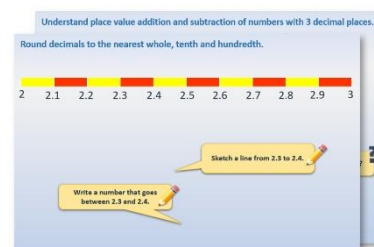


Week 13, Day 3

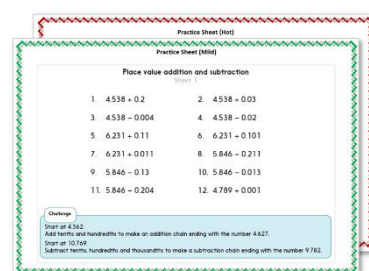
Understand and use equivalence.

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

1. Start by carefully reading through the **Learning Reminders**.



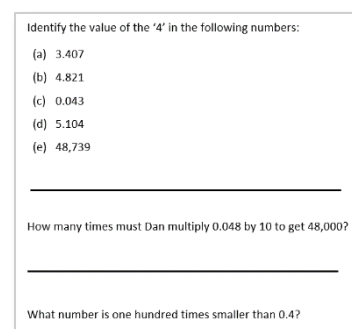
2. Tackle the questions on the **Practice Sheet**.
There might be a choice of either **Mild** (easier) or **Hot** (harder)!
Check the answers.



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



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



Learning Reminders

Understand and use equivalence.

Each side of the equals sign must be *equal* - the equations must *balance*.

Check these pairs.

$$134 + 8 = 200 - 58$$

$$32 \times 4 = 64 \times 2$$

$134 + 8$ and $200 - 58$
each equal 142.

32×4 and 64×2
each equal 128.

It's like a see-saw.
If we add weight to one side, we must
add the same amount to the other side
to make it balance...!



Learning Reminders

Understand and use equivalence.

Find the missing numbers that will make these equations balance.

Remember each side of the equals sign must be **equal**.

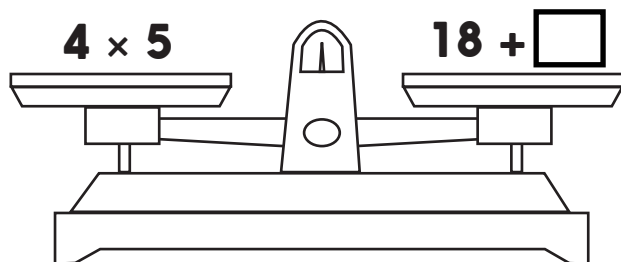
$$48 \div 6 = 2 \times \square$$

$$3.6 \times \square = 10 - 2.8$$

Answers

2
4

Practice Sheet Mild Equivalence



1. $4 \times 5 = 18 + \square$

2. $20 - 6 = \square \times 7$

3. $34 + 27 = 100 - \square$

4. $45 \div 5 = 18 \div \square$

5. $\square \times 6 = 80 - 8$

6. $2 \times 12.5 = 100 \div \square$

7. $3.4 + \square = 12.6 - 7.6$

8. $\square \div 8 = 84 \div 12$

Challenge

Make up your own equations, using a mix of operations in each one.

Practice Sheet Hot Equivalence

1. $4 \times 5 = 18 + \square$

5. $\square \times 6 = 80 - 8$

2. $20 - 6 = \square \times 7$

6. $2 \times 12.5 = 100 \div \square$

3. $34 + 27 = 100 - \square$

7. $3.4 + \square = 12.6 - 7.6$

4. $45 \div 5 = 18 \div \square$

8. $\square \div 8 = 84 \div 12$ $\square$

Challenge

Investigate the pairs of numbers you could put into these equations to make the left and right hand sides equivalent.

Find at least 3 different solutions for each.

$$30 \times \square = \square + 20 \quad \square - 5 = \square \div 2$$

Practice Sheets Answers

Equivalence (mild)

1. $4 \times 5 = 18 + 2$
2. $20 - 6 = 2 \times 7$
3. $34 + 27 = 100 - 39$
4. $45 \div 5 = 18 \div 2$
5. $12 \times 6 = 80 - 8$
6. $2 \times 12.5 = 100 \div 4$
7. $3.4 + 1.6 = 12.6 - 7.6$
8. $56 \div 8 = 84 \div 12$

Equivalence (hot)

1. $4 \times 5 = 18 + 2$
2. $20 - 6 = 2 \times 7$
3. $34 + 27 = 100 - 39$
4. $45 \div 5 = 18 \div 2$
5. $12 \times 6 = 80 - 8$
6. $2 \times 12.5 = 100 \div 4$
7. $3.4 + 1.6 = 12.6 - 7.6$
8. $56 \div 8 = 84 \div 12$

Challenge

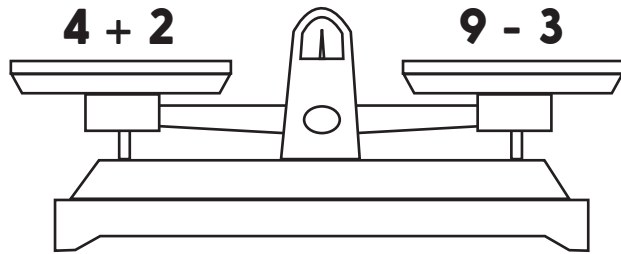
Investigate the pairs of numbers you could put into these equations to make the left and right hand sides equivalent. Find at least 3 different solutions for each.

Accept any pairs of numbers that satisfy the equality, e.g.

$$30 \times 3 = 70 + 20$$

$$37 - 5 = 64 \div 2$$

A Bit Stuck? Balance



What is the missing number that will make each of these balance?

1. $7 + 3 = 6 + \square$

5. $16 - 7 = \square + 5$

2. $3 + 17 = \square + 11$

6. $5 \times 4 = 2 \times \square$

3. $\square + 40 = 50 + 30$

7. $12 \div 2 = \square - 15$

4. $91 + \square = 30 + 70$

8. $\square + 15 = 6 \times 5$

Check your understanding

Questions

How many times must I add 7 to 7,728 get to 7,777?

Subtract 205 from each of...

- 12,321
 - 45,254
 - 20,062
-

What will the ones digit of your answer be if you carry out the following sequence?

1. Start with 30,460.
 2. Add 9999
 3. Subtract 999
 4. Add 99
 5. Subtract 9
 6. What's your final number?
-

What numbers must be subtracted from 21,234 to leave:

- 9999
 - 19,235
 - 21,035
-

Complete each sentence:

$$£4.36 + \square = £5 \quad \quad £6.72 + \square = £10$$

$$4.83 + \square = 10$$

Write the value of each shape.

$$701 - \star = 3 \times 152 \quad \quad (6.25 \times 6) + \blacklozenge = 120 \div 3$$

$$100 - 55.68 = \frac{1}{2} \text{ of } \triangle$$

Here is an equation with two empty spaces.

What ONE number will make the equation balance?

$$(34 \times 5) - \square = 4 \times \square \times 4$$

Answers on next page

Check your understanding

Answers

How many times must I add 7 to 7,728 get to 7,777? 7 times.

Subtract 205 from each of...

- 12,321 12,116
- 45,254 45,049
- 20,062 19,857

If done mentally, check children are jotting down part-answers, e.g. 12,321, 12,121 (subtracting 200), 12,116 (subtracting 5 more). Encourage children to add 205 back to their answers to check.

What will the ones digit of your answer be if you carry out the following sequence? 0, same as the starting number since nine 1s are twice added and twice subtracted.

1. Start with 30,460.
2. Add 9999 40,459
3. Subtract 999 39,460
4. Add 99 39,559
5. Subtract 9 39,550
6. What's your final number? 39,550

Check children make the right adjustments, e.g. when adding 9999, add 10,000 then subtract 1; when subtracting 999, subtract 1000 then add 1.

What numbers must be subtracted from 21,234 to leave:

- 9999 11,235
 - 19,235 1,999
 - 21,035 199
-

Complete each sentence:

$$£4.36 + [64\text{p or }£0.64] = £5 \quad £6.72 + [£3.28] = £10$$

$$4.83 + [5.17] = 10$$

Write the value of each shape.

$$701 - 245 = 3 \times 152 \quad (6.25 \times 6) + 2.5 = 120 \div 3$$

$$100 - 55.68 = \frac{1}{2} \text{ of } 88.64$$

Here is an equation with two empty spaces.

What ONE number will make the equation balance?

$$(34 \times 5) - 10 = 4 \times 10 \times 4$$