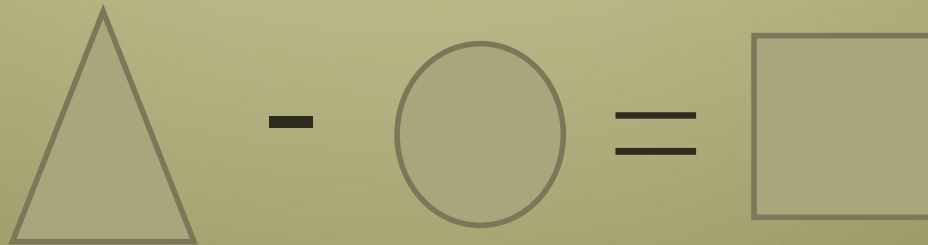
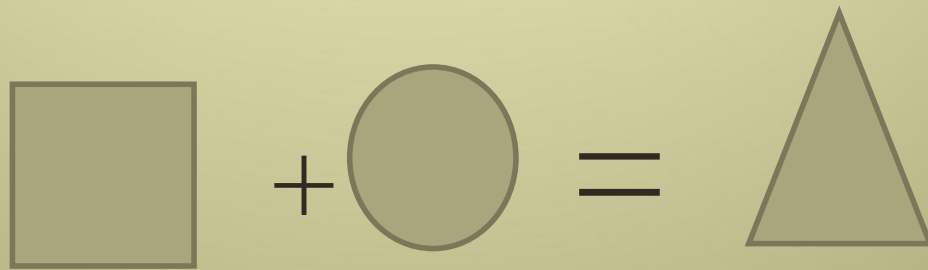
Mastery: Strong focus on expecting the children to explaining their reasoning using the correct vocabulary – if they can explain their work to someone else, they have mastered it. *What do you know? How do you know? Can you explain? Prove it?*

Mathematics: Opportunities are provided for deep learning, problem solving and risk taking in Mathematics – linked to Herrick Learning Attitudes.

Learning Objective – All children work from the same Learning objective and individuals are appropriately supported to enable them to achieve. Basic. Advancing. Deep. (B.A.D.)

Activity 1

$$2 + 1 = 3$$



Defining B.A.D.

Depth of Learning	Cognitive challenge	Nature of progress	Typically, pupils will	Predominant teaching style
Basic	Low level cognitive demand. Involves following instructions.	Acquiring	name, describe, follow instructions or methods, complete tasks, recall information, ask basic questions, use, match, report, measure, list, illustrate, label, recognise, tell, repeat, arrange, define, memorise.	Modelling Explaining
Advancing	Higher level of cognitive demand. Involves mental processing beyond recall. Requires some degree of decision making.	Practising	apply skills to solve problems, explain methods, classify, infer, categorise, identify patterns, organise, modify, predict, interpret, summarise, make observations, estimate, compare.	Reminding Guiding
Deep	Cognitive demands are complex and abstract. Involves problems with multi-steps or more than one possible answer. Requires justification of answers.	Deepening Understanding	solve non-routine problems, appraise, explain concepts, hypothesise, investigate, cite evidence, design, create, prove.	Coaching Mentoring

Activity 2

Spot the mistake:

45,40,35,25

What is wrong with this sequence of numbers?

True or False?

I start at 3 and count in threes. I will say 13?

What comes next?

$$41+5=46$$

$$46+5=51$$

$$51+5=56$$

Hands on/ practical

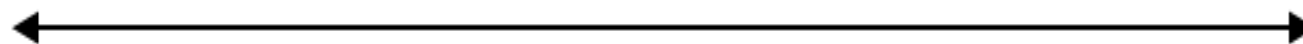
Visual or
conceptual variation

Do/ apply

Basic

Advancing

Deep



Our aim is to move all children from Basic to Deep



All children must move on to Advancing, but some may return to basic before attempting Advancing again



Once secure with Advancing children move on to Deep

Activity 3

Take a **TOTAL** of 4 cubes and put them into 4 groups. How many in each group?

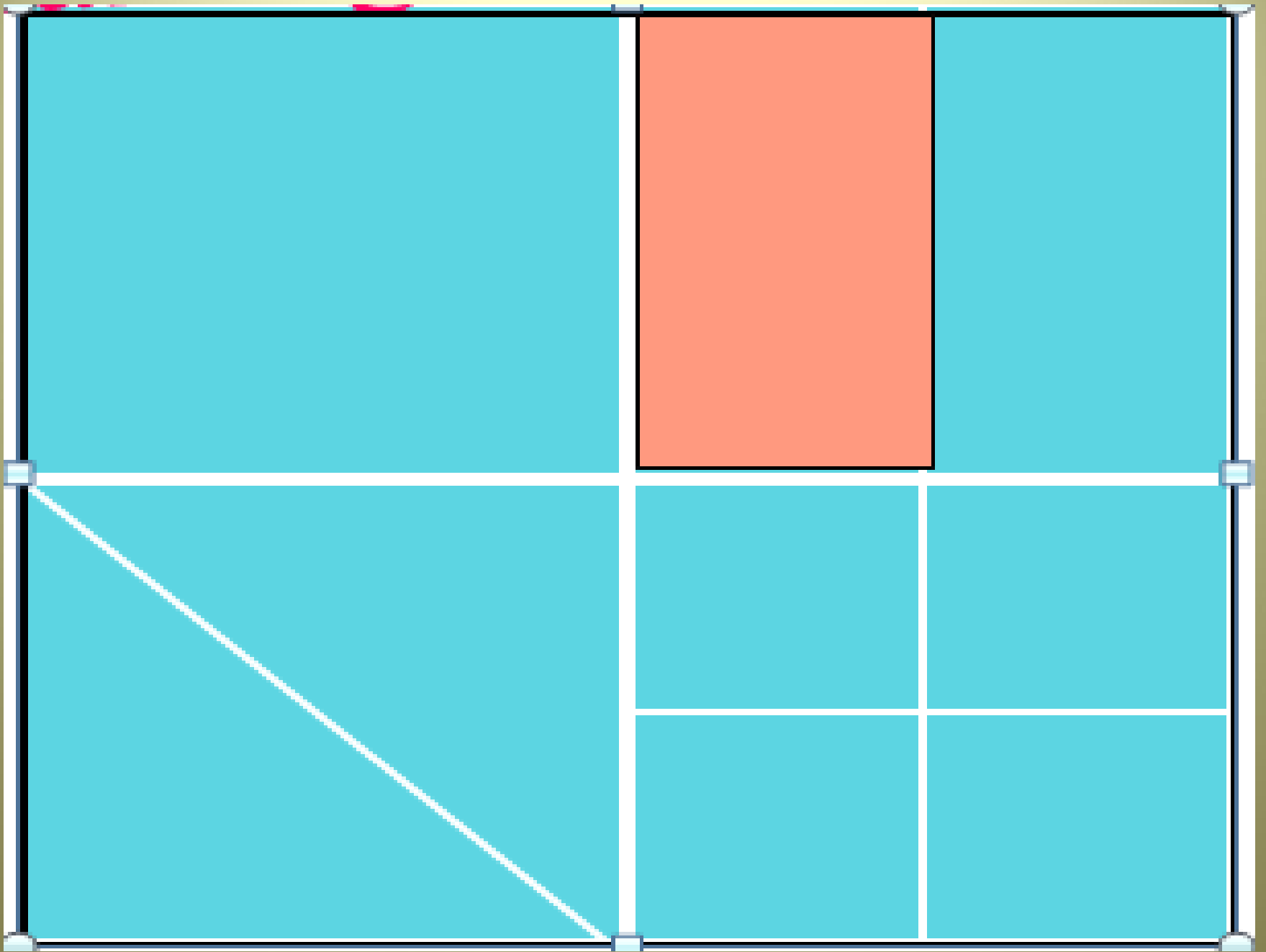
Take a **TOTAL** of 8 cubes and put them into 4 groups. How many in each group?

How would you describe the operation you are doing?

Can you find which **TOTALS** which are > 35 and < 45 which can be put into groups of 4 equally?

Which numbers > 35 and < 45 cannot be put into 4 groups equally? Why?

What do you notice about the numbers that can?



Arithmetic

Arithmetic – 20 mins per week (Monday Morning) Grey books.

Written method – e.g. formal method of addition (columns) modelled by the teacher;

Bar model method – again modelled by the teacher linking to the same questions as above – this step should include the children manipulating the bar model to show other links between the numbers (e.g. inverse);

Question – children are asked to create their own question in the form of a word problem that uses the same numbers;

Peer assessment – the children swap books and check/answer each other's questions;

Apply learning through tackling a word problem created by the teacher (bar model questions are available as a resource pack for each year group).

Children must demonstrate that they can solve it using the formal method at hand, but should also be encouraged to show their understanding using the bar model.

Activity 4

Part 1	Part 1
Whole	

10	5
15	

10	5
15	

What is the total of both parts?

Does it matter the order in which the parts are added?

What would you get if either of the parts was taken away from the total?

Can you identify a pattern or a link?

Activity 5

Stuart loves playing basketball. Last Saturday, Stuart's team, 'Richmond Tigers', scored 14 points against 'Coleshill Cougars' who scored 3 times as many points.

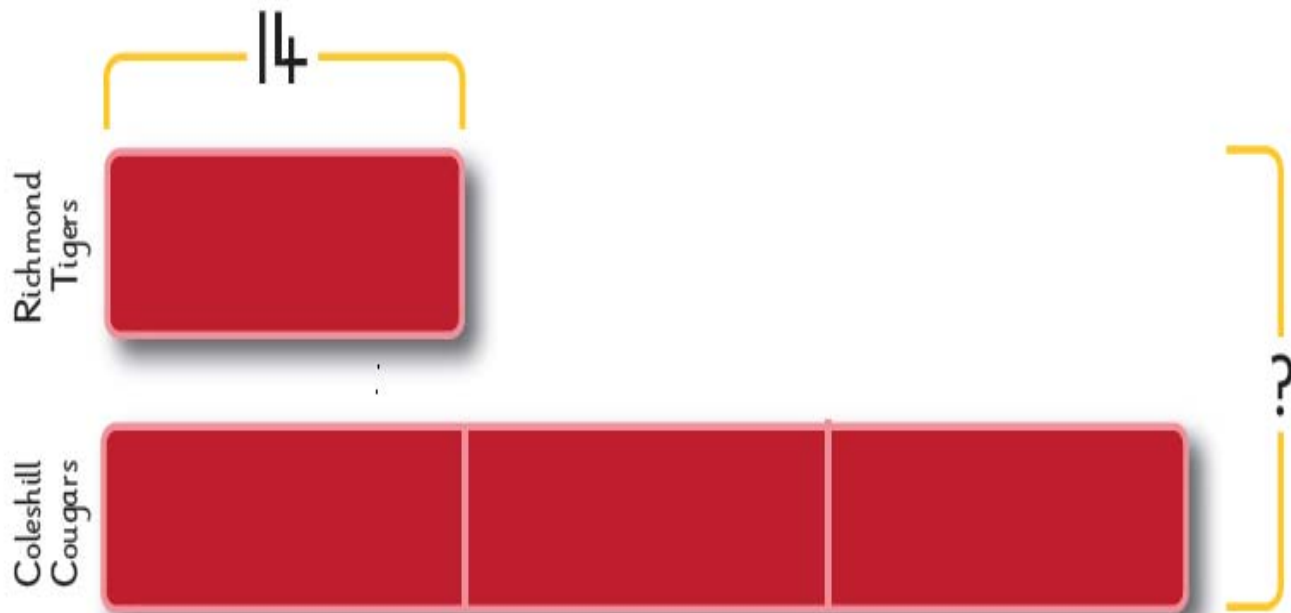
How many points were scored altogether?



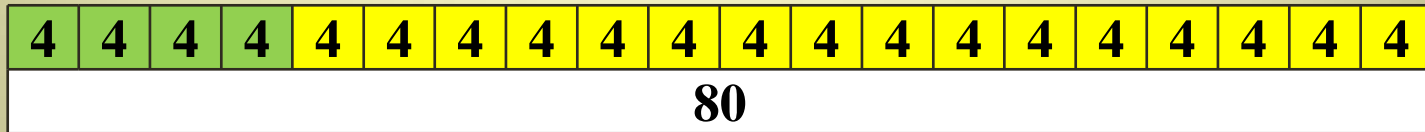
HINT

Make sure that you are clear about the question you need to answer.

ACTIVITY 5 - BAR MODEL



Timestables



- Each session will focus on a specific times table;
- A bar model approach will be used to develop understanding of tables facts, for example:

What are two lots of 4? A teacher should ask this whilst covering up the remaining blocks.

Potential questions that could be asked:

Now we can see two lots of 4, what are four lots of 4 (green bar)?

(demonstrates the concept of doubling)

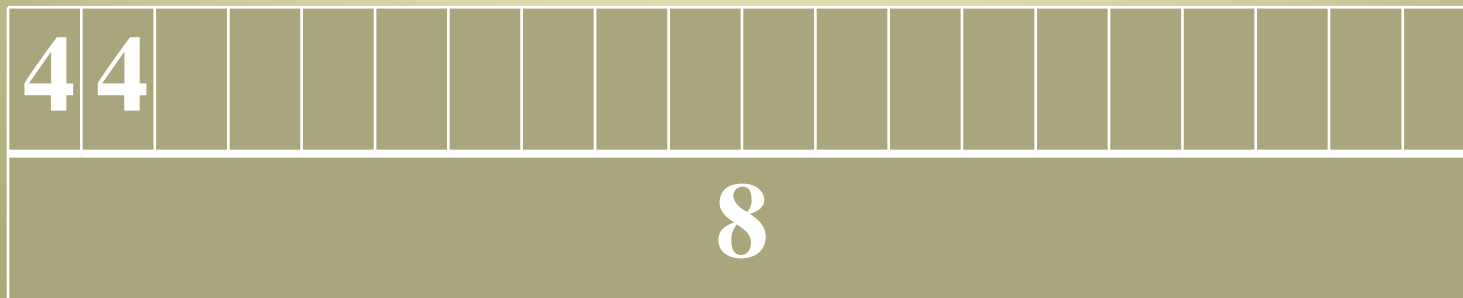
What is the total of the yellow bar? How many lots of 4 make this total?

You know what twenty lots of 4 is – what about forty lots of 4?

- Children should then attempt to write repeated addition sentence linked to the question in hand, e.g.

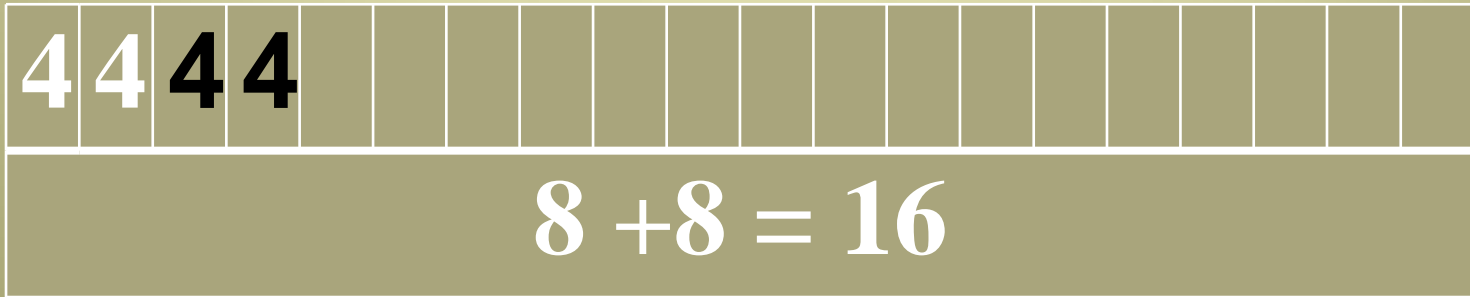
$$4 + 4 + 4 + 4 = 4 \times 4 = 16$$

Timestables



$$2 \text{ lots of } 4 = 4 + 4 = 8$$

Timestables

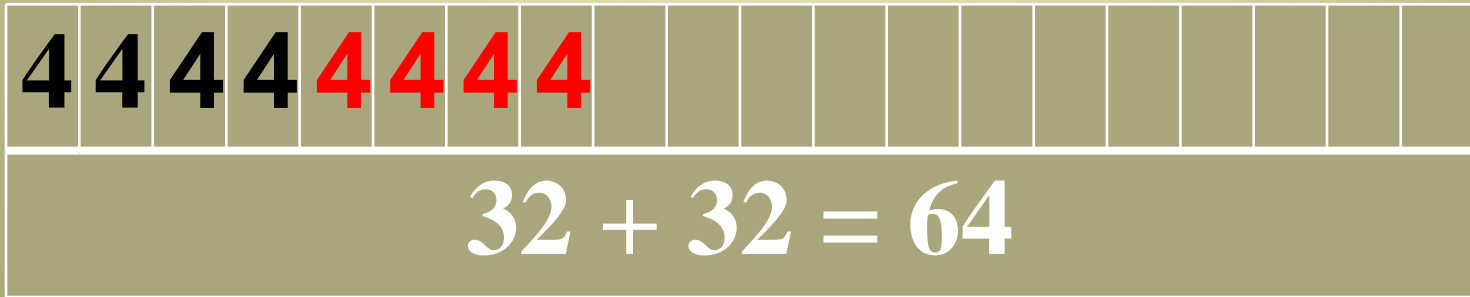


$$4 \text{ lots of } 4 = 4 + 4 + 4 + 4 = 16$$

Or

$$8 + 8 = 16$$

Timestables



$$8 \text{ lots of } 4 = 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 4 \times 8 = 32$$

Or

$$32 + 32 = 64$$

Problem Page

(Front of P.P. page)

Name:

Learning

Success 😊 What do you know? How do you know? Can you explain? Prove it.



- Can you name the different coins?
- Can you name the different shapes?
- Which coin is of the most value?

Can you solve this problem?
How many ways can you pay
exactly for this apple?



Maths words

total

(Back of P.P. page)

Questions to ask your child:

- Can you name all the different silver coins?
- Can you name all the bronze coins?
- When you buy something, What question should you ask to find out how much it costs (**PRICE**)?
- What is change?
- Can you make different amounts using different coins (For example: 50p)

I can use the symbol for pounds (£) and pence (p)

I can add different coins to make up a total

I can add different amount of coins to equal the same amount ($2p + 1p + 1p = 2p + 2p$)

Add and subtract money including giving change.

Solve simple problems in involving addition

Conclusion

In short, this means working towards:

Teach less, learn more: less teacher talk and more evidencing learning and progress

All children supported and challenged: children are confident to take risks and not afraid to make errors

Experience and apply: space and time to ensure children do not fall behind or to go deeper

Understanding real life applications: wherever possible to make learning relevant and not abstract; nothing should be taught without a purpose.

All of this means that you may see a change in the way we teach and assess your child, most notably will be in how we organize children's' learning and how we report their progress. This approach is seen as good practice. It is promoted by the government and seen as the best way to deliver the new national curriculum.

Future Workshops

Date	Group	✓ time attending	
		2.30pm	4.30pm
October 5	Maths & Calculation Policy & Maths Problem Page		
October 12	Multiplication (All year groups)		
October 26	Addition (All year groups)		
November 2	Subtraction (All year groups)		
November 9	Division (All year groups)		
November 23	Year 6		
November 30	Year 2 & 3		
December 7	Year 4 & 5		
December 14	Year 1 & Early Years		