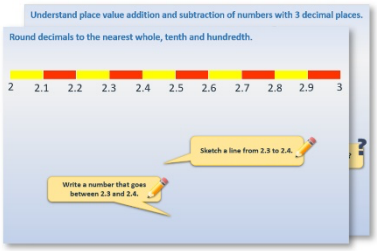
Year 3: Week 4, Day 2

Function machines to multiply and divide

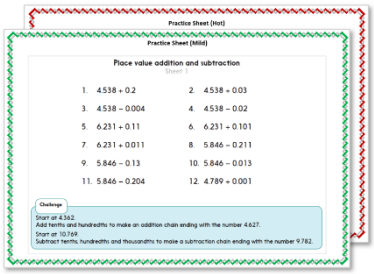
Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



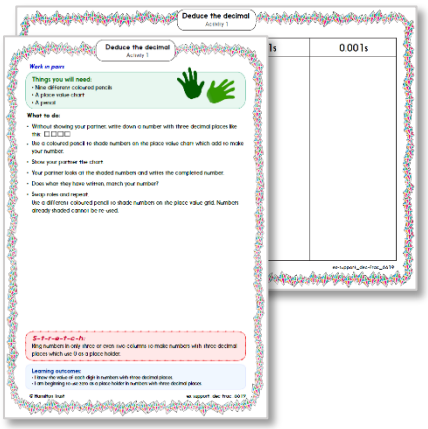
---

2. Tackle the questions on the **Practice Sheet**. There might be a choice of either Mild (easier) or Hot (harder)! Check the answers.



---

3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**

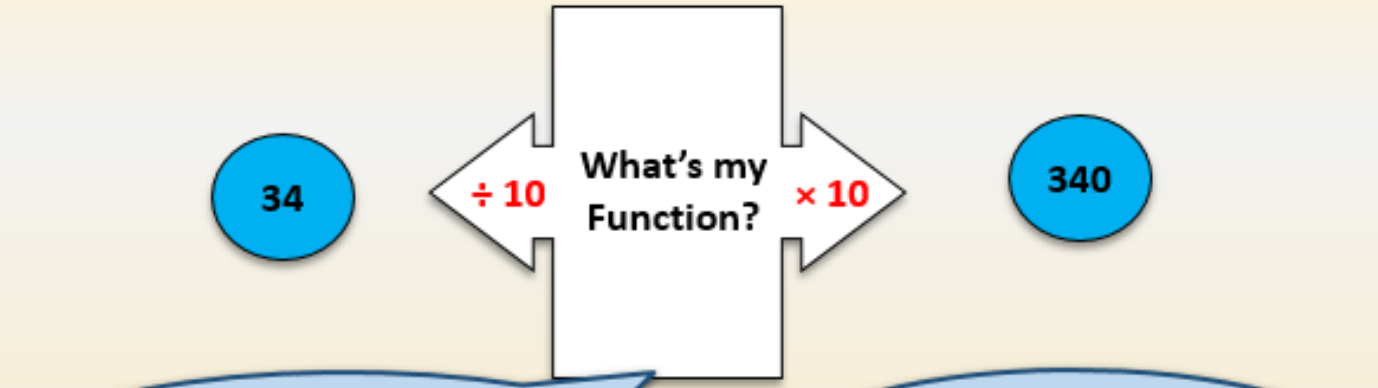


---

4. Think you've cracked it? Whizzed through the Practice Sheets? Have a go at the **Investigation**…

Learning Reminders

Understand that division is the inverse of multiplication.



What happened when 34 went into the **function machine?**

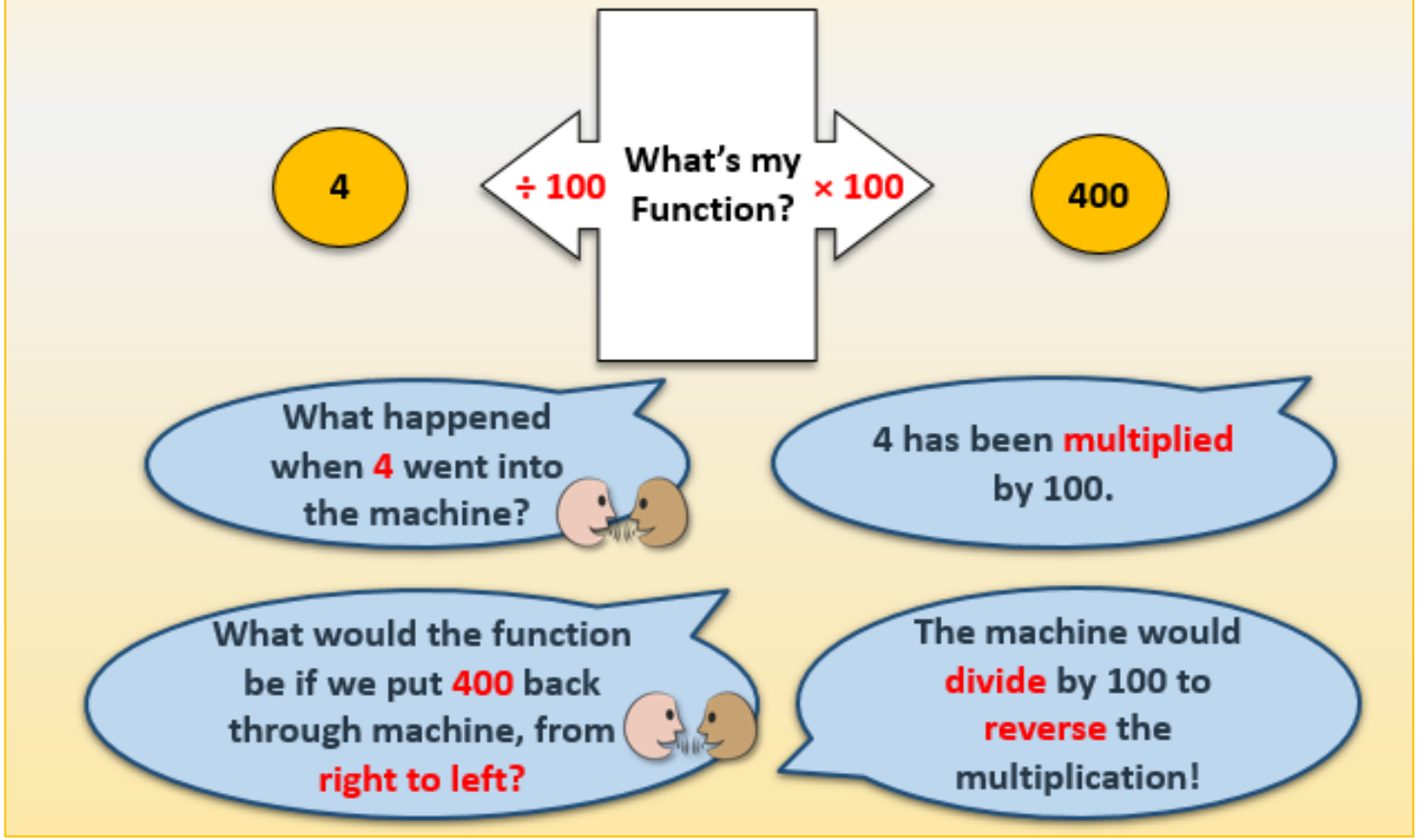
340 came out, 34 has been **multiplied** by 10.

What would the function be if we put **340** back through machine, from **right to left?**

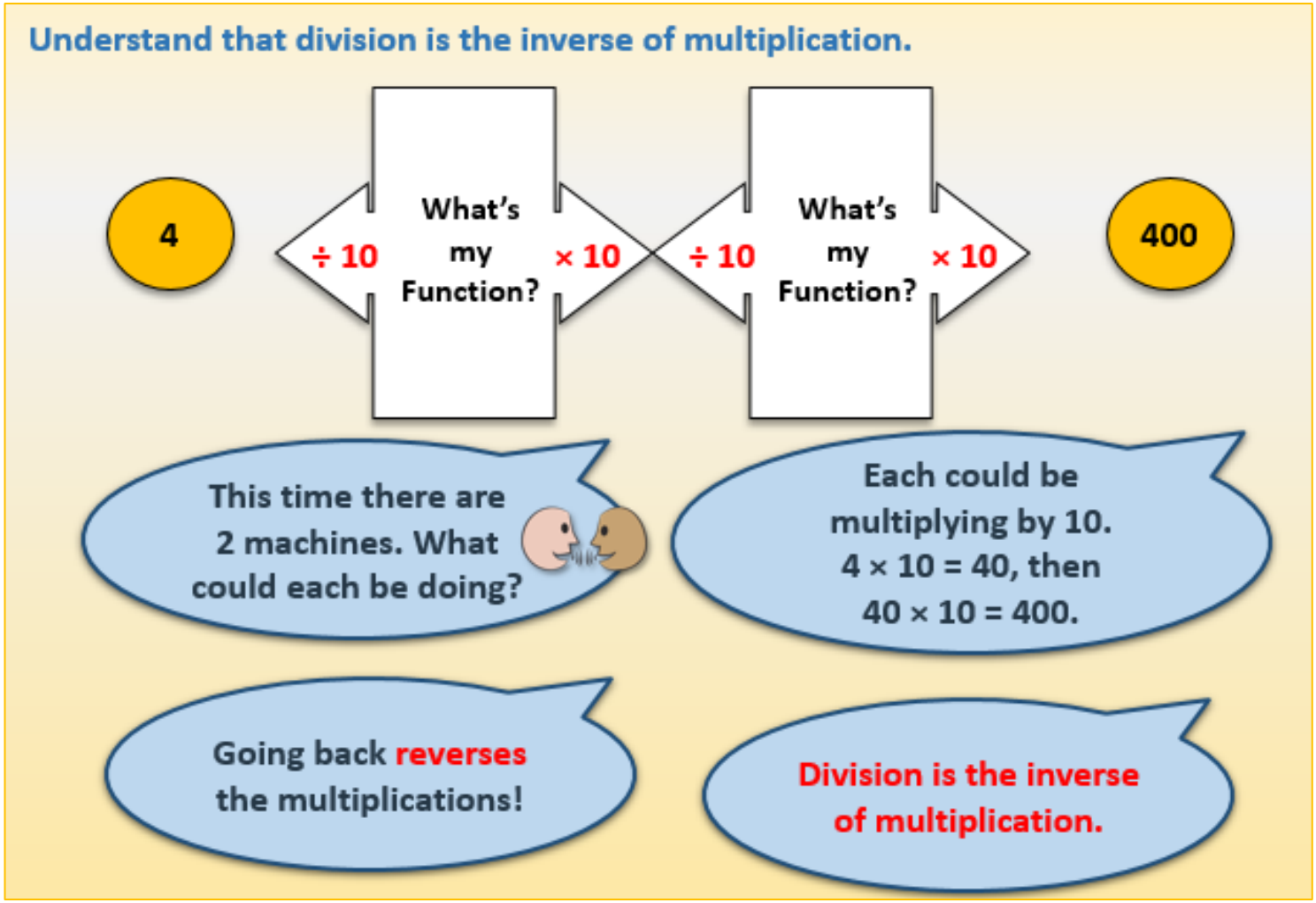
The machine would **divide** by 10 to **reverse** the multiplication!

Learning Reminders

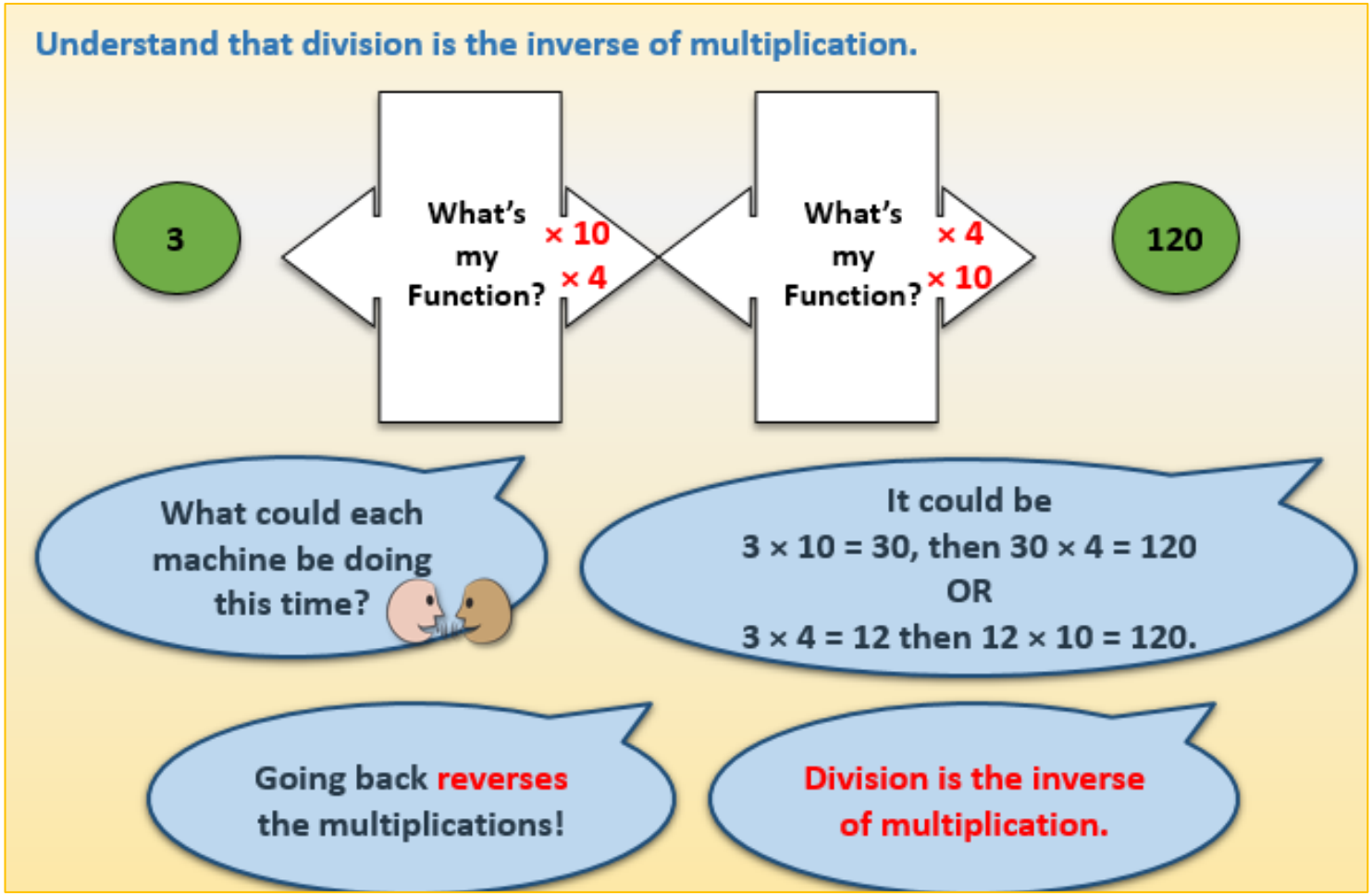
Understand that division is the inverse of multiplication.



Learning Reminders



Learning Reminders



Practice Sheet Mild

Multiplication and division practice

e.g.

2	→ x 10 ← ÷ 10	20

4	→ ←	20

2	→ ←	8

7	→ ←	700

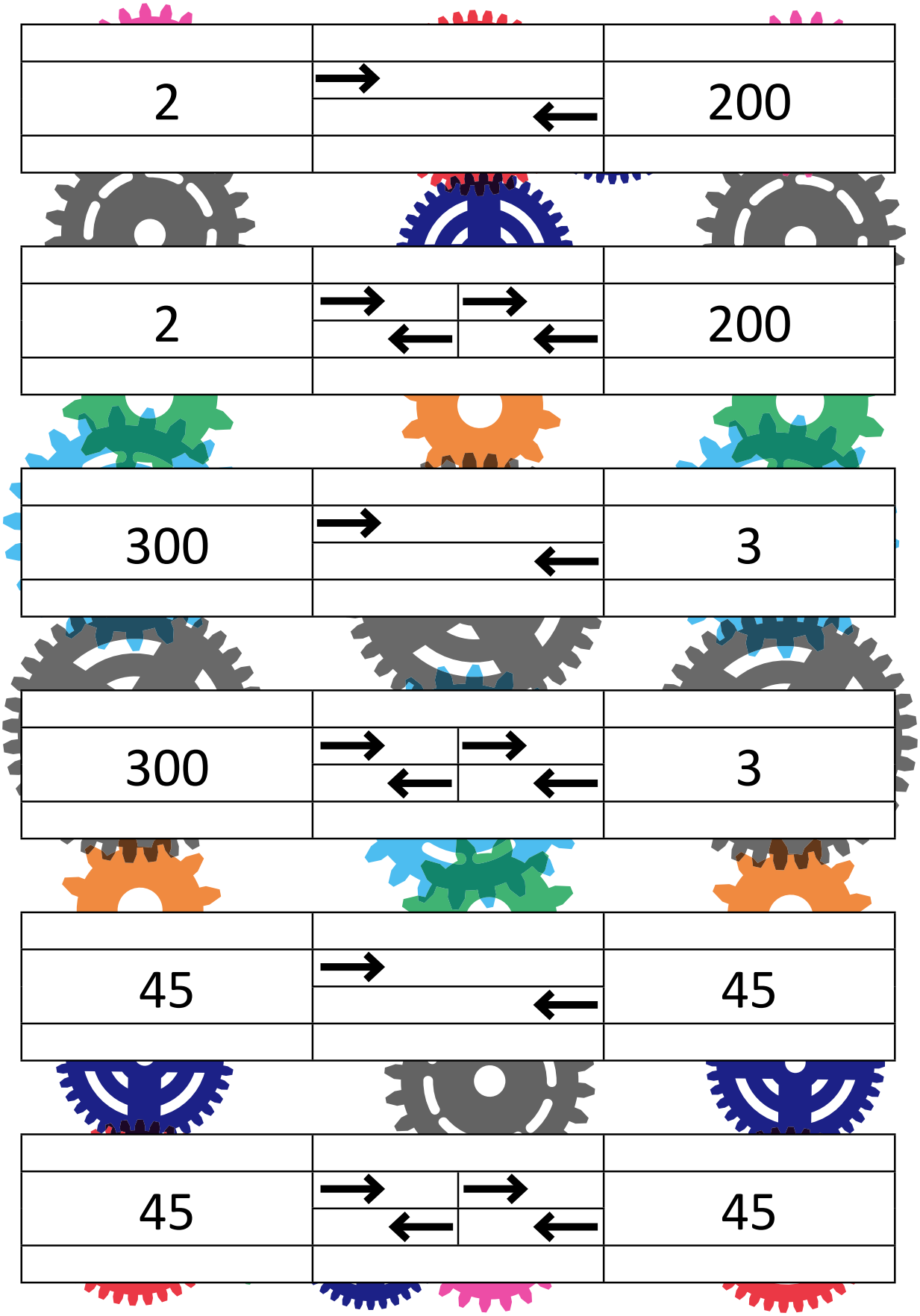
50	→ ←	10

60	→ ←	6

800	→ ←	8

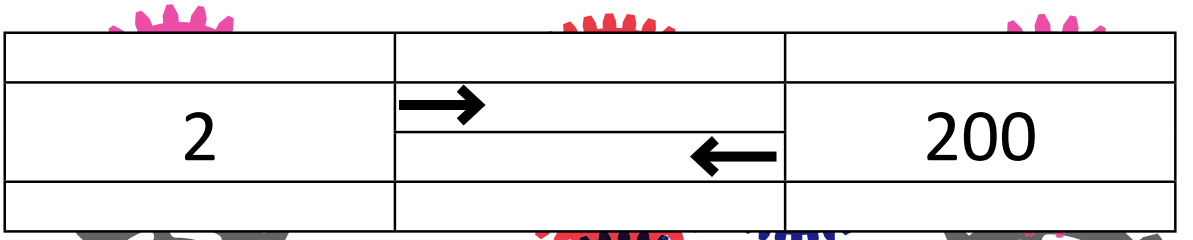
Practice Sheet Mild

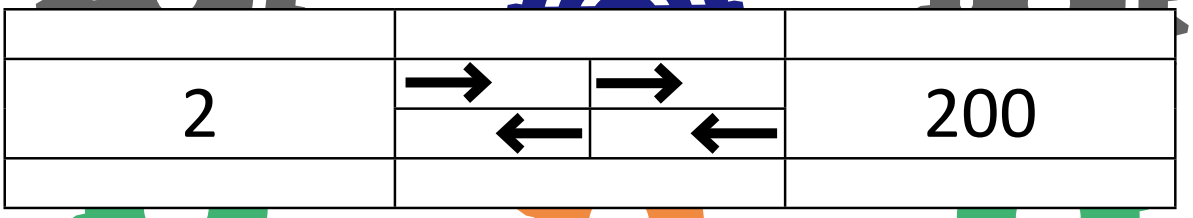
Multiplication and division practice

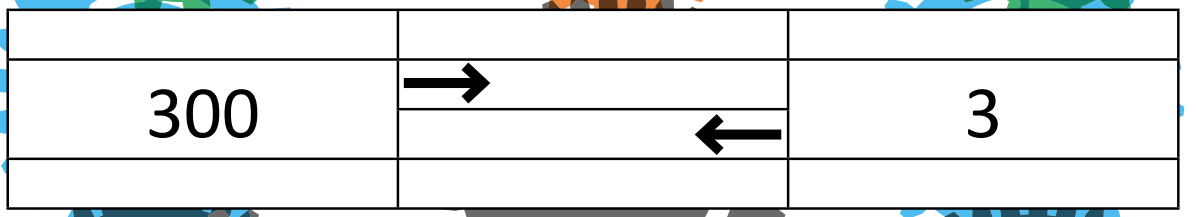


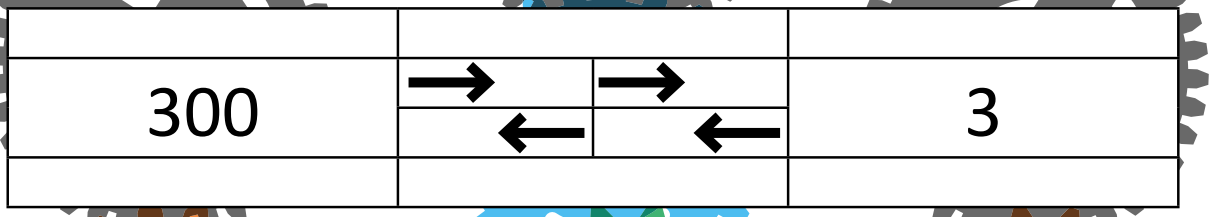
Practice Sheet Hot

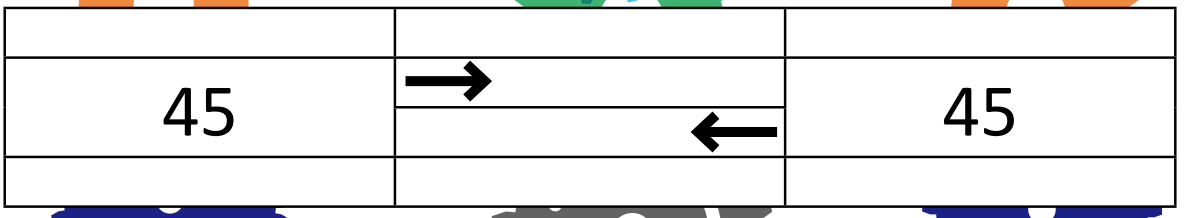
Multiplication and division practice

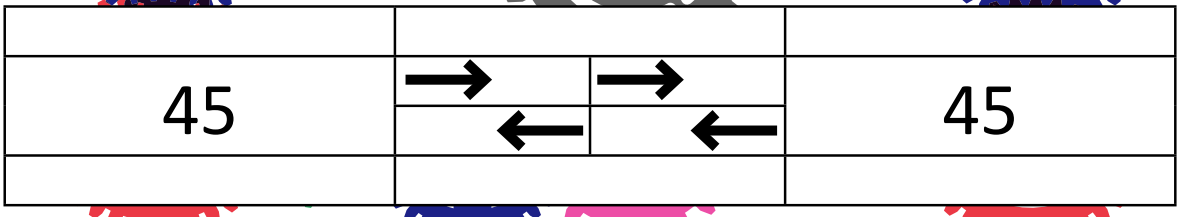






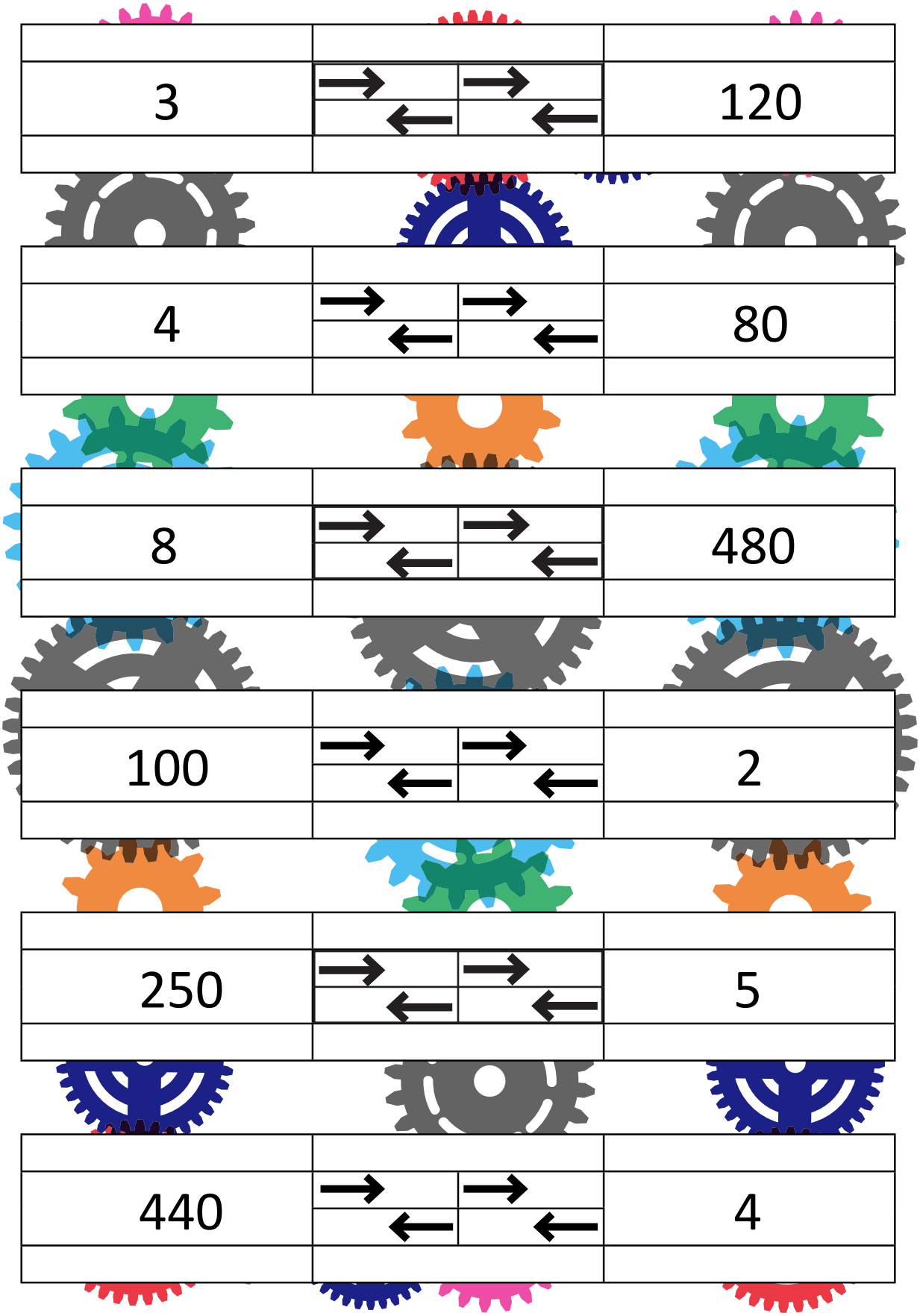






Practice Sheet Hot

Multiplication and division practice



Practice Sheet Answers

Multiplication and Division practice (Mild)

2 x 10 = 20
20 ÷ 10 = 2

4 x 5 =20
20 ÷ 5 = 4

2 x 4 = 8
8 ÷ 4 = 2

7 x 100 = 700
700 ÷ 100 = 7

50 ÷ 5 = 10
10 x 5 = 50

60 ÷ 10 = 6
6 x 10 = 60

800 ÷ 100 = 8
8 x 100 = 800

Multiplication and Division practice (Mild and Hot)

2 x 100 = 200
200 ÷ 100 = 2

2 x 10 x 10 =200
200 ÷ 10 ÷ 10 = 2

300 ÷ 100 = 3
3 x 100 = 300

300 ÷ 10 ÷ 10 = 3
3 x 10 x 10 = 300

or

300 ÷ 100 ÷ 1 = 3
3 x 100 x 1 = 300

45 x 1 = 45
45 ÷ 1 = 45

45 x 1 x 1 = 45
45 ÷ 1 ÷ 1 = 45

Multiplication and Division practice (Hot)

3 x 4 x 10 = 120
120 ÷ 10 ÷ 4 = 3

4 x 2 x 10 = 80
80 ÷ 10 ÷ 2 = 4

8 x 6 x 10 = 480
480 ÷ 10 ÷ 6 = 8

100 ÷ 10 ÷ 5 = 2
2 x 5 x 10 = 100

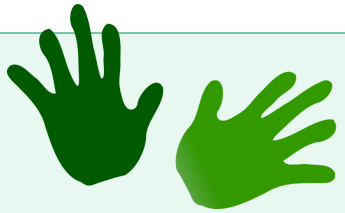
250 ÷ 10 ÷ 5 = 5
5 x 5 x 10 = 250

440 ÷ 10 ÷ 11 = 4
4 x 11 x 10 = 440

A Bit Stuck?
Digit dance

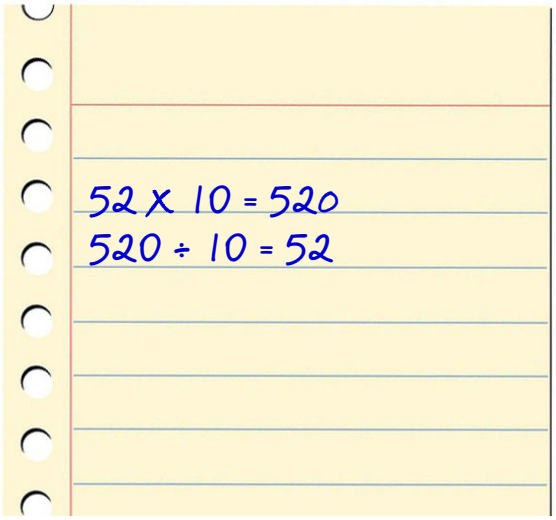
Play in pairs

Things you will need:
- A place value grid
- 1 to 9 digit cards
- A pencil



What to do:

- Take it in turns to shuffle the 1 to 9 digit cards.
- Take two and make a 2-digit whole number.
- Put the number in your place value grid.
- Multiply your number by 10. Write the multiplication sentence.
- Now work out what division is needed to to move the digits back to where they started. Write the division.
- How many pairs of number sentences can you write before time is up?



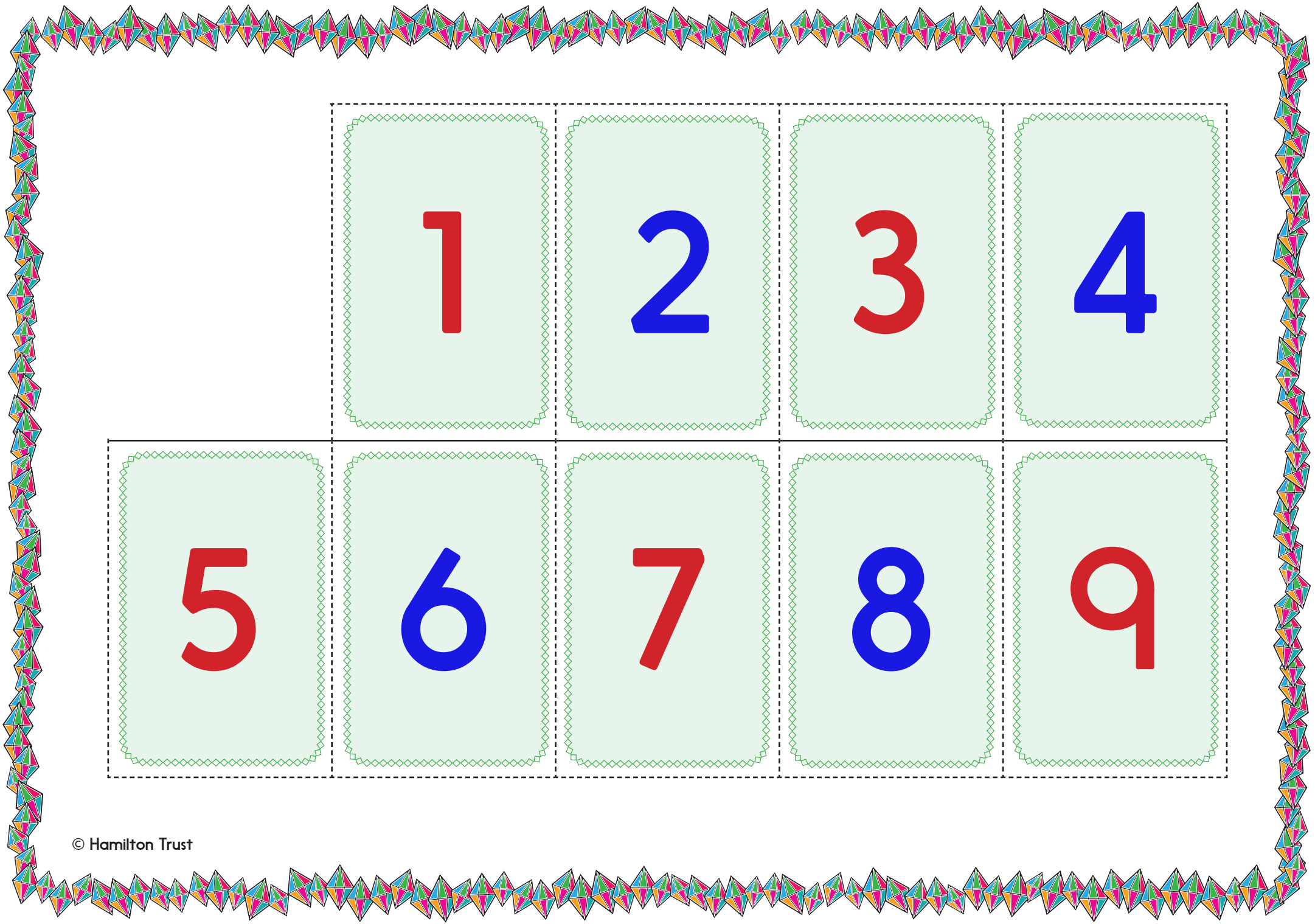
S-t-r-e-t-c-h:

Work out these mystery numbers.

☐☐ x 10 = 470 ☐☐☐ ÷ 10 = 38

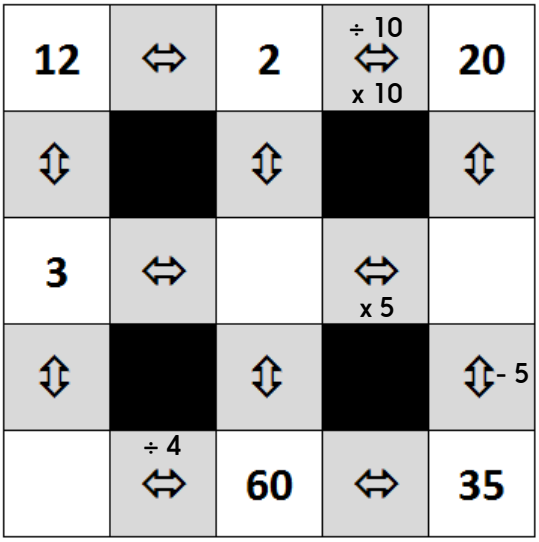
Learning outcomes:
- I can divide multiples of 10 by 10 understanding which way digits will move.
- I can multiply numbers by 10.
- I am beginning to write multiplications which are the inverses of divisions.

100s	10s	1s



Investigation
Lost logic

Look at this diagram. The numbers in each of the boxes are related to the numbers above, below, to the left and right. Each arrow represents an operation and its inverse.



1. Can you work out all of the **missing numbers** and **operations**?

2. Are there any numbers or operations that could have more than one answer?