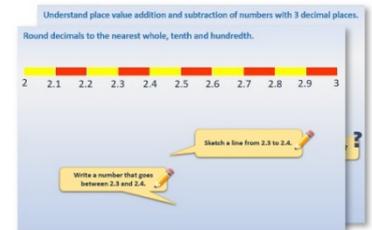


Week 15, Day 2

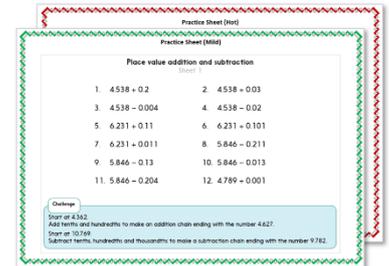
Order of operations and brackets

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**.

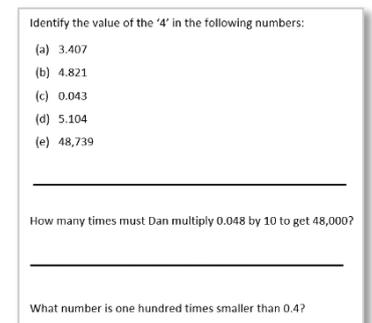


2. Tackle the questions on the **Practice Sheet**.
There might be a choice of either **Mild** (easier) or **Hot** (harder)!
Check the answers.



3. Think you've got it? Have a go at the **Investigation** or **Practical Activity**.

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



Learning Reminders



- We can use any operation and the 1-digit numbers 2, 3 and 4 in any order to try to make 34.
- $4 \times 8 + 2$ works!
- Now let's try this target number and set of cards.



- $(7 - 5) \times 9$ works! This time we needed to use **brackets**.
- **Remember** we work out strings of calculations in this order:

1. Brackets
2. Multiplication/division
3. Addition/subtraction

- Without brackets, $7 - 5 \times 9$ would be $7 - 45 = -38$ ***This is incorrect!***

Practice Sheet Mild

Keep it under 10

2

3

6

7

1. Use these numbers in any order and with any operations and brackets to give a 1-digit answer.

You must use all of the numbers!

Can you use them in a ***different way*** to make other 1-digit answers?

3

4

8

9

2. Use these numbers in any order and with any operations and brackets to give a 1-digit answer.

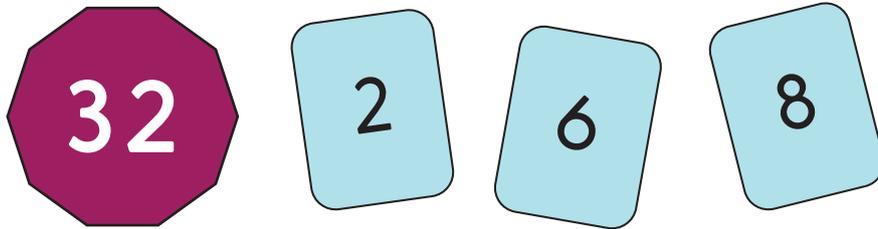
You must use all of the numbers!

Can you use them in a ***different way*** to make other 1-digit answers?

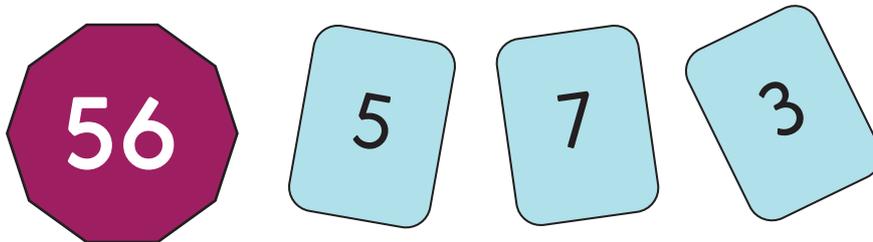
Practice Sheet Hot

Make the number

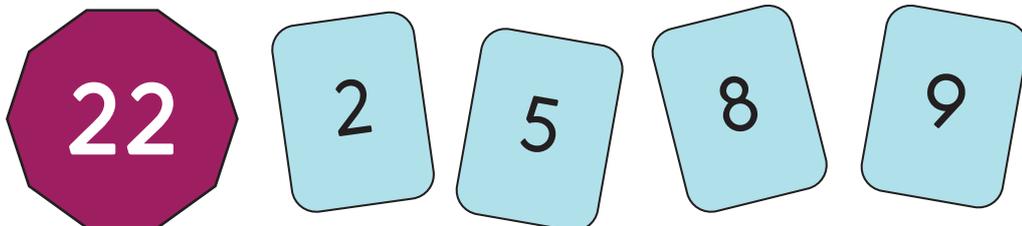
1. Use these numbers in any order and with any operations and brackets to make 32.



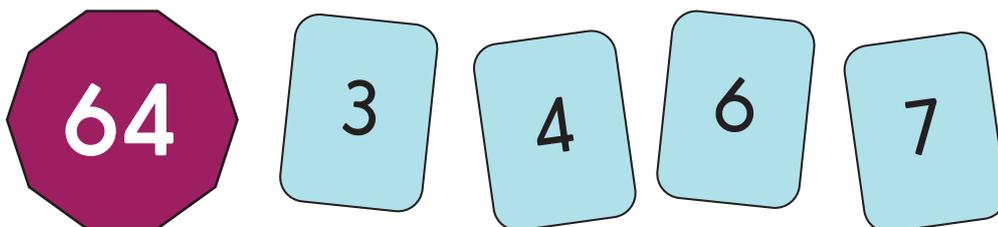
2. Use these numbers in any order and with any operations and brackets to make 56.



3. Use these numbers in any order and with any operations and brackets to make 22.



4. Use these numbers in any order and with any operations and brackets to make 64.



Practice Sheet Answers

Practice Sheet Mild

1. For example: $(3 \times 6) - (2 \times 7) = 4$, $(7 \times 6) \div (2 \times 3) = 7$ and $7 - 3 - (6 \div 2) = 1$.
2. For example: $9 + 4 - (8 + 3)$, $9 + 8 - (3 \times 4)$ and $(8 \times 4) - (9 \times 3)$.
(The last example doesn't need brackets, but children may have used them to make the order clear.)

Practice Sheet Hot

1. $8 \times (6 - 2)$
2. $(3 + 5) \times 7$
3. $8 \times 5 - 9 \times 2$ children may write this as $(8 \times 5) - (9 \times 2)$
4. $(3 + 7 + 6) \times 4$

Practical Activities Mild

Card games

You will need:

- A set of playing cards with the pictures and tens cards removed,
OR four sets of 1-9 digit cards (see resources)

High/low

Deal three cards to each player, one facing up and two facing down.

The dealer says high or low, and then turns over his/her two remaining cards, (e.g. 4 and 5) multiplies them together and adds on the first card, e.g. $3 \times 4 + 5$.

Each person then does the same.

If the dealer said high, you earn a point if your answer is higher than the dealer's.
If the dealer said 'low' you earn a point if your answer is lower than the dealer's.

The winner is the person with most points after five rounds (or more if you wish!).

Singles

Deal four cards to each player.

Each player tries to use their cards with any operations to make a number sentence which gives a single-digit answer.

For example, if you have cards 3, 6, 8 and 9, you could have
 $9 + 8 - 6 - 3 = 8$, or $93 - 86 = 7$.

Remember to use brackets, if necessary, to show the correct order of operations.

Practical Activities Hot

Card games

You will need:

- A set of playing cards with the pictures and tens cards removed,
OR four sets of 1-9 digit cards (see resources)

Start each game with a shuffled deck of cards.

Target number 1

Turn over the top two cards from the deck to make a target two-digit number.

Deal three cards to each player.

The first player turns over their cards and tries to make the target number using their numbers with any combination of operations. If they cannot make the number, they discard one card and pick up another from the deck to use on their next go.

The next player tries to make the target number, and so on, until one person wins by making the target number.

Write down your winning number sentence! Shuffle the cards and restart the game.

Target number 2

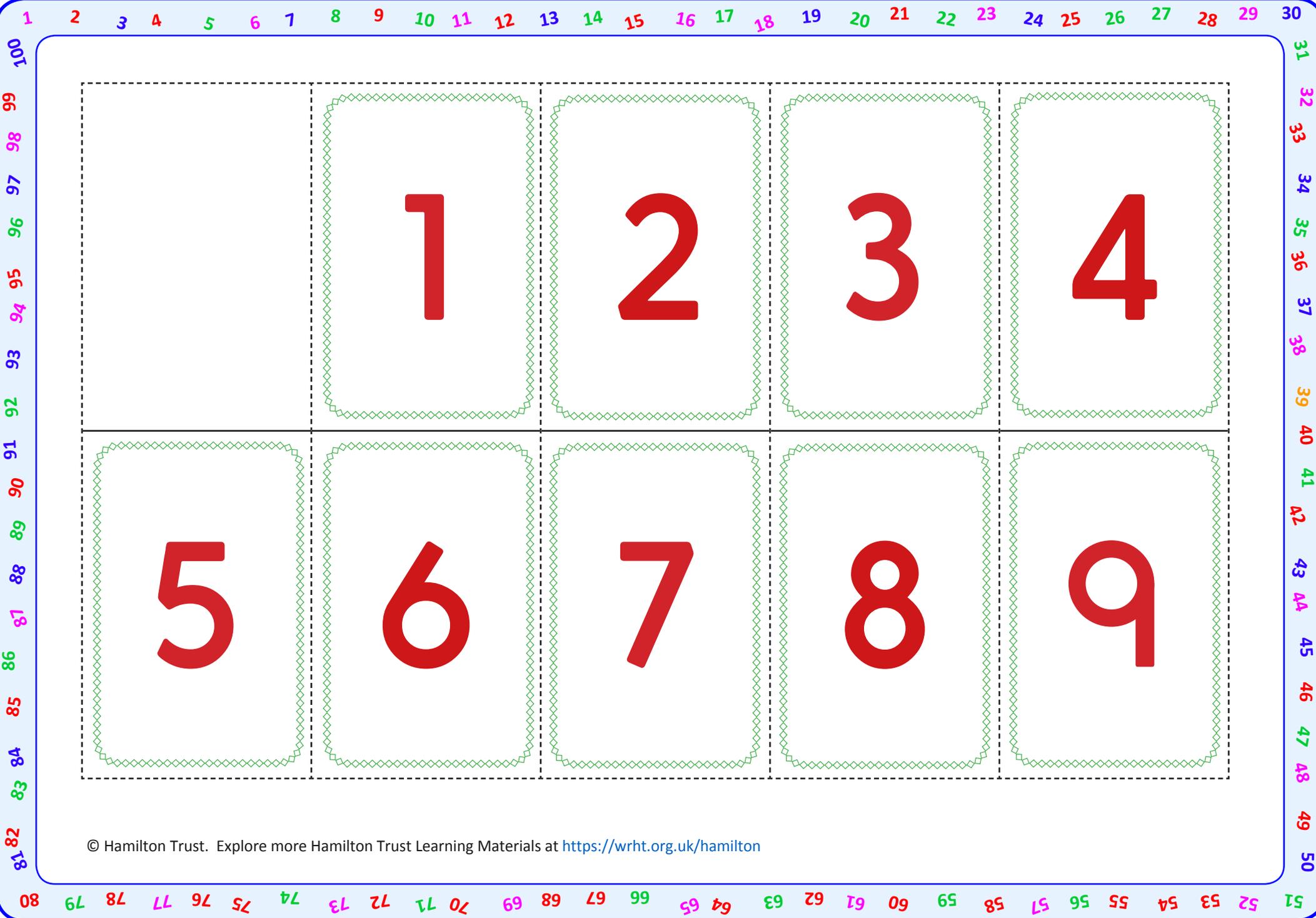
Turn over the top two cards from the deck to make a target number.

Deal four cards to each player.

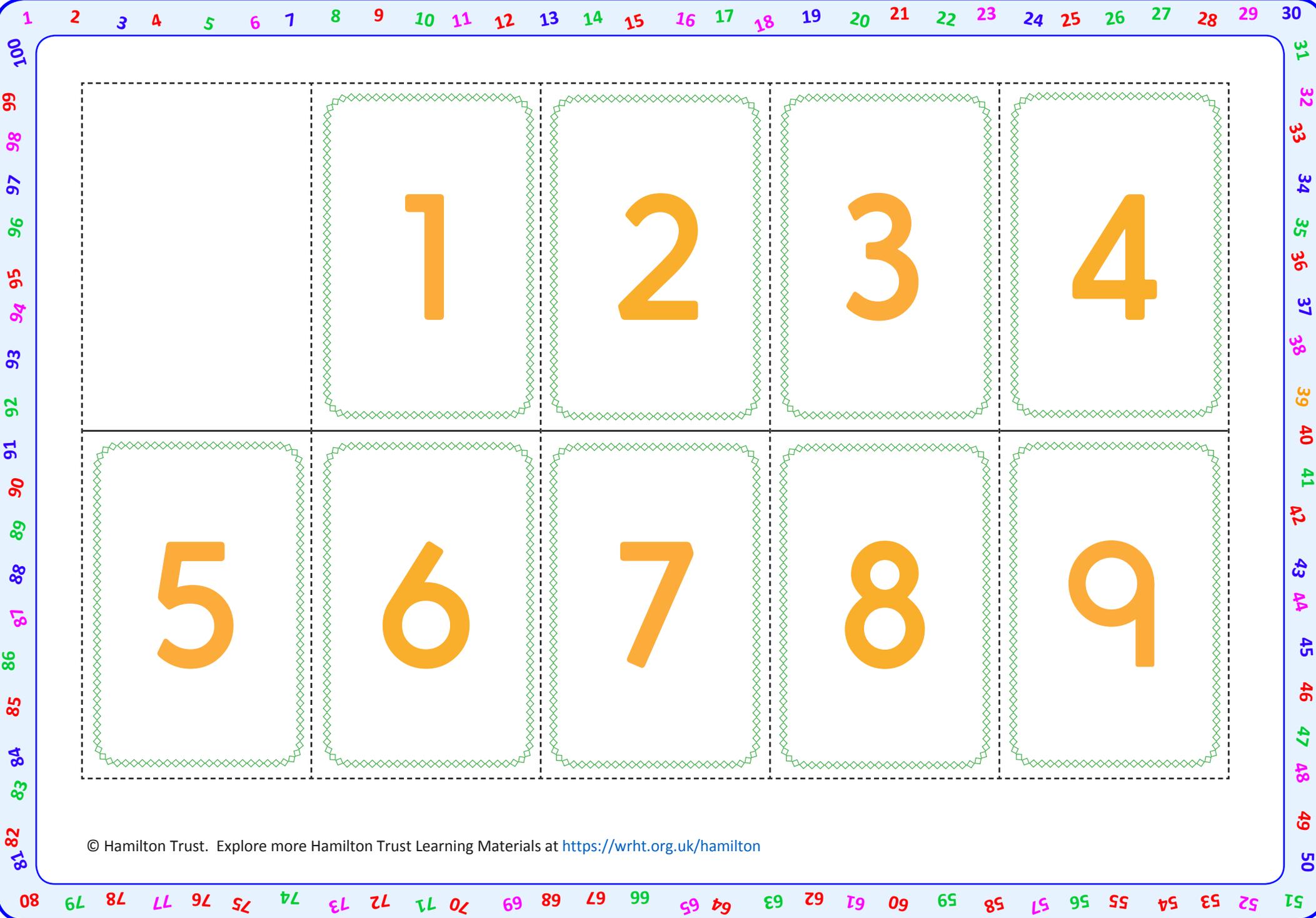
Use these cards to make a pair of two-digit numbers (using the digits in any order you wish) and add or subtract them to get as close to the target number as you can.

Work out how far away you are, and this difference is your score. The winner is the person with the lowest score after three (or more) rounds.

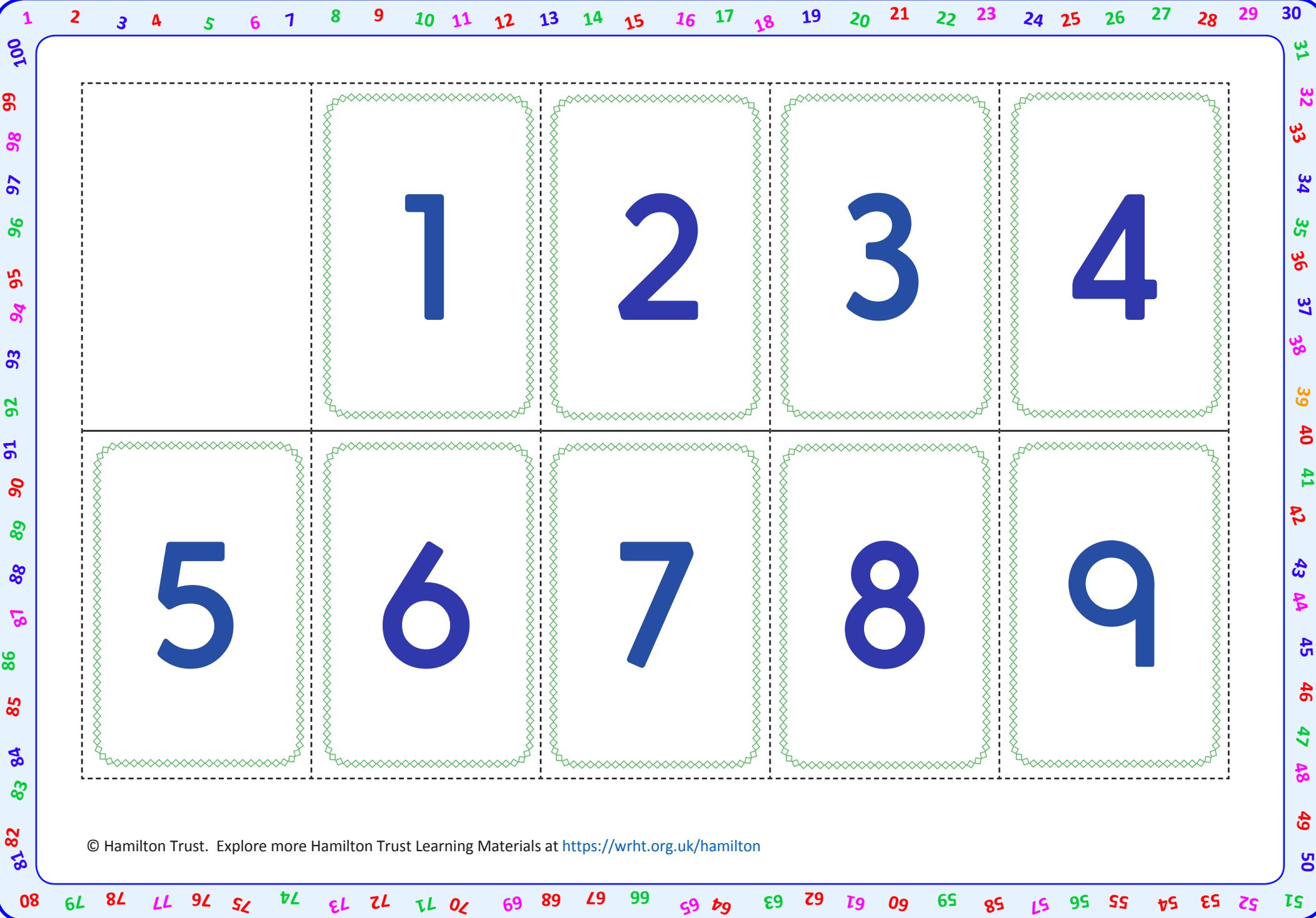
Shuffle the cards and restart the game.

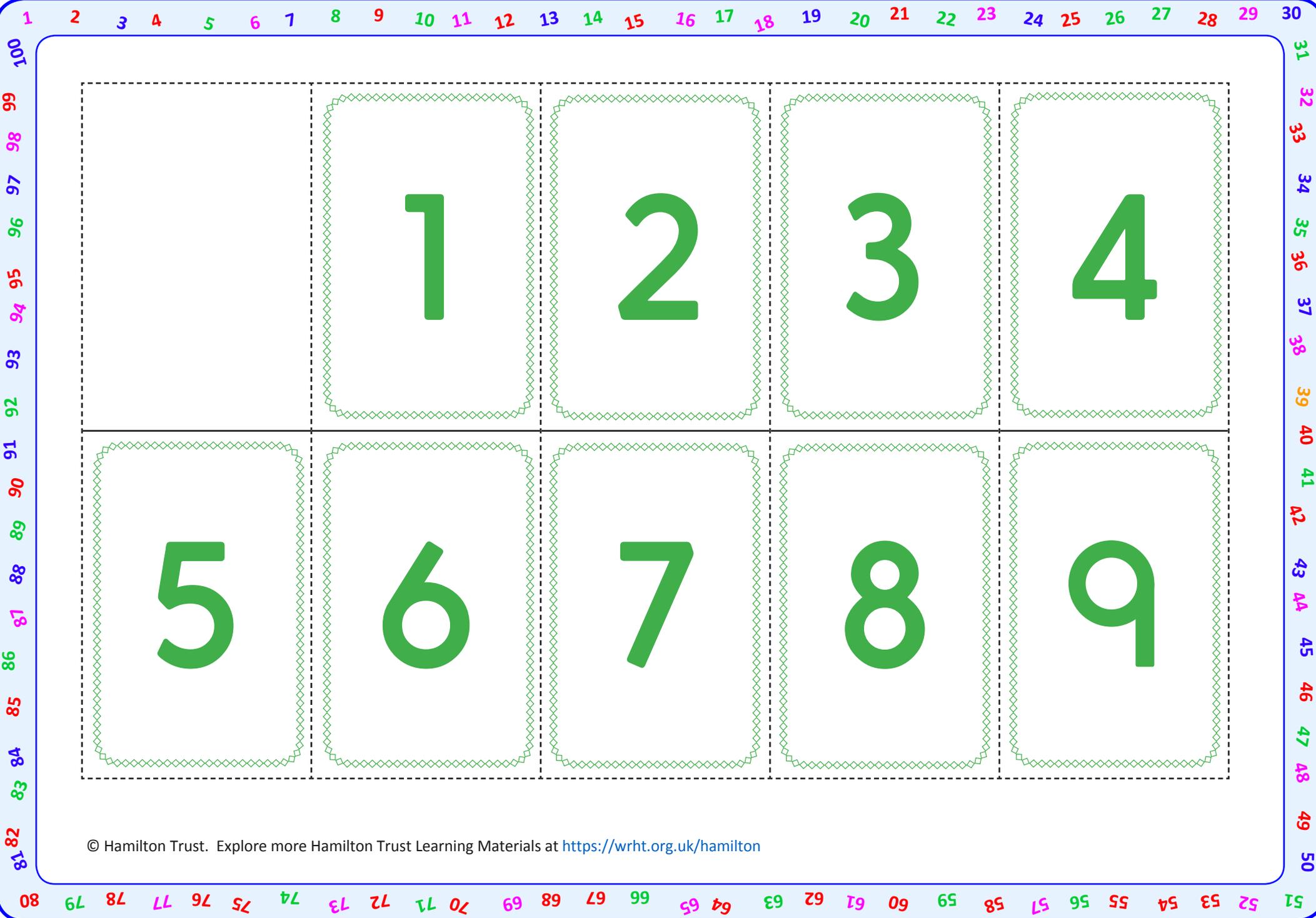


© Hamilton Trust. Explore more Hamilton Trust Learning Materials at <https://wrht.org.uk/hamilton>



© Hamilton Trust. Explore more Hamilton Trust Learning Materials at <https://wrht.org.uk/hamilton>





© Hamilton Trust. Explore more Hamilton Trust Learning Materials at <https://wrht.org.uk/hamilton>

Check your understanding: Questions

In relation to multi-part calculations, agree whether these statements are true or false:

- We leave the part in brackets until last.
 - It does not matter which order you do the parts of the calculation not in brackets.
 - We should always complete the easiest parts of a calculation first.
 - $12 + (3 \times 4)$ gives the same answer if the brackets are removed.
-

Put a pair of brackets in three different places in this calculation to give three different answers.

$$4 + 5 \times 12 - 7 =$$

Fold here to hide answers:

Check your understanding: Answers

In relation to multi-part calculations, agree whether these statements are true or false:

- We leave the part in brackets until last. **False – should be first.**
 - It does not matter which order you do the parts of the calculation not in brackets. **False – these is a set order which should be followed.**
 - We should always do the easiest parts of a calculation first. **False, see previous statement.**
 - $12 + (3 \times 4)$ gives the same answer if the brackets are removed. **True, in both cases the multiplication will be done first. Compare with $(12 + 3) \times 4$.**
-

Put a pair of brackets in three different places in this calculation to give three different answers: $4 + 5 \times 12 - 7 =$

$$(4 + 5) \times 12 - 7 = 101$$

$$4 + (5 \times 12) - 7 = 57$$

$$4 + 5 \times (12 - 7) = 29$$