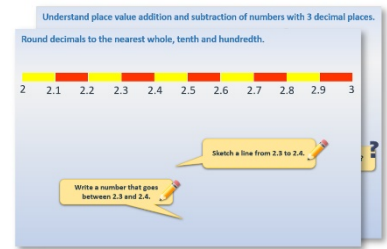


Week 5, Day 1

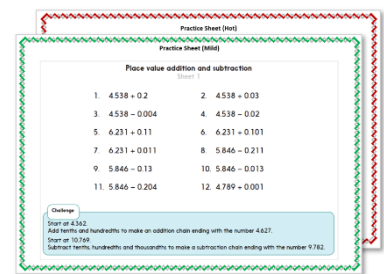
Short multiplication

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

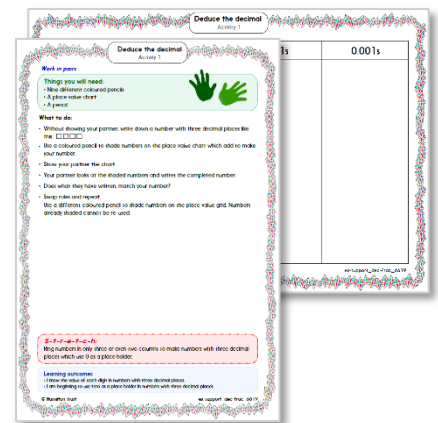
1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



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

Use short multiplication to multiply 4-digit numbers by 1-digit numbers.

2341

5372

4278

6143

3

5

4

8

Target 20,000

Decide which 4-digit number to multiply by a number card.

You are aiming for an answer as close to 20,000 as possible. You can use short multiplication or the grid method....

How close to 20,000 were you?

How did you decide which 4-digit number to use?
Did rounding help?

Learning Reminders

Use short multiplication to multiply 4-digit numbers by 1-digit numbers.

2341

5372

4278

6143



$$\begin{array}{r} * 2341 \\ \times \quad 8 \\ \hline 23 \\ \hline 18728 \\ * * \end{array}$$

×	2000	300	40	1	
8	16000	2400	320	8	18728

This 'grid method' is using partitioning.

* We've tended to use this formal written method, **but carrying digits below the line.

Learning Reminders

Use short multiplication to multiply 4-digit amounts of money by single-digit numbers; Use rounding to approximate.



**Sony MDR-ZX100
Outdoor Headband
Headphones -
Black by Sony
(25 Mar 2011)**
£23.67

Roughly how much would it cost to buy 3 of these?
Round to the nearest pound to estimate the cost.

$$3 \times \text{£}23.67$$

×	£20	£3	60p	7p	
3	£60	£9	£1.80	21p	£71.01

$$3 \times 60\text{p} = \text{£}1.80$$

Add the pounds, and then the pence.

$$\begin{array}{r} * \\ \text{£} 23.67 \\ \times \quad 3 \\ \hline ** \quad 122 \\ \text{£} 71.01 \\ \hline * \quad * \quad * \end{array}$$

$$3 \times 60\text{p} + 20\text{p} = \text{£}2$$

*In class we have tended to use the column method.

** We have also carried below the line (doorstep).

Practice Sheet Mild

Money multiplication practice

Use a written method to calculate the answers, but watch out for a few where you could use a mental method instead.

1. $3 \times \text{£}5.28$

2. $5 \times \text{£}2.99$

3. $4 \times \text{£}5.79$

4. $4 \times \text{£}4.16$

5. $3 \times \text{£}2.63$

6. $8 \times \text{£}4.43$

7. $7 \times \text{£}5.87$

8. $3 \times \text{£}25.01$

9. $6 \times \text{£}46.14$

10. $4 \times \text{£}25.42$

11. $8 \times \text{£}63.54$

12. $5 \times \text{£}32.45$

13. $4 \times \text{£}11.11$

14. $8 \times \text{£}52.69$

15. $7 \times \text{£}86.74$

On the more challenging ones, estimate first (round and adjust).

Challenge

Which will have a larger total? $\text{£}34.34 \times 4$ or $\text{£}43.43 \times 3$
Can you say before you work them out to check?
Were you correct?

Practice Sheet Hot

Multiplying amounts of money

Choose a number from 3 to 9.

Choose one of these prices to multiply by your chosen single-digit number.

£45.19 £26.47 £53.28 £42.75

You are aiming for an answer as close to £200 as possible!

Repeat, with a different single-digit number each time.

Which answer was closest to £200?

Practice Sheet Answers

Money multiplication practice (mild)

1. $3 \times \text{£}5.28 = \text{£}15.84$
2. $5 \times \text{£}2.99 = \text{£}14.95$
3. $4 \times \text{£}5.79 = \text{£}23.16$
4. $4 \times \text{£}4.16 = \text{£}16.64$
5. $3 \times \text{£}2.63 = \text{£}7.89$
6. $8 \times \text{£}4.43 = \text{£}35.44$
7. $7 \times \text{£}5.87 = \text{£}41.09$
8. $3 \times \text{£}25.01 = \text{£}75.03$
9. $6 \times \text{£}46.14 = \text{£}276.84$
10. $4 \times \text{£}25.42 = \text{£}101.68$
11. $8 \times \text{£}63.54 = \text{£}508.32$
12. $5 \times \text{£}32.45 = \text{£}162.25$
13. $4 \times \text{£}11.11 = \text{£}44.44$
14. $8 \times \text{£}52.69 = \text{£}421.52$
15. $7 \times \text{£}86.74 = \text{£}607.18$

Challenge

$4 \times \text{£}34.34 = \text{£}137.36$ and $3 \times \text{£}43.43 = \text{£}130.29$ so the first is larger.

Multiplying amounts of money (hot)

e.g. $8 \times \text{£}26.47 = \text{£}211.76$

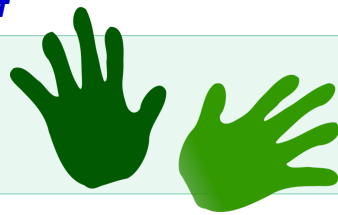
Can you get an answer closer to $\text{£}200$?

A Bit Stuck? Aim for 2000

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

Things you will need:

- 100s, 10s and 1s place value cards
- A pencil



What to do:

- Spread out the 100, 200, 300, 400, 500 and 600 cards.
Spread out the 10, 20, 30, 40, 50 and 60 cards. Spread out the 1, 2, 3, 4, 5 and 6 cards.
- Choose one card from each group to make a 3-digit number.
- Use the grid method to multiply this by any number you choose from 2 to 9.
You are aiming to get an answer near 2000.
- Repeat.
- How close to 2000 can you get?



x	200	60	3	
9	1800	540	27	2367

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

Use the grid method to work out 5×2346 and 4×4271 .

Learning outcomes:

- I can use the grid method to multiply 3-digit numbers by 1-digit numbers.
- I am beginning to estimate the answers.
- I am beginning to multiply 4-digit numbers by 1-digit numbers.

1 0 0

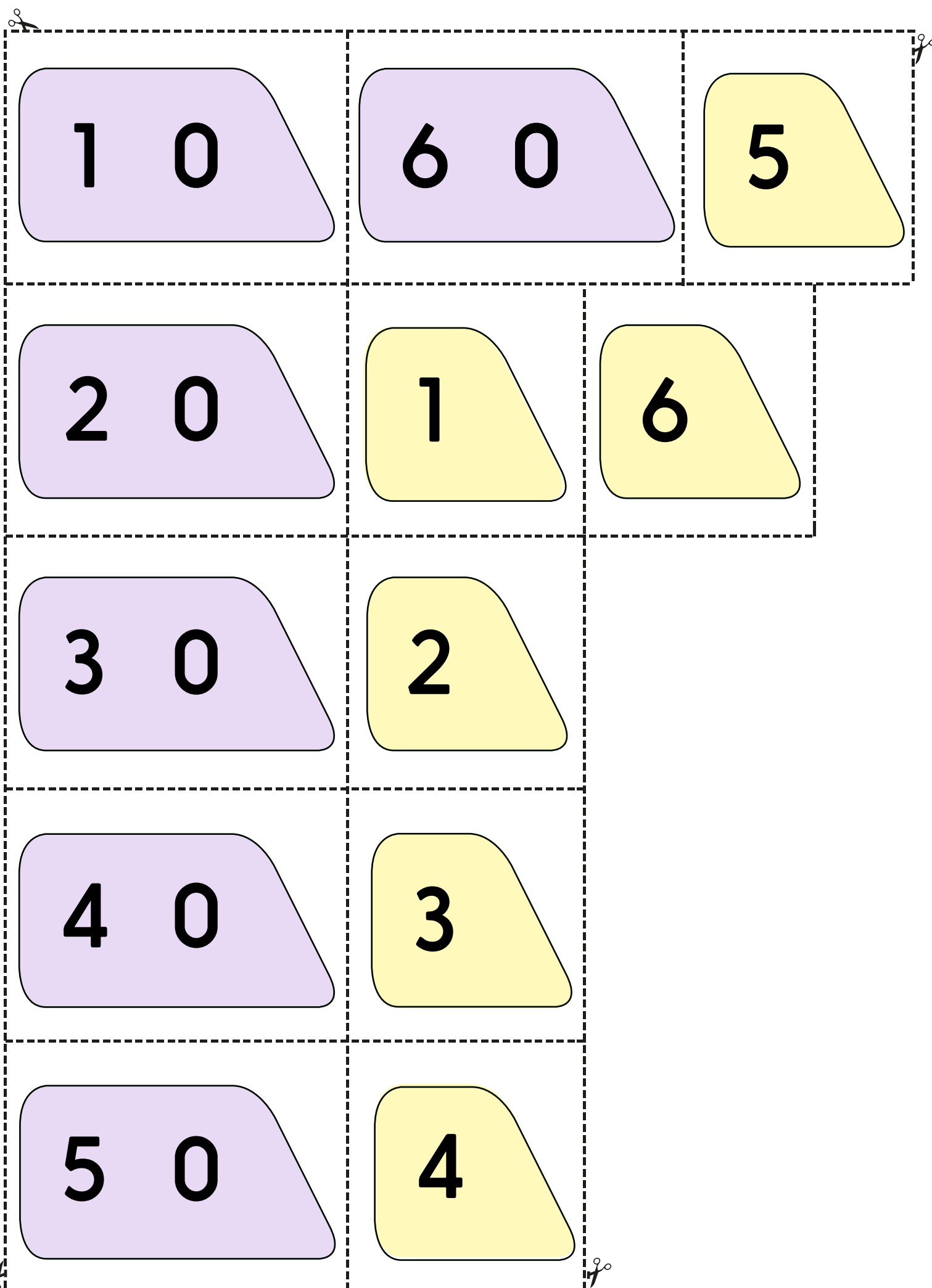
6 0 0

2 0 0

3 0 0

4 0 0

5 0 0



1 0

6 0

5

2 0

1

6

3 0

2

4 0

3

5 0

4

Investigation

Aim for 60,000



- Use the digits 5, 6, 7, 8 and 9 to create 4-digit by 1-digit multiplications.

$$\text{O O O O} \times \text{O}$$

- Aim for an answer as close to 60,000 as possible.

What will be your strategy to get started?

How will you keep track of combinations of digits you've tried?

A sheet of yellow lined paper with a spiral binding on the left. The top row contains the digits 5, 6, 7, 8, 9. The second row contains the multiplication problem 7965 x 8. The rest of the paper is blank.

7 x 8569 = 59,983 is the closest you can get.