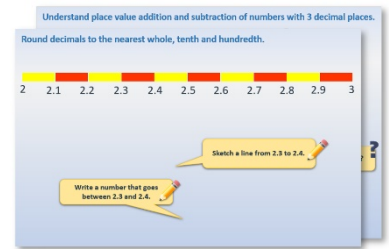


Week 14, Day 2

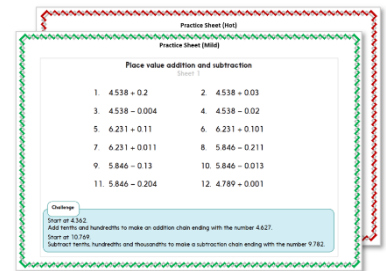
Halve 2-digit numbers

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

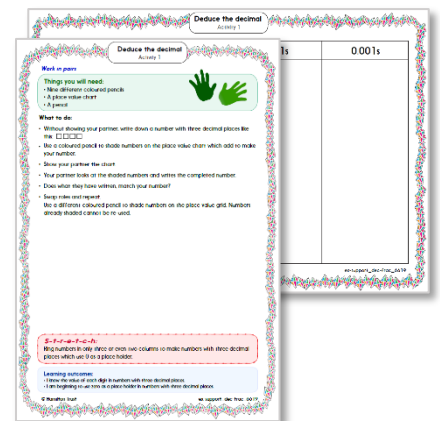
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



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

Revise halving numbers to 100 using partitioning.

What is **half of 48**?

Halve the 10s.
Halve the 1s.

The diagram shows the number 48 partitioned into 40 and 8. The 40 is represented by a blue trapezoid with '4' and '0', and the 8 is a green trapezoid with '8'. Below this, the same two trapezoids are shown separately, illustrating the partitioning process.

Half of 40 is **20**

Half of 8 is **4**

Recombine: Half of 48 is **24**

Revise halving numbers to 100 using partitioning.

What is **half of 56**?

Halve the 10s.
Halve the 1s.

The diagram shows the number 56 partitioned into 50 and 6. The 50 is represented by a blue trapezoid with '5' and '0', and the 6 is a green trapezoid with '6'. Below this, the same two trapezoids are shown separately, illustrating the partitioning process.

Half of 50 is **25**

Half of 6 is **3**

Recombine: Half of 56 is **28**

Learning Reminders

Revise halving numbers to 100 using partitioning.



What is **half of 45**?



Halve the 10s.
Halve the 1s.

45 is an odd number.

Remember that **half of 5 is $2\frac{1}{2}$** .

Half of 40 is **20**

Half of 5 is **$2\frac{1}{2}$**

Recombine: Half of 45 is **$22\frac{1}{2}$**

Revise halving numbers to 100 using partitioning.



What is **half of 75**?



Halve the 10s.
Halve the 1s.

Half of 70 is **35**

Half of 5 is **$2\frac{1}{2}$**

Recombine: Half of 75 is **$37\frac{1}{2}$**

75 has an odd 10s digit and an odd 1s digit which made the halving a little more difficult.

Practice Sheet Mild

Halving numbers

Halve the following numbers using partitioning:

1. 24

2. 62

3. 28

4. 44

5. 36

6. 55

Challenge

Now try these:

7. 68

8. 59

9. 77

10. 94

Practice Sheet Hot

Halving numbers

Halve the following numbers using partitioning:

1. 36

2. 65

3. 53

4. 77

5. 68

6. 86

Challenge

Now try these:

7. 71

8. 99

9. 124

10. 137

Practice Sheets Answers

Halving numbers (mild)

1.	24	$20 \div 2 = 10$	$4 \div 2 = 2$	So half of 24 is $10 + 2 = 12$
2.	62	$60 \div 2 = 30$	$2 \div 2 = 1$	So half of 62 is $30 + 1 = 31$
3.	28	$20 \div 2 = 10$	$8 \div 2 = 4$	So half of 28 is $10 + 4 = 14$
4.	44	$40 \div 2 = 20$	$4 \div 2 = 2$	So half of 44 is $20 + 2 = 22$
5.	36	$30 \div 2 = 15$	$6 \div 2 = 3$	So half of 36 is $15 + 3 = 18$
6.	55	$50 \div 2 = 25$	$5 \div 2 = 2\frac{1}{2}$	So half of 55 is $25 + 2\frac{1}{2} = 27\frac{1}{2}$

Challenge

7.	68	$60 \div 2 = 30$	$8 \div 2 = 4$	So half of 68 is $30 + 4 = 34$
8.	59	$50 \div 2 = 25$	$9 \div 2 = 4\frac{1}{2}$	So half of 59 is $25 + 4\frac{1}{2} = 29\frac{1}{2}$
9.	77	$70 \div 2 = 35$	$7 \div 2 = 3\frac{1}{2}$	So half of 77 is $35 + 3\frac{1}{2} = 38\frac{1}{2}$
10.	94	$90 \div 2 = 45$	$4 \div 2 = 2$	So half of 94 is $45 + 2 = 47$

Halving numbers (hot)

1.	36	$30 \div 2 = 15$	$6 \div 2 = 3$	So half of 36 is $15 + 3 = 18$
2.	65	$60 \div 2 = 30$	$5 \div 2 = 2\frac{1}{2}$	So half of 65 is $30 + 2\frac{1}{2} = 32\frac{1}{2}$
3.	53	$50 \div 2 = 25$	$3 \div 2 = 1\frac{1}{2}$	So half of 53 is $25 + 1\frac{1}{2} = 26\frac{1}{2}$
4.	77	$70 \div 2 = 35$	$7 \div 2 = 3\frac{1}{2}$	So half of 77 is $35 + 3\frac{1}{2} = 38\frac{1}{2}$
5.	68	$60 \div 2 = 30$	$8 \div 2 = 4$	So half of 68 is $30 + 4 = 34$
6.	86	$80 \div 2 = 40$	$6 \div 2 = 3$	So half of 86 is $40 + 3 = 43$

Challenge

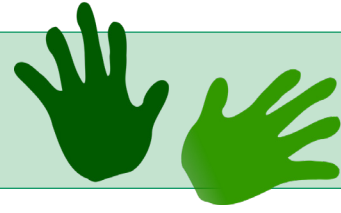
7.	71	$70 \div 2 = 35$	$1 \div 2 = \frac{1}{2}$	So half of 71 is $35 + \frac{1}{2} = 35\frac{1}{2}$
8.	99	$90 \div 2 = 45$	$9 \div 2 = 4\frac{1}{2}$	So half of 99 is $45 + 4\frac{1}{2} = 49\frac{1}{2}$
9.	124	$120 \div 2 = 60$	$4 \div 2 = 2$	So half of 120 is $60 + 2 = 62$
10.	137	$130 \div 2 = 65$	$7 \div 2 = 3\frac{1}{2}$	So half of 130 is $65 + 3\frac{1}{2} = 68\frac{1}{2}$

A Bit Stuck? Harder halves

Work in pairs

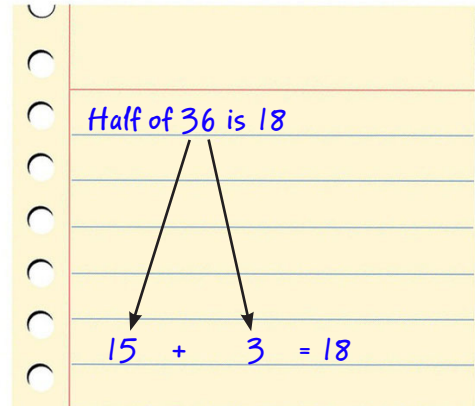
Things you will need:

- A set of 10s and 1s place value cards
- A pencil



What to do:

- Choose a number from the grid to halve. Make the number with place value cards.
- Partition, halve each part, then combine your answers. Use the list of halves of multiples of 10 on the flipchart you wrote together to help. If you find it helpful, draw a jotting.
- Write the halving sentence.
- Score 1 point if the 1s digit in the answer is 1, 2, 3, or 4. Score 2 points if the 1s digit in the answer is 6, 7, 8 or 9.
- Repeat for as many numbers as you can. Can you score more than 10 points altogether?



36	96	72	32
74	28	54	62
88	46	14	58

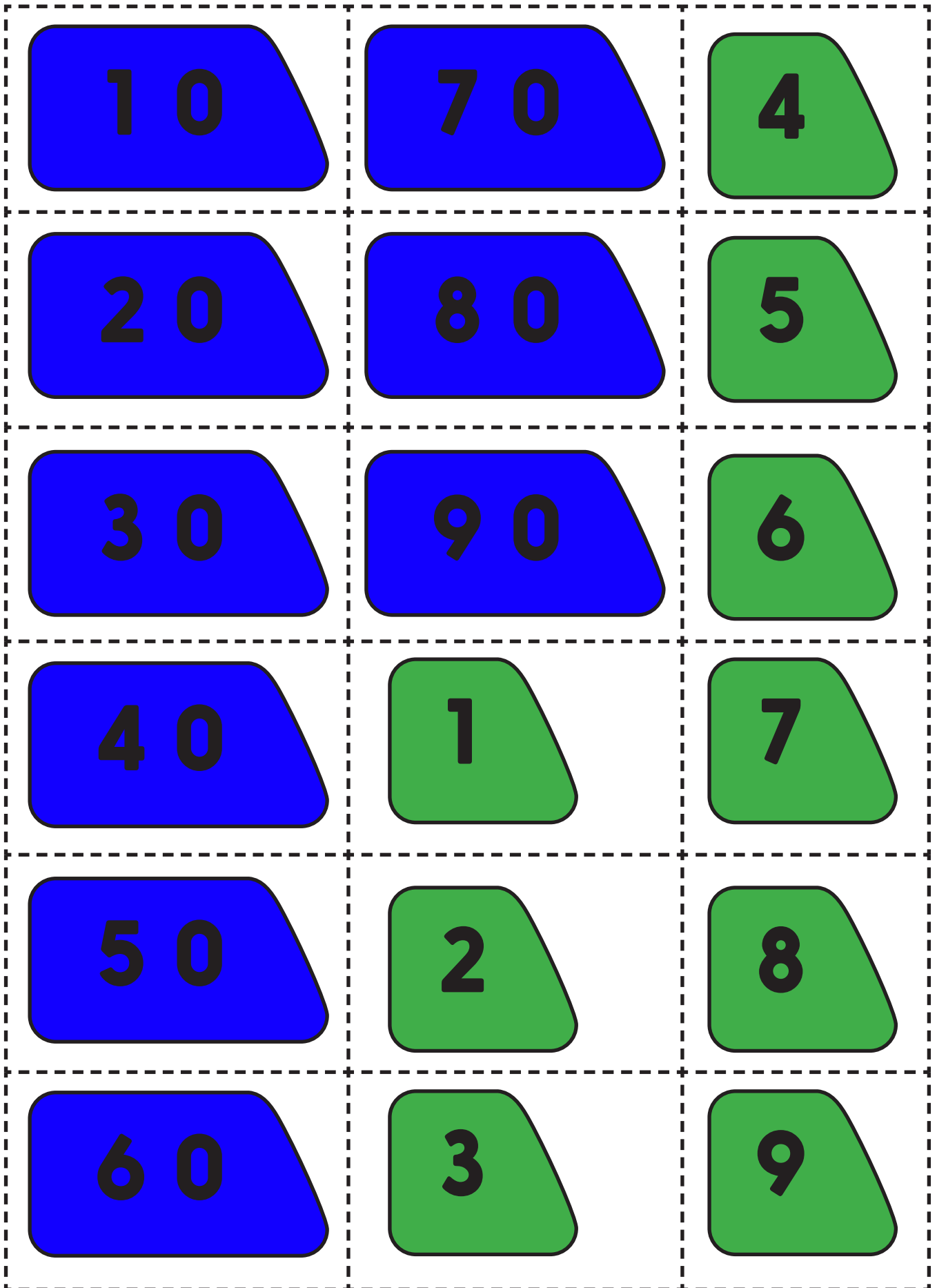
S-t-r-e-t-c-h:

Choose two of your halves to check with doubling.

Learning outcomes:

- I can halve even 2-digit numbers up to 100.
- I am beginning to check halving with doubling.

Place Value Cards



Investigation Chains

We are going to make chains of numbers.

There are two rules...

1. If a number is odd, add 1.

2. If it is even, halve it.

45 is odd, so we add 1.

Remember...

- Even numbers end in 0, 2, 4, 6 and 8.
- Odd numbers end in 1, 3, 5, 7 and 9.

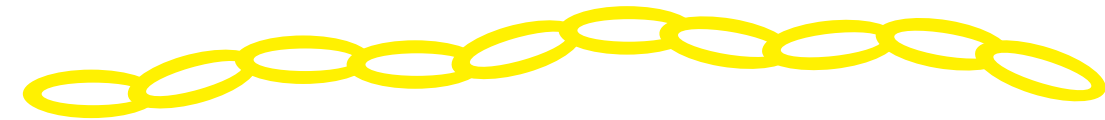
45

→ 46 → 23 → 24 → 12 → 6 → 3 → 4 → 2 → 1

46 is even, so we halve it.

This chain has 10 numbers in it.

Your challenge is to find a starting number which produces a chain with more than 10 numbers in it!



- Do bigger numbers give longer chains?
- If you want a longer chain, what do you want to happen when you halve a number...?