Year 6 - 2019

# SATS revision x ÷

Tuesday 22nd January 2019

# 10, 000 hour study

- **Total Secondary** math hours = 2850 hours Y7 to Y11
- **Total Primary** math hours = 1330 hours Reception to Y6

## Total math hours = 4180

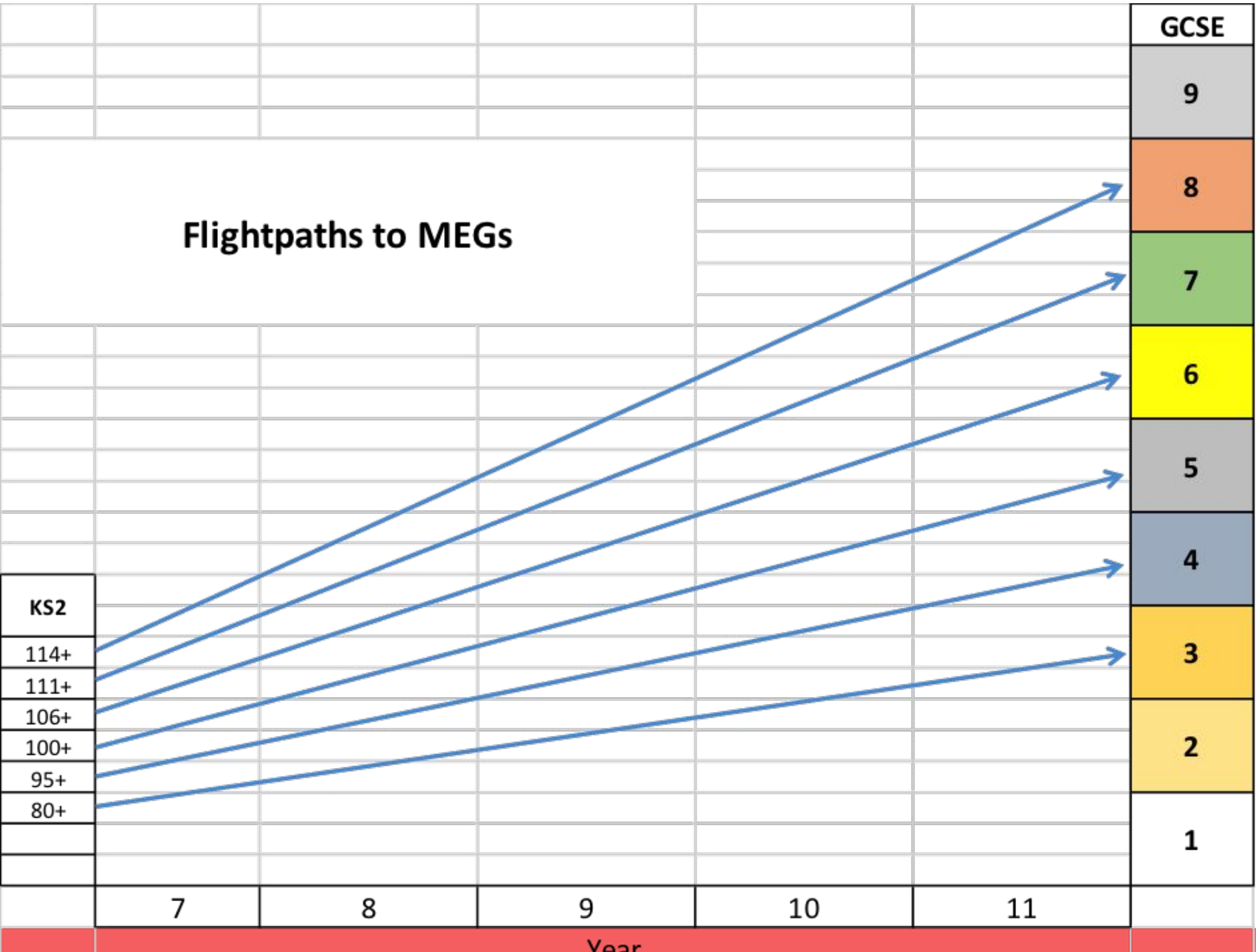
Start — Functional — Elite

0 — 5000 — 10,000

**`Meaningful practice`**

**`Mastery of a subject occurs through incremental gains`**

# KS2 – Where next?



# SATS vs predicted GCSE`s

## School measures explanation sheet KS2 to KS3

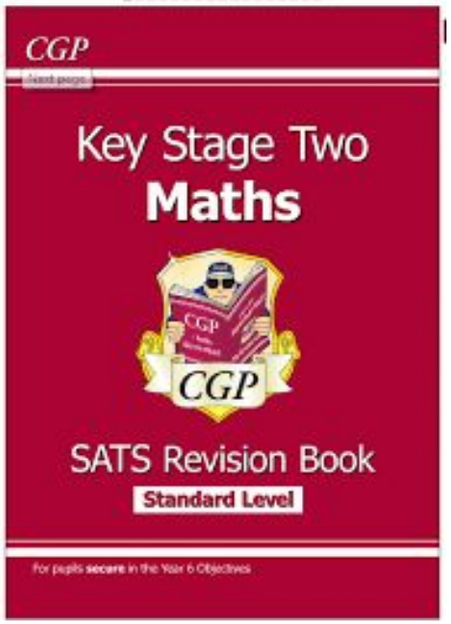
| KS2 Scaled Score (Years 7-9) | KS2 Level (Years 10-11) | GCSE Base Grade | Base Grade Vocational courses | Historical GCSE Grade Equivalent |
|---|---|---|---|---|
| 120 | 6 | 8 | D | A* |
| 116 | 5a | 7 | D | A |
| 112 | 5b | 7 | D | |
| 108 | 5c | 6 | D | B |
| 104 | 4a | 5 | M | C+ |
| 100 | 4b | 4 | P2 | C |
| 96 | 4c | 4 | P2 | |
| 92 | 3a | 3 | P2 | D |
| 88 | 3b | 3 | P2 | |
| 84 | 3c | 3 | P2 | |
| 80 | 2a | 2 | P1 | E |
| | 2b | 2 | P1 | |
| | 2c | 1 | P1 | F/G |
| B | B | 1 | P1 | |

# Revision timetable

## Revision timetable

| Week | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |

# The role of family

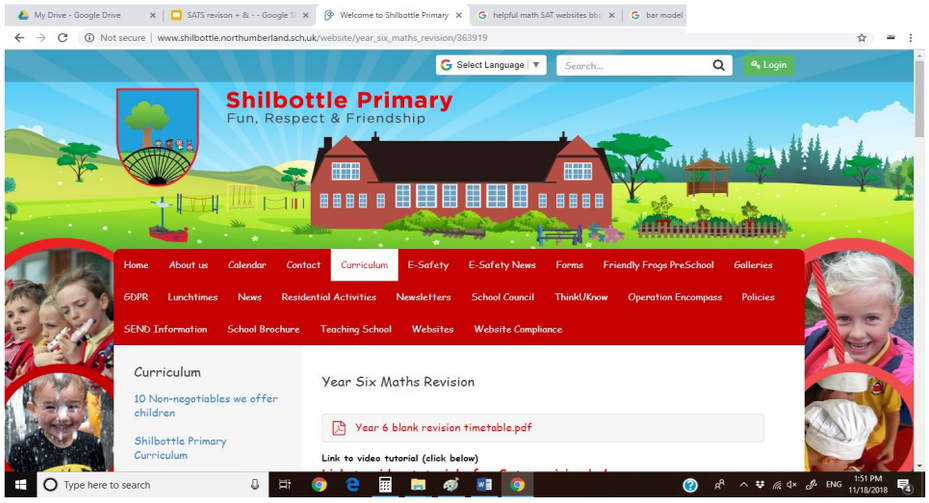




SAT Study
Time
Management

# Can I revise on my own?

`How do I know if I'm doing it right?`


YouTube




**How do I become an independent learner?**

# Resources


Not secure | www.shilbottle.northumberland.sch.uk/website
Shilbottle Primary
Fun, Respect & Friendship
Home
About us
Calendar
Contact
Curriculum
E-Safety
E-Safety News
Forms
Friendly Frogs PreSchool
Galleries
GDPR
Lunchtimes
News
Residential
Encompass
Policies
SEND Information
School Brochure
10 Non-negotiables we offer children
Shilbottle Primary Curriculum
The National Curriculum 2014
Reception 2018 - 2019
Year One 2018 - 2019
Year Two 2018 - 2019
Year Three 2018 - 2019
Year Four 2018 - 2019
Year Five 2018 - 2019
Year Six 2018 - 2019
Year 5 & 6 Arithmetic homework
Year 5 & 6 Math Reasoning homework
Helpful math websites
Homework days
Help for parents- English
Accelerated Reader - Home Connect - further information for parents
Handwriting
Reading and Phonics
Help for parents Maths
Multiplication fact challenge
Multiplication fact & Number bond practice
Year Six Maths Revision
KS2 Calculation Policy
Shilbottle Primary 2017-2018
Welcome to Shilbottle Pr
Fun, Respect & Friendship - Every child
We look forward to welcoming you to o
hope that our website will give you a
Shilbottle as well as the factual informat
As written words cannot fully convey t
family orientated school, please contac
office to arrange a visit
or admin@shilbottle.northumberland.sc
To learn more about our school, please
the message from our Head Teacher, M
If you would like printed information
contact the school office and it will be pr
Our vision:
Fun Respect & Friendship - Every Child
epare and cook stir fry
rice!
ww.shilbottle.northumberland.sch.uk/website/year_six_maths_revision/363919

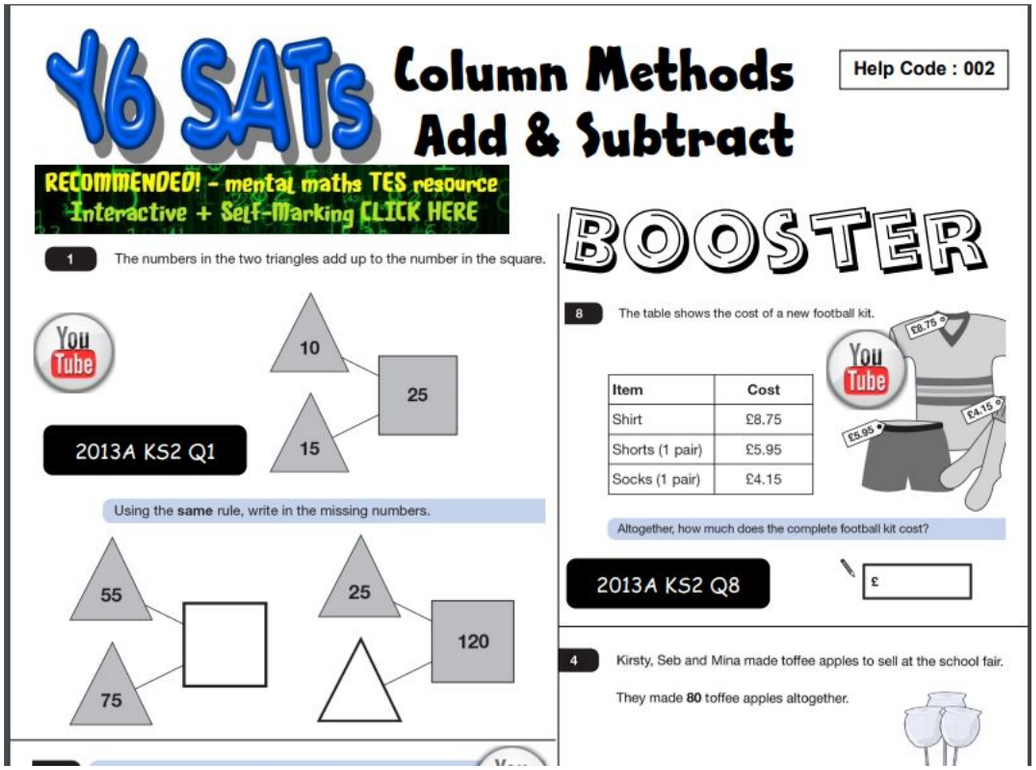
# Arithmetic vs reasoning

$\frac{3}{10} + \frac{4}{10} =$ $\square$ $= 4792 + 836$

$30\,000 + 4562 =$ $2.6 + 0.5 =$

$\frac{2}{3} + \frac{1}{4} =$ $+$ $378 + 60 =$

$6^2 + 7 =$ $6.012 + 0.7 =$



# Your for meaningful practice ...

"To develop procedural fluency, students need experience in integrating concepts and procedures and building on familiar procedures as they create their own informal strategies and procedures."

NCTM Position Paper on Procedural Fluency

# Multiplicative Reasoning

**Two types of numerical relationship:**

Additive

Multiplicative

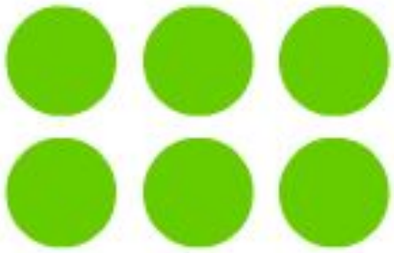
# commutative law, rule or property

## addition

$$a + b = b + a$$

$6 + 2 = 8$ and $2 + 6 = 8$

## multiplication



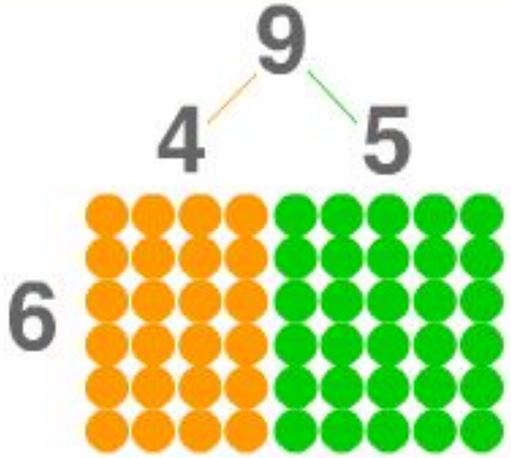
$$a \times b = b \times a$$
or
$$ab = ba$$

$3 \times 2 = 6$ and $2 \times 3 = 6$

**in addition and multiplication, numbers may be added or multiplied together in any order**

**For subtraction and division the order is most important and must not be changed as this results in different answers,**
**e.g. $8 - 2 = 6$ but $2 - 8 = -6$,**
**$6 \div 3 = 2$ but $3 \div 6 = 0.5$**

# distributive law, rule or property




6 x 9
is the same as
6 x (4 + 5)
which equals
(6 x 4) + (6 x 5)
which equals
24 + 30
which equals
54

or 6 x 9

6 x (4 + 5) = (6 x 4) + (6 x 5)
6 x 9 = 24 + 30
54 = 54

other examples

2 x (4 + 5) = (2 x 4) + (2 x 5)
3 x 12 = (3 x 10) + (3 x 2)
4 x 9 = (4 x 6) + (4 x 3)

**multiplying a number is the same as multiplying its addends by the number, then adding the products**

MathsHUBS

# Counting in equal groups

Rhythmic counting in ones

Rhythmic counting in groups

2, 4, 6, 8

Moving on to multiplication facts!

Fluency and conceptual understanding.

National Centre for Excellence in the Teaching of Mathematics

# Unitising

Represent this situation using some of the resources on your table:

*"There are 4 apples in a bag. I buy 3 bags of apples."*

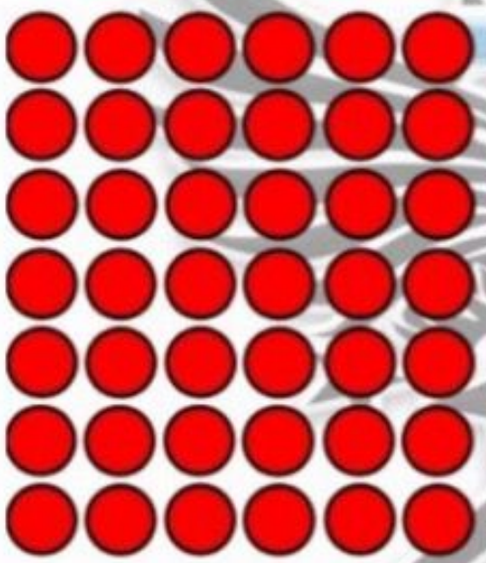
Fosnott and Dolk:

In order to reason multiplicatively, children need to be able to 'unitise' (treat a group as a single entity).

*There are 5 children in each team. How many children are taking part in this competition?*

# TIMES TABLE of THE WEEK

## 6 x 7 = 42



| 42 | | | | | |
|---|---|---|---|---|---|
| 7 | 7 | 7 | 7 | 7 | 7 |

6 x 7 = 42

7 x 6 = 42

42 ÷ 7 = 6

42 ÷ 6 = 7

# Unitising in KS2

**34 500 is …**

34 500 ones (or 0 ones?)
3 450 tens (or 0 tens?)
345 hundreds (or 5 hundreds?)
34.5 thousands (or 4 thousands?)
3.45 ten thousands (or 3 ten thousands?)
0.0345 million
What about measures? 3.45m is not unusual …

**It depends on what we have defined as the unit.**

MathsHUBS

# Conceptual variation


# Skip counting – making connections

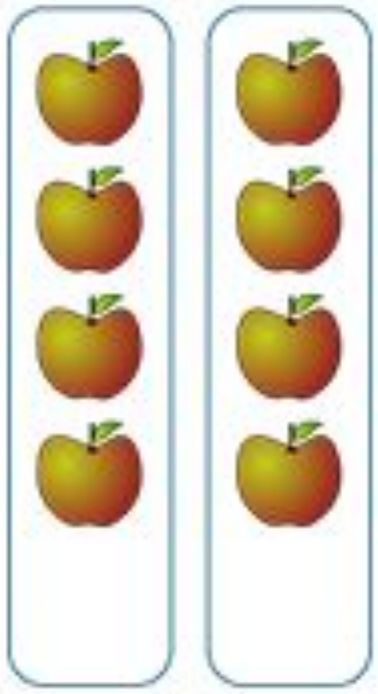
| Number | **0** | 1 | 2 | 3 | 4 | **5** | 6 | 7 | 8 | 9 | **10** | 11 | 12 | 13 | 14 | **15** | 16 | 17 | 18 | 19 | **20** | 21 | 22 | 23 | 24 | **25** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Counting in 5s | ✓ | | | | | ✓ | | | | | ✓ | | | | | ✓ | | | | | ✓ | | | | | ✓ |
| Counting in 10s | ✓ | | | | | | | | | | ✓ | | | | | | | | | | ✓ | | | | | |

# Knowledge of multiplication facts

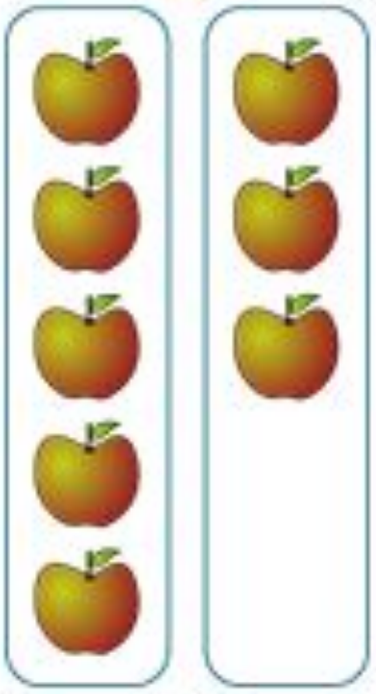
In KS1 there is a focus on understanding multiplication and division – based on knowledge of 2, 5 and 10 times tables

How have you ensured that children are secure with these facts?

**Max**

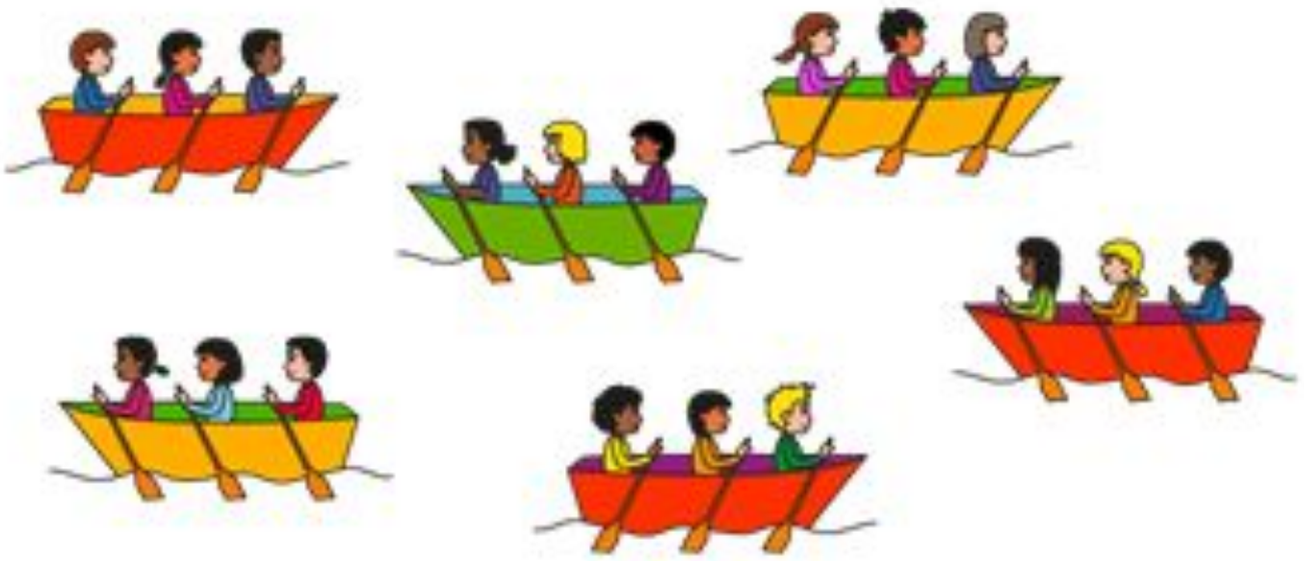


**Lucia**



**Equal** groups

**Unequal** groups



There are 6 equal groups. ✓

There are 3 equal groups. ✗

# Multiplication equations - with the product

There are 6 cars. There are 2 children in each car.

There are 2 children in each car. There are 6 cars.

**There are 12 children altogether.**

**6 x 2 = 12** **6 groups of 2 equals 12**

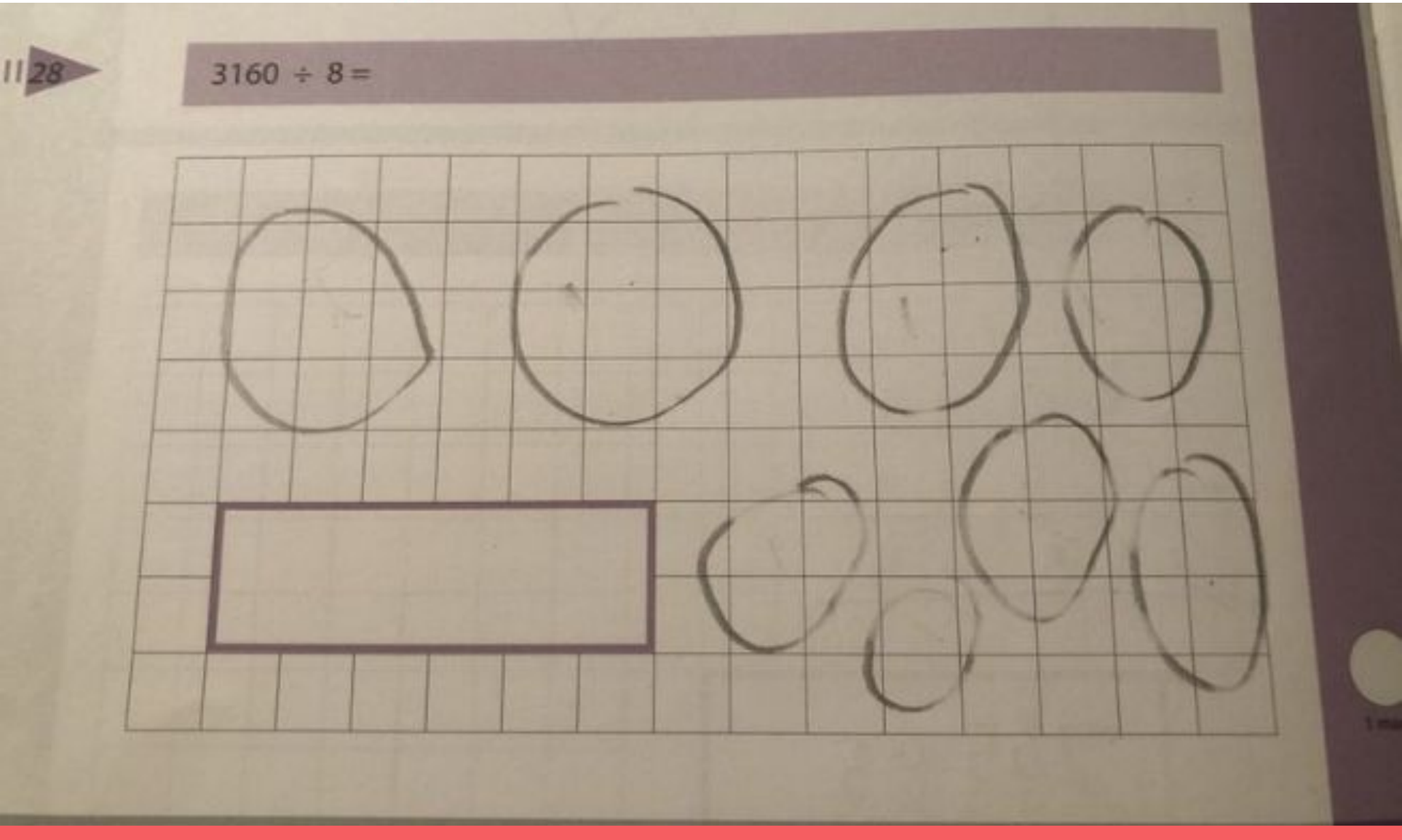
**2 x 6 = 12** **2 , 6 times equals 12**

# MISCONCEPTIONS

MathsHUBS

## Arrays

Arrays can limit children's understanding of multiplication to repeated addition as each 'dot' in the array often represents one.



| × | 40 | 2 |
|---|---|---|
| 5 | 200 | 10 |

$$40 \quad 2$$
$$\times \quad 5$$
$$200 + 10$$

$$\overset{1}{4}\ 2$$
$$\times\ 5$$
$$2\ 1\ 0$$

$$\overset{1}{4}\ 2$$
$$\times\ 3\ 5$$
$$2\ 1\ 0$$
$$+1\ 2\ 6\ 0$$
$$1\ 4\ 7\ 0$$

155
- 50 (10 x 5)
105
- 50 (10 x 5)
55
- 50 (10 x 5)
5
- 5 (1 x 5)
0

31 groups of 5 have been subtracted

Therefore 155 ÷ 5 = 31

$$7 \overline{)\ 2^2\ 5^4\ 4^2\ 8}$$
$$0\ 3\ 6\ 4$$

# Magic trick

Pick a number between 1 and 100 (don`t tell me)

X2

X5