Mathematics meeting for parents

Whitchurch 23rd June

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What was your experience of maths at school?

What emotions do you experience when thinking about maths?

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‘Thinking is at the heart of mathematics and therefore should be at the heart of mathematical teaching and learning’

The Devon Maths Team (2009)

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Problem solving in Mathematics

- Making decisions
- Communicating
- Reasoning

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Problem solving

Problem solving includes:

- Making and monitoring decisions – how they are going to do it, what resources are they going to use, what mathematical skills and strategies might they apply to the tasks they are doing;
- Making sense of a problem, identifying what the problem means in their own terms;
- Being flexible in their choice of strategies and prepared to try alternative ones if their first choice is not successful;
- Starting with simple examples first before working up to something more difficult;
- Being organised and systematic;
- Seeing whether their solution makes sense and generally appraising their method of solution;
- Extending the problem and coming up with other questions.

Reasoning includes:

- Being curious, wondering why things are the way they are and attempting to explain them;
- Giving clear explanations of their methods and thinking
- Making and testing predictions, conjectures or hypotheses
- Justifying solutions, results, conjectures, conclusions, generalisations.. by testing and logical, reasoned argument
- Drawing conclusions.
- Searching for and recognising patterns, relationships and meaning in the mathematics they do;
- Investigating and make general statements;
- Disproving by finding counter-examples

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How do we become good at addition and subtracting

- Counting – and know how to use it
- Number facts – and know how to use them
- Strategies for deriving facts from what you know
- Understand what addition and subtraction mean - and understand how they ‘help’ each other

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Add up these numbers

- 5 6 4
- 4 7 9
- 3 7 2
- 5 6 4

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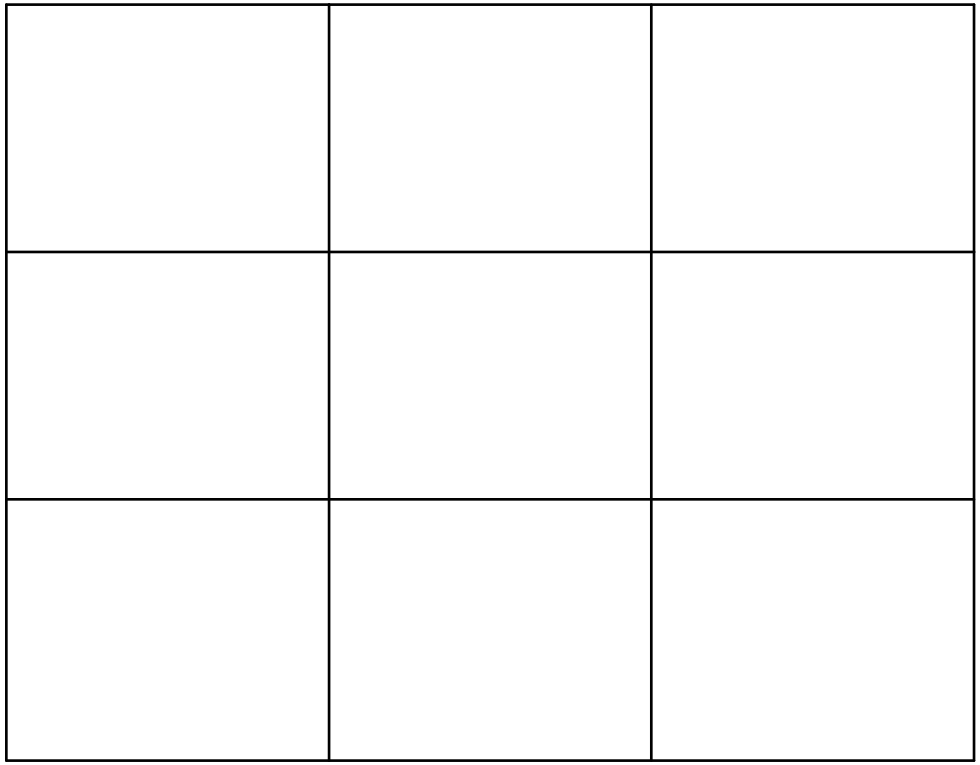
Make Fifteen



2 4 6 8

1 3 5 7 9

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Which number is the odd one out? Why?

2 3 6

I think…is the odd one out because…

My two children have been saving money towards buying a cd player for their bedroom. George has saved £19 and Jessica managed to save £35. How much have they saved altogether?

There is a need for children to know **how** to use a calculation strategy but as importantly they need to know **when** to use a calculation strategy.

How do you ‘become good at’ multiplication and division?

- Counting – and know how to use it
- Number facts – and know how to use them
- Strategies for deriving facts from what you know
- Understand what multiplication and division mean - and understand how they ‘help’ each other

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Counting – from pre-school to beyond primary

If you start at zero and count in steps of the same size you will land on **multiples** of that number.

Excel

How do you ‘become good at’ multiplication and division?

- Counting – and know how to use it
- Number facts – and know how to use them
- Strategies for deriving facts from what you know
- Understand what multiplication and division mean - and understand how they ‘help’ each other

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How do you remember

$7 \times 8 = 56$?

If you know this what else can you work out?

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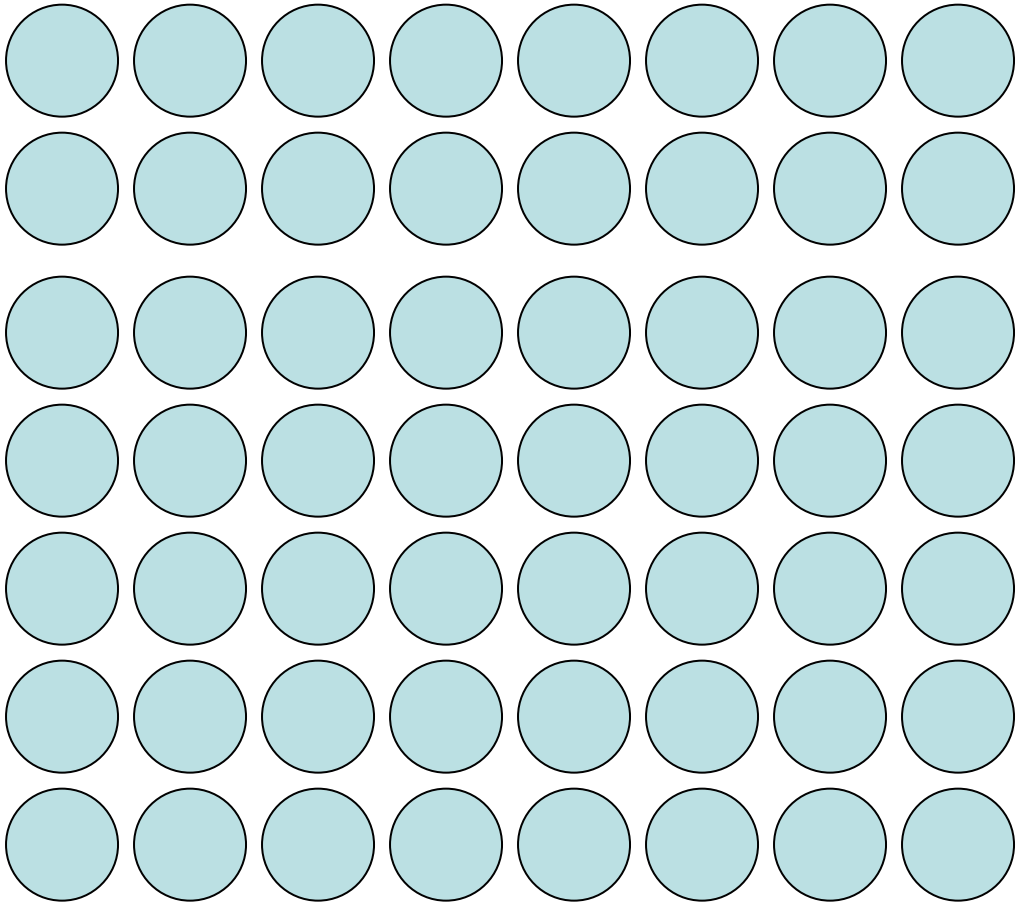

7 x 8

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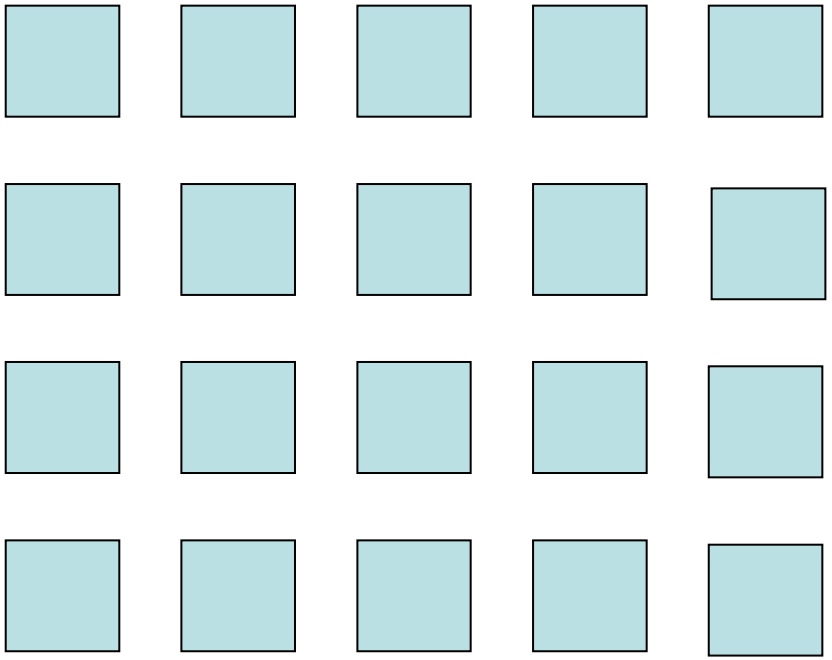
Understanding multiplication and division

Key picture or image for multiplication and division is the array. We are surrounded by arrays – look for them around your house and out and about.

- Repeated addition
- Arrays
- Scale factor
- Grouping
- Sharing



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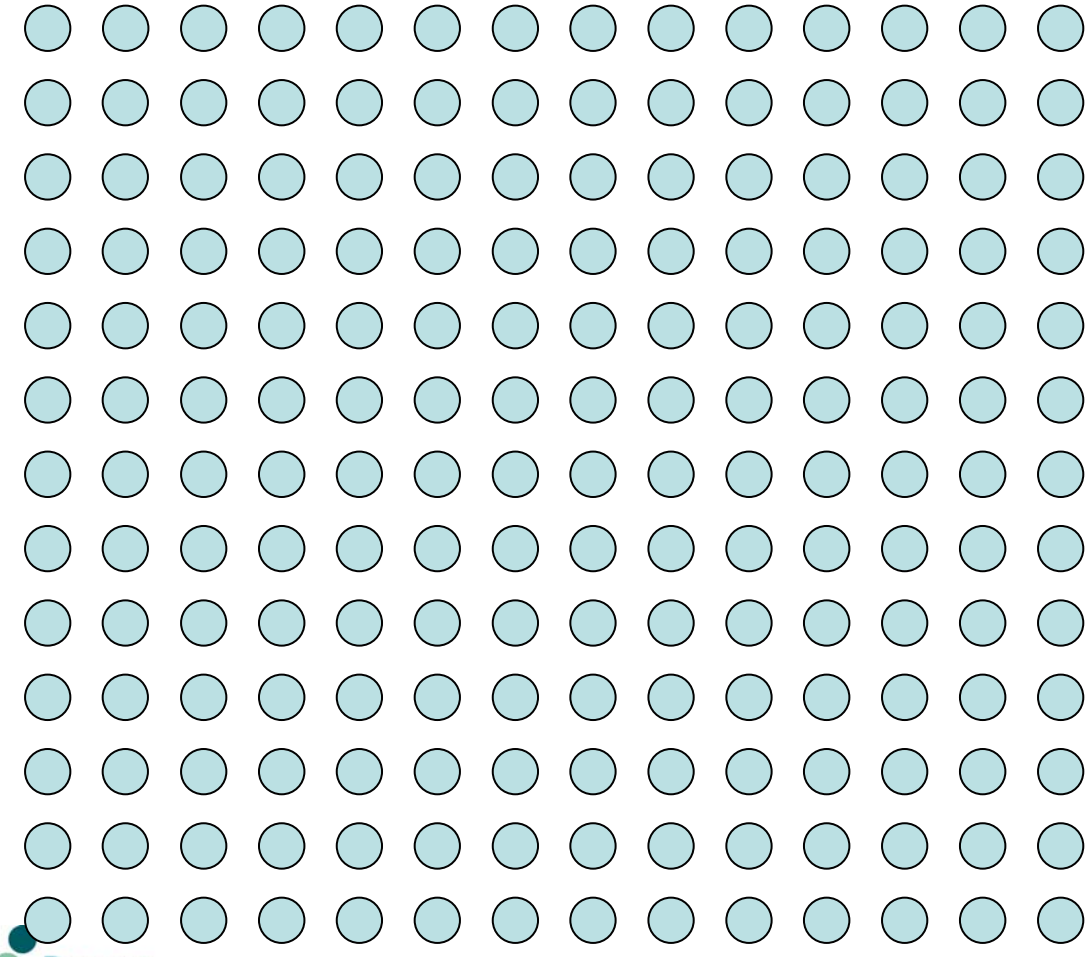

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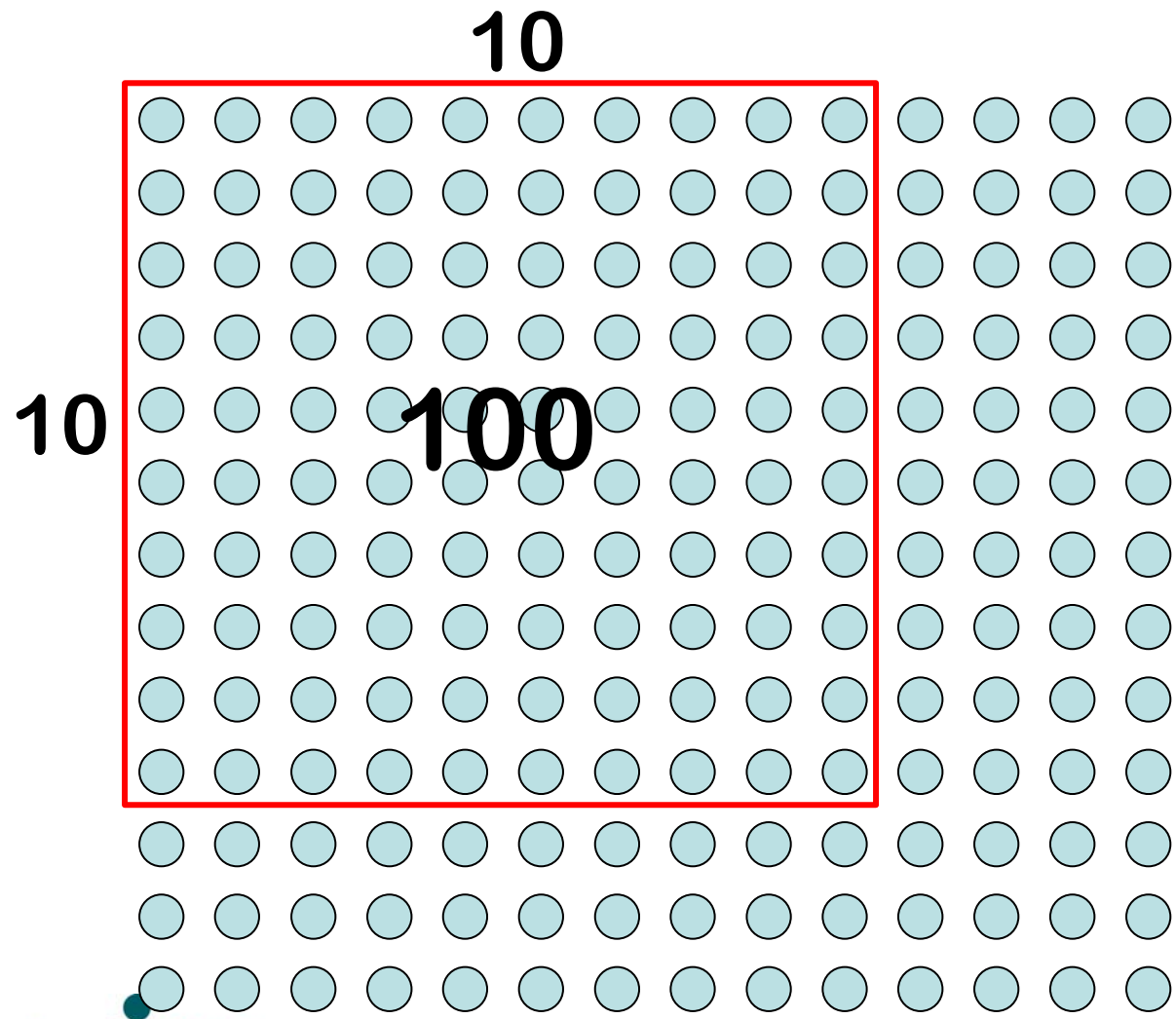

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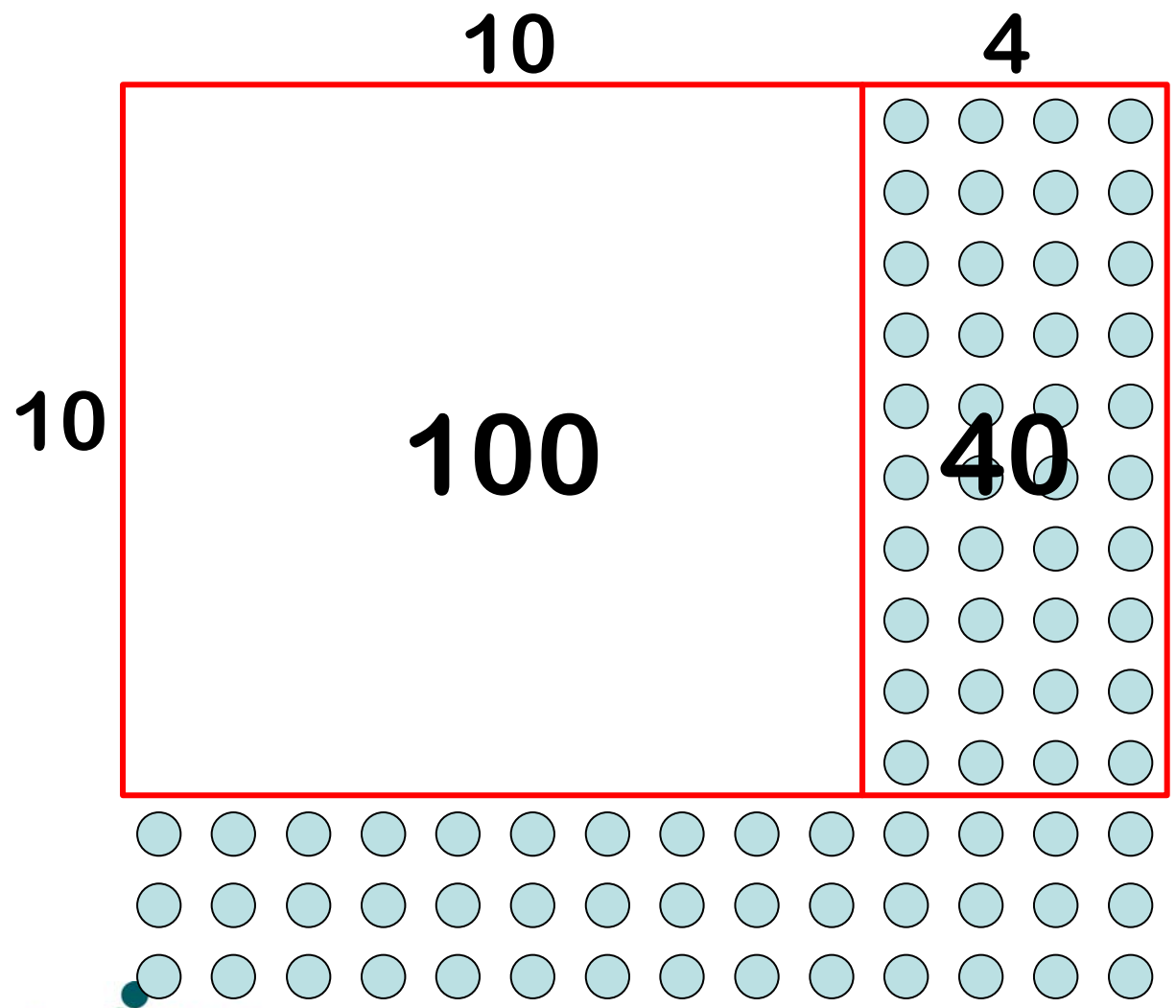

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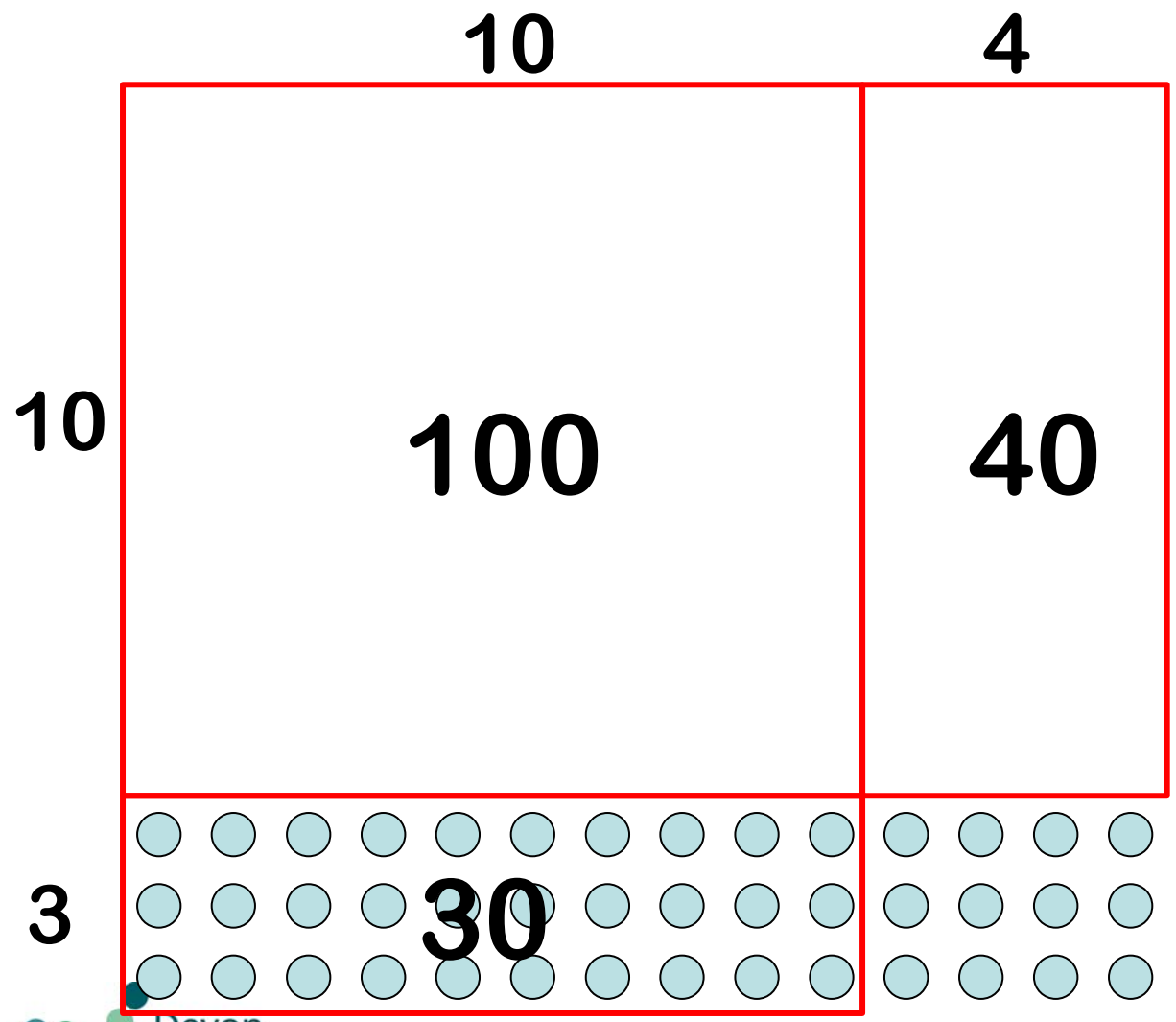

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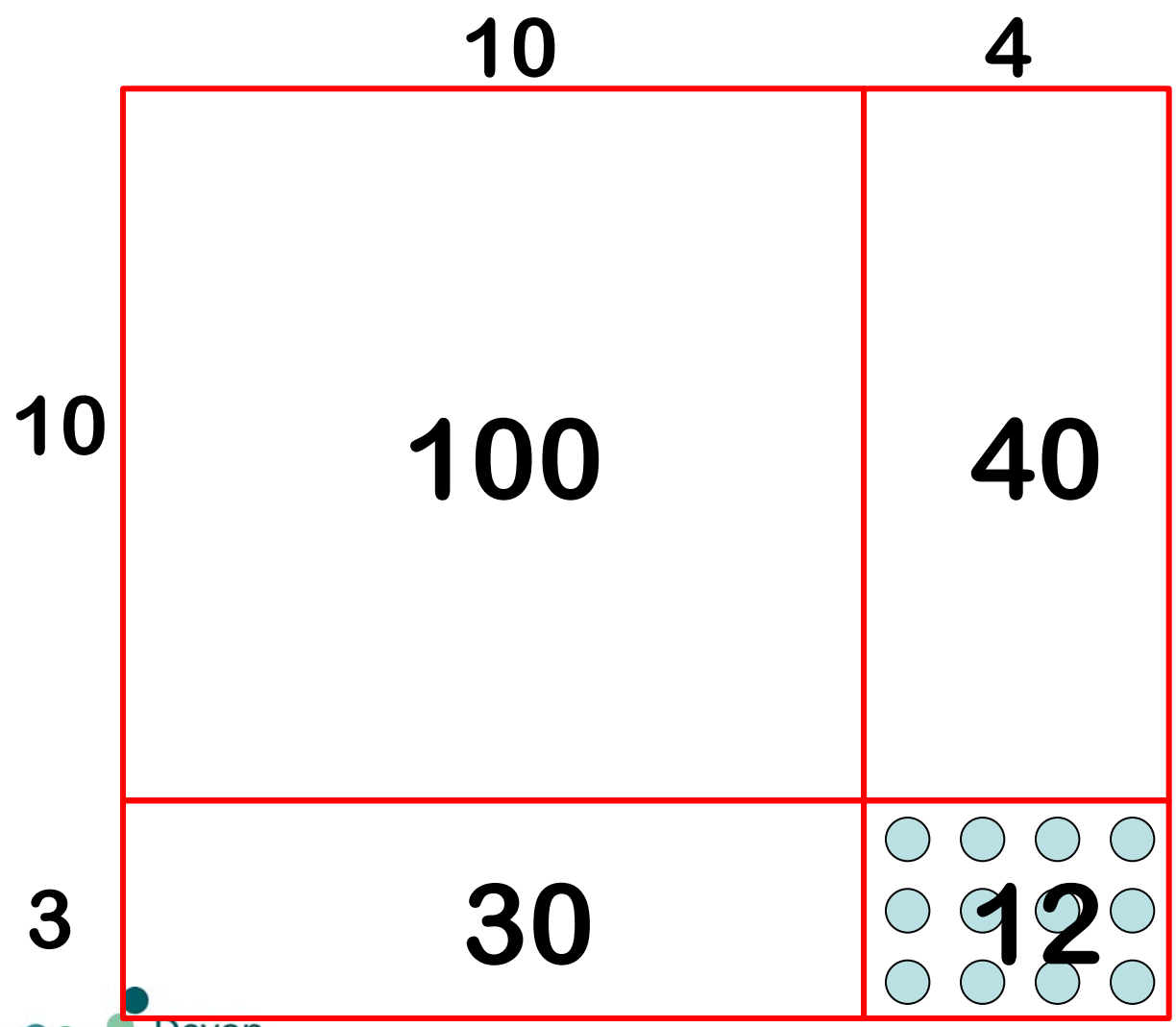

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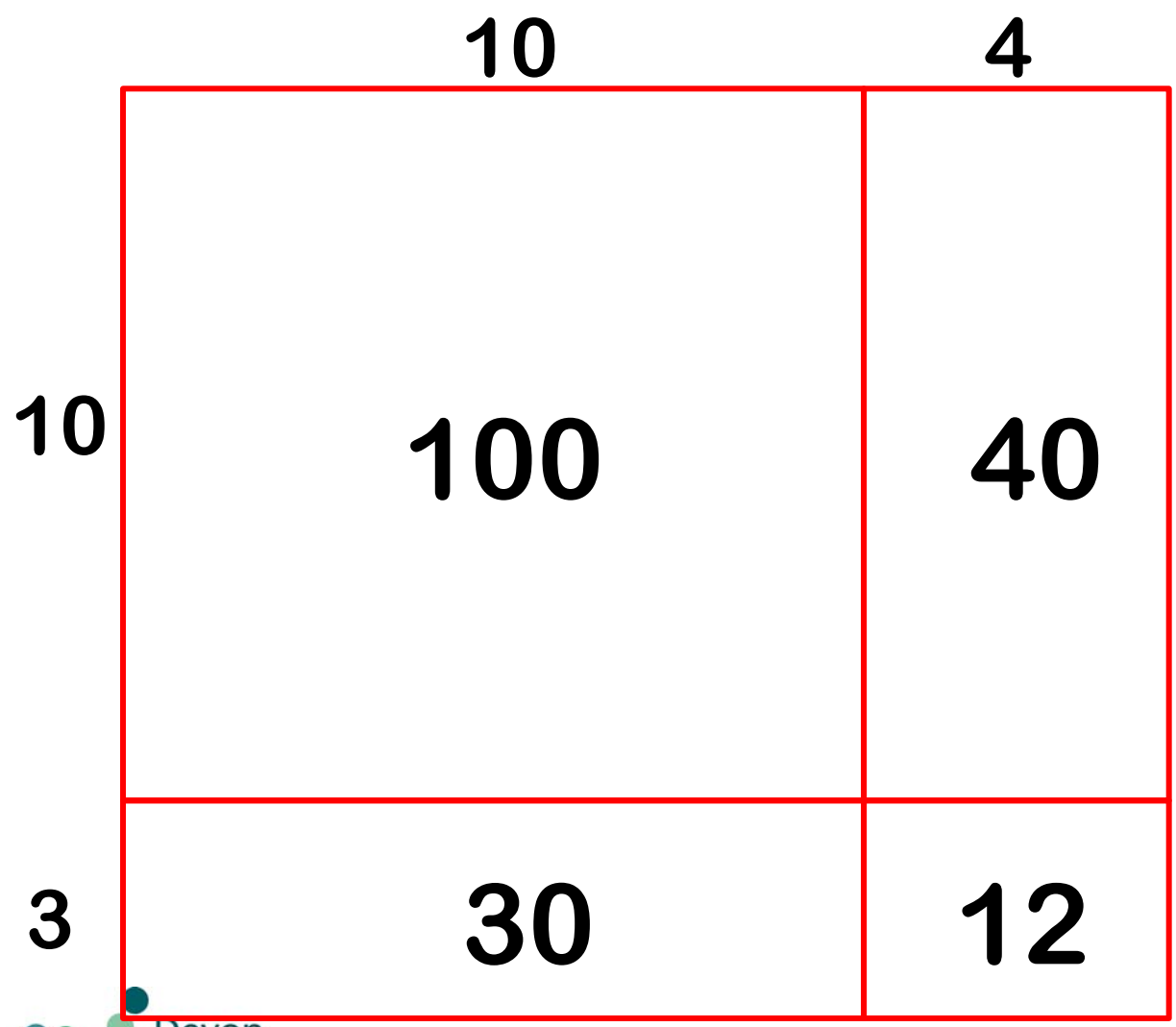

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How can families and carers help?

- Count
- Talk about maths
- Encourage children to draw pictures to show how they are thinking
- Read out numbers that you see
- Write numbers
- Play card games and other number games e.g. spot number plates

  with digits that total 15, make multiples of 9 etc.
- Make children aware of maths around them

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