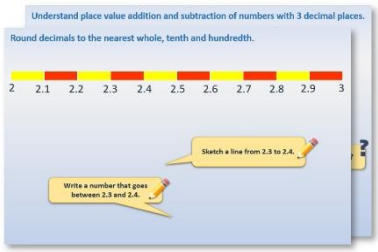
Year 4: Week 1, Day 5
Written division

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.



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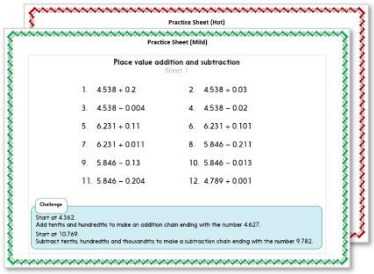
2. Tackle the questions on the **Practice Sheet**.
   There might be a choice of either Mild (easier) or Hot (harder)!
   Check the answers.



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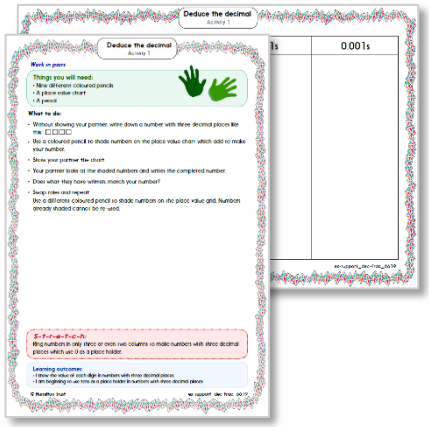
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**



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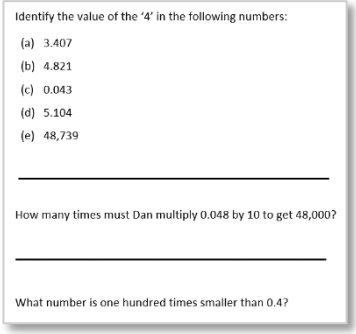
4. Have I mastered the topic? A few questions to **Check your understanding**.
   Fold the page to hide the answers!



Learning Reminders

Divide 2-digit numbers by 1-digit numbers (with remainders) on the empty number line.

Remember that multiplication and division are related.

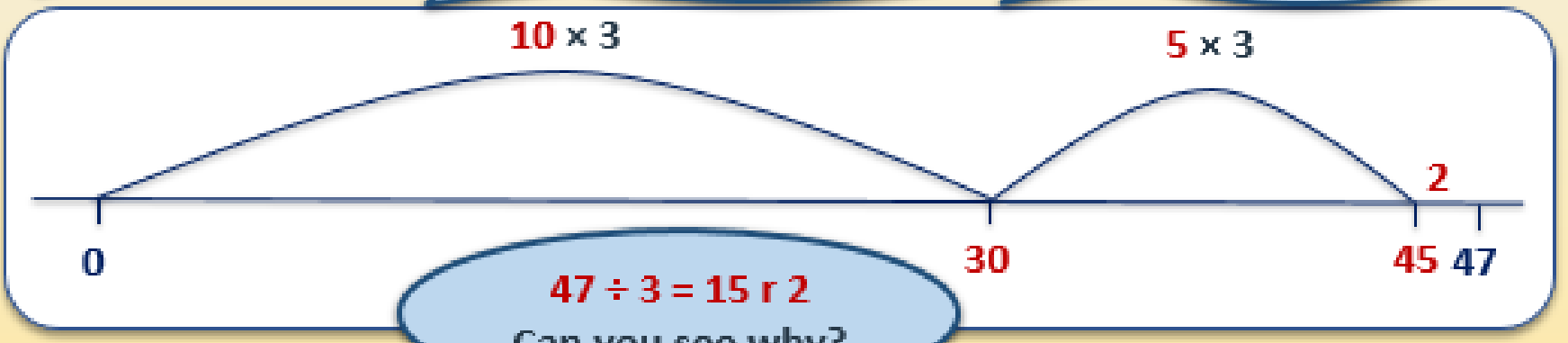
Suppose we want to find 47 ÷ 3.

We can also write that as □ × 3 = 47.

Let's try 47 ÷ 3 on an empty number line.

How many 3s are in 47? More than 10? Fewer than 10? More than 20?

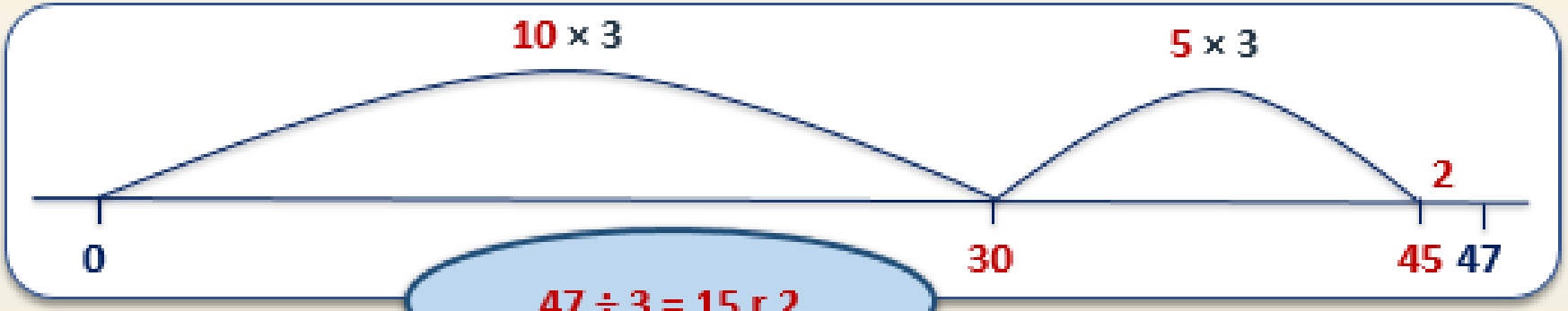
17 left. How many 3s are in 17? How many left over?



47 ÷ 3 = 15 r 2
Can you see why?

Learning Reminders

Divide 2-digit numbers by 1-digit numbers (with remainders), using a vertical layout.



47 ÷ 3 = 15 r 2

This is another way to record the same steps in the division.

Are there more than ten 3s in 47? Yes.

More than 20? No, so we can subtract 10 lots of 3, 30. We write 10 at the top.

What's left? 17. How many 3s are there in 17? 5 and 2 left over, We write 5 r 2 at the top.

```
  10 + 5 r 2
3 |47
  - 30
  ----
   17
  - 15
  ----
    2
```

Learning Reminders

Divide 2-digit numbers by 1-digit numbers (with remainders), using a vertical layout.

Let's try the new vertical method for 67 ÷ 3.

Are there more than 10 3s in 67? More than 20 3s?

There are more than 20 3s in 67, so we subtract 60 and write 20 at the top.

There are 2 3s in 7 with 1 left over.

$$
\begin{array}{r}
20 + 2 \text{ r } 1 \\
3\overline{)67} \\
-\,60 \\
\hline
7 \\
-\,6 \\
\hline
1
\end{array}
$$

67 ÷ 3 = 22 r 1

Practice Sheet Mild

Dividing with remainders

38 ÷ 3	43 ÷ 3	56 ÷ 3
47 ÷ 4	54 ÷ 4	59 ÷ 4
53 ÷ 5	61 ÷ 5	74 ÷ 5

Challenge

Write three different divisions where these statements are true:

- A 2-digit number is divided by 3
- The answer is more than 15
- The remainder is 2

Practice Sheet Hot

Dividing with remainders

1. $77 \div 5$
2. $113 \div 5$
3. $53 \div 4$
4. $75 \div 6$
5. $70 \div 3$
6. $93 \div 4$
7. $86 \div 6$
8. $100 \div 9$
9. $80 \div 3$
10. $97 \div 5$
11. $107 \div 4$
12. $137 \div 5$
13. $98 \div 6$
14. $117 \div 6$
15. $120 \div 9$

Challenge

Write three different divisions where these statements are true:

- A 2-digit number is divided by 3
- The answer is more than 15
- The remainder is 2

Practice Sheet Answers

Dividing with remainders (mild)

38 ÷ 3 = 12 r2	43 ÷ 3 = 14 r1	56 ÷ 3 = 18 r2
47 ÷ 4 = 11 r3	54 ÷ 4 = 13 r2	59 ÷ 4 = 14 r3
53 ÷ 5 = 10 r3	61 ÷ 5 = 12 r1	74 ÷ 5 = 14 r4

Challenge

Write three different divisions where these statements are true:

- A 2-digit number is divided by 3
- The answer is more than 15
- The remainder is 2

e.g. 59 ÷ 3 = 19 r2 71 ÷ 3 = 23 r2 89 ÷ 3 = 29 r2 23 ÷ 3 = 7 r2 74 ÷ 3 = 24 r2 65 ÷ 3 = 21 r2

Dividing with remainders (hot)

1. 77 ÷ 5 = 15 r2
2. 113 ÷ 5 = 22 r3
3. 53 ÷ 4 = 13 r1
4. 75 ÷ 6 = 12 r3
5. 70 ÷ 3 = 23 r1
6. 93 ÷ 4 = 23 r1
7. 86 ÷ 6 = 14 r2
8. 100 ÷ 9 = 11 r1
9. 80 ÷ 3 = 26 r2
10. 97 ÷ 5 = 19 r2
11. 107 ÷ 4 = 26 r3
12. 137 ÷ 5 = 27 r2
13. 98 ÷ 6 = 16 r2
14. 117 ÷ 6 = 19 r3
15. 120 ÷ 9 = 13 r3

Challenge

Write three different divisions where these statements are true:

- A 2-digit number is divided by 3
- The answer is more than 15
- The remainder is 2

e.g. 59 ÷ 3 = 19 r2 71 ÷ 3 = 23 r2 89 ÷ 3 = 29 r2 23 ÷ 3 = 7 r2 74 ÷ 3 = 24 r2 65 ÷ 3 = 21 r2

A Bit Stuck?
Left overs

Work in pairs, but record your work on your own sheet.

Things you will need:
- 0 to 100 beaded lines
- A pencil

What to do:

- Use chunking to work out the answers to these divisions.
- Remember to draw a big jump of 10 times the number you are dividing by. Then look to see how much is left.
- Work out at least five answers.

38 ÷ 3

64 ÷ 5

50 ÷ 4

76 ÷ 5

43 ÷ 3

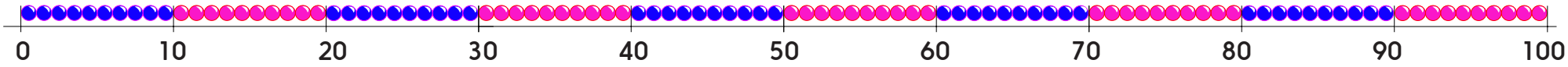
72 ÷ 5

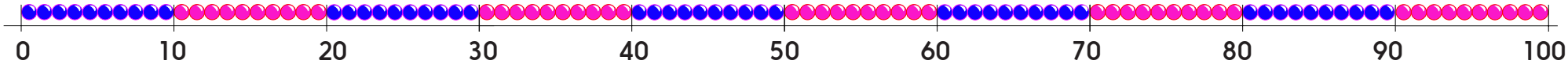
61 ÷ 4

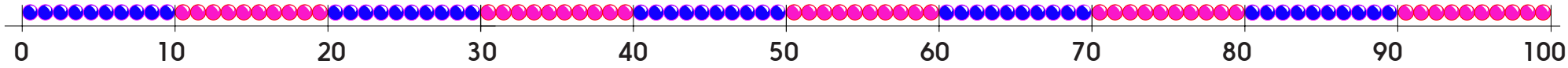
S-t-r-e-t-c-h:
Draw your own number line jottings to work out the answers.

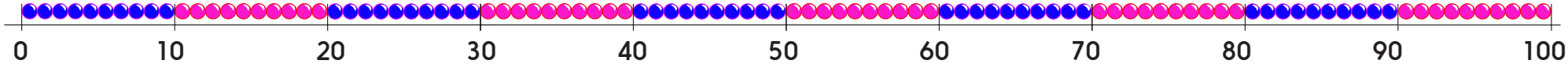
Learning outcomes:
- I can use chunking on a beaded line to divide numbers just beyond the times tables (with remainders).
- I am beginning to draft my own number line jottings when using chunking (with remainders).

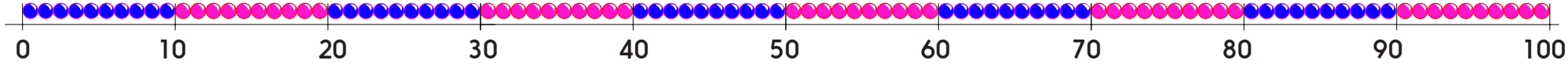
A Bit Stuck?
Left overs











Check your understanding

Questions

Draw a number line to solve these two divisions.

(i) 115 ÷ 5

(ii) 65 ÷ 5

What is the relationship between the 2nd hop on the two lines?

Look at the remainders in each of these divisions.

Compare the remainder with the divisor.

(a) 54 ÷ 4

(b) 99 ÷ 6

(c) 100 ÷ 8

Can you write another division where the remainder is half the divisor?

Fole here to hide answers

Check your understanding

Answers

Use a number line to solve these two divisions.

(i) 115 ÷ 5 23 (Jumps of 20 and 3).

(ii) 65 ÷ 5 13 (Jumps of 10 and 3)

What is the relationship between the 2nd hop on the two lines? In each case it is how many 5s in 15.

Look at the remainders in each of these divisions.

Compare the remainder with the divisor.

(a) 54 ÷ 4 13 r 2

(b) 99 ÷ 6 16 r 3

(c) 100 ÷ 8 12 r 4

Can you write another division where the remainder is half the divisor? Many possible answers – in each case the number divided will be halfway between two multiples of the divisor.