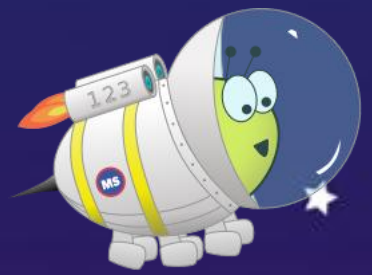
Quiz: **QRTDJRV**

# MathShed

Stage 5

Autumn Block 2: Addition and Subtraction

Lesson 1: To be able to add together 5-digit and 4-digit numbers




**Term:** Autumn **Unit:** Block 2 – Addition and Subtraction **Lesson:** 5

# To be able to add together 5-digit and 4-digit numbers

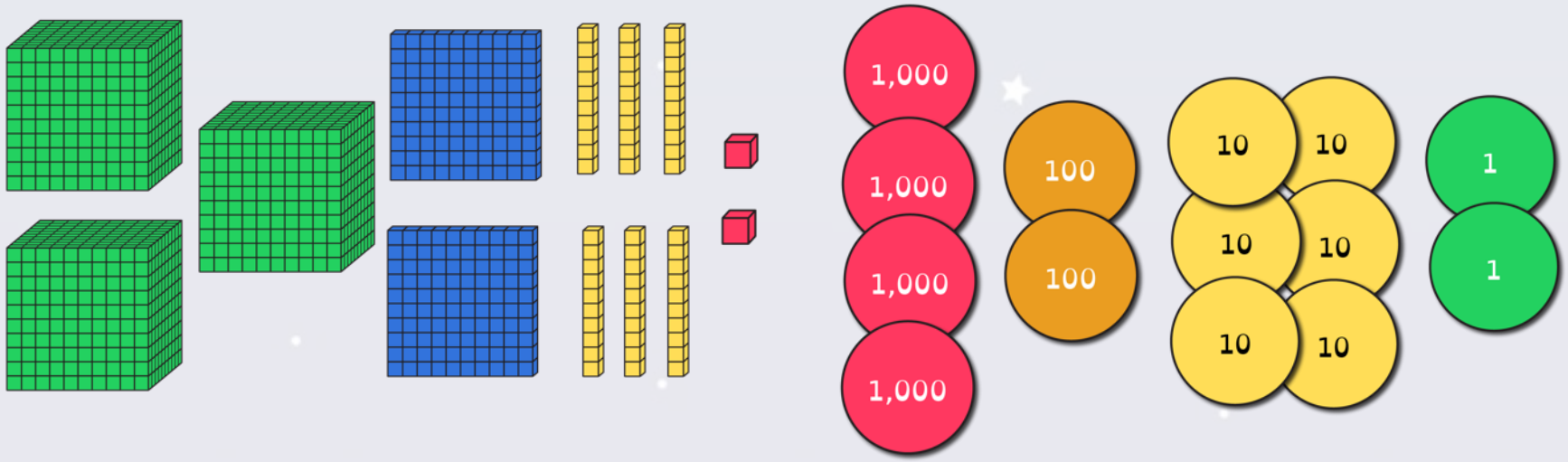
## Success criteria:

- ✓ I can use mathematical equipment and place value charts to add together 5-digit and 4-digit numbers (with exchanges)
- ✓ I can explain my reasoning when using mathematical equipment and place value charts to add together 5-digit and 4-digit numbers (with exchanges)

To be able to add together 5-digit and 4-digit numbers

## Starter:

What's the same? What's different?




CCLXII

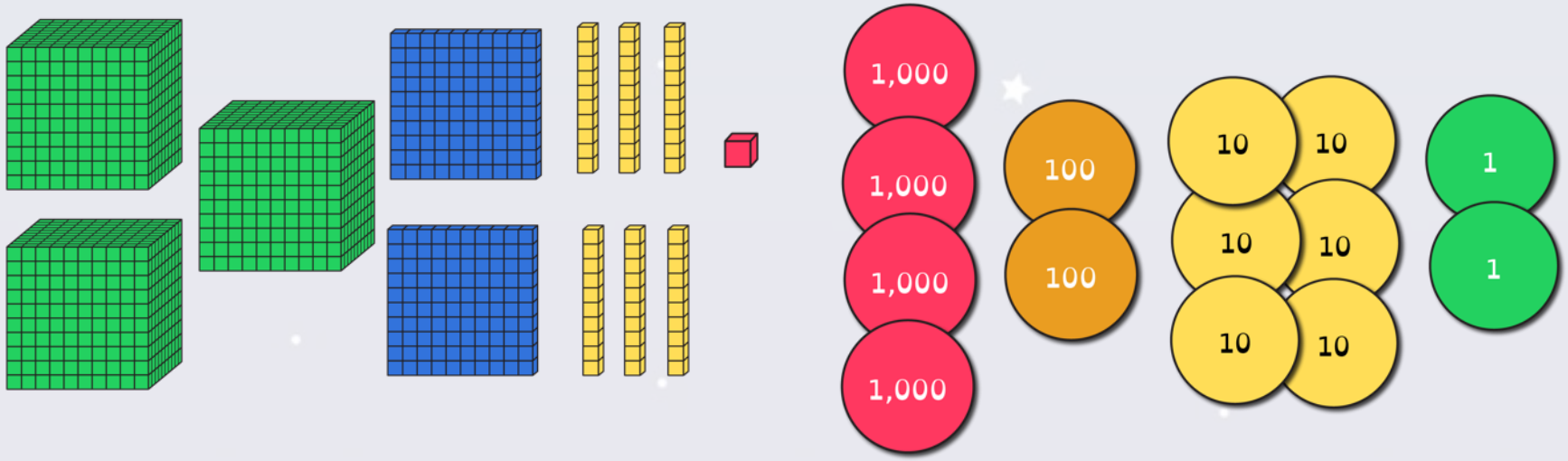
five thousand, one hundred and sixty-two

Explain your answer.

# To be able to add together 5-digit and 4-digit numbers

## Starter:

What's the same? What's different?




CCLXII

five thousand, one hundred and sixty-two

All of the representations have the same amount of hundreds, tens and ones, apart from the worded form which only has one hundred, while the others each have two hundreds. They all have different amounts of thousands: the Base 10 has 3 thousands, the counters have 4 thousands, Roman numerals have none and the worded form has 5 thousands,

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

| thousands | hundreds | tens | ones |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 7 | |
| + | 1 | 1 | 9 | 4 | |
| | | | | | |
| | | | | | |

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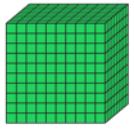
|  |  |  |  |
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| | | | |

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To be able to add together 5-digit and 4-digit numbers

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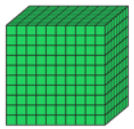
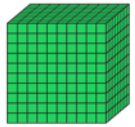
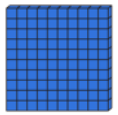
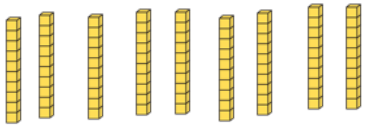
| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| | | | |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 7 | |
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| | | | | | |
| | | | | | |

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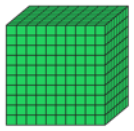
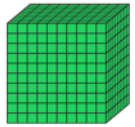
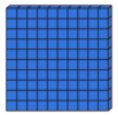
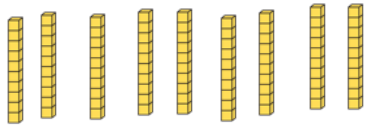
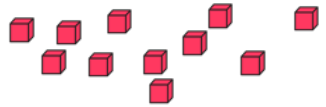
|  |  |  |  |
|  |  |  |  |
| | | |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 7 | |
| + | 1 | 1 | 9 | 4 | |
| | | | | 1 | |
| | | | | | |

To be able to add together 5-digit and 4-digit numbers

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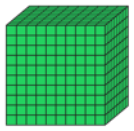
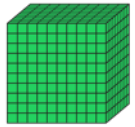
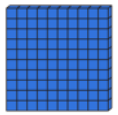
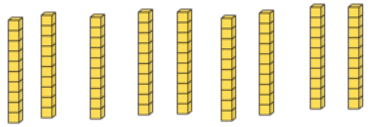
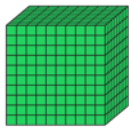
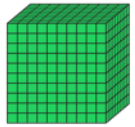
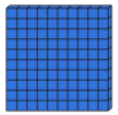
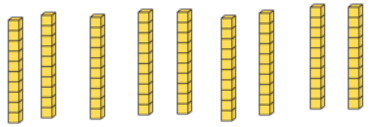
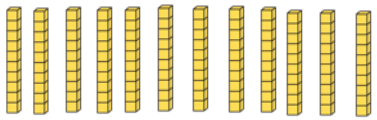
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| | | |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 7 | |
| + | 1 | 1 | 9 | 4 | |
| | | | | 1 | |
| | | | 1 | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

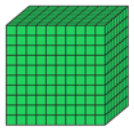
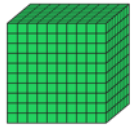
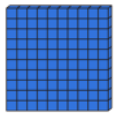
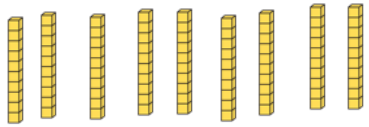
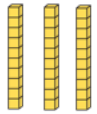
| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| | |  |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 7 | |
| + | 1 | 1 | 9 | 4 | |
| | | | | 1 | |
| | | | 1 | | |

# To be able to add two 4-digit numbers (with more than one exchange)

## Talking Time:

Use the place value chart and mathematical equipment to complete:

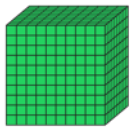
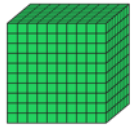
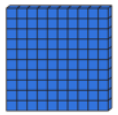
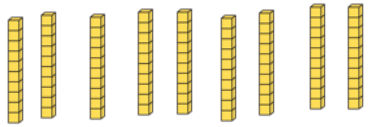
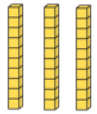
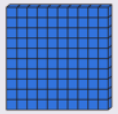
| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| | |  |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 7 | |
| + | 1 | 1 | 9 | 4 | |
| | | | 3 | 1 | |
| | | | 1 | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

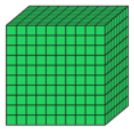
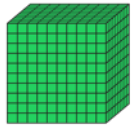
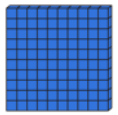
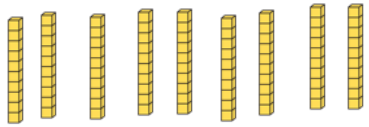
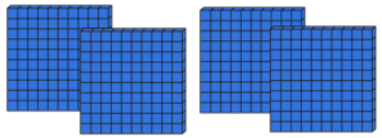
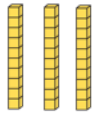
| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| | |  |  |
| |  | | |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 7 | |
| + | 1 | 1 | 9 | 4 | |
| | | | 3 | 1 | |
| | | 1 | 1 | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| |  |  |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 7 | |
| + | 1 | 1 | 9 | 4 | |
| | | 4 | 3 | 1 | |
| | | 1 | 1 | | |

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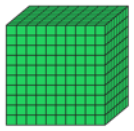
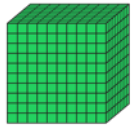
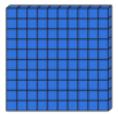
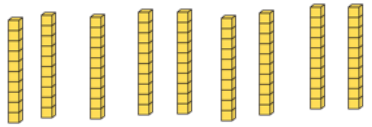
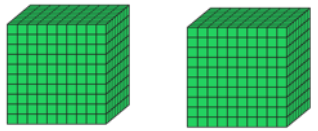
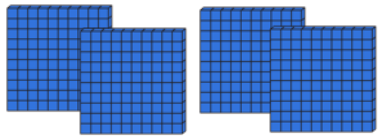
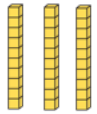
Use the place value chart and mathematical equipment to complete:

| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 7 | |
| + | 1 | 1 | 9 | 4 | |
| | 2 | 4 | 3 | 1 | |
| | | 1 | 1 | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

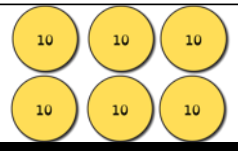
| thousands | hundreds | tens | ones |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 9 | 5 | 3 | |
| + | 1 | 3 | 6 | 4 | |
| | | | | | |
| | | | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

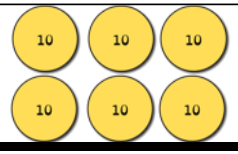
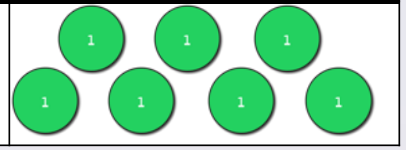
| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| | | | |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 9 | 5 | 3 | |
| + | 1 | 3 | 6 | 4 | |
| | | | | | |
| | | | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

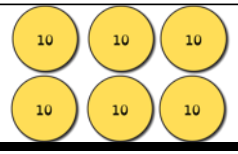
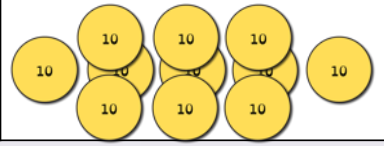
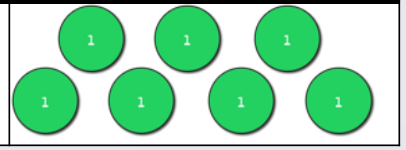
| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| | | |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 9 | 5 | 3 | |
| + | 1 | 3 | 6 | 4 | |
| | | | | 7 | |
| | | | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

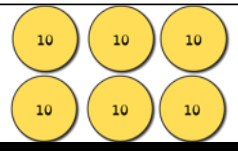
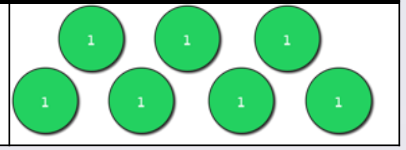
| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| | |  |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 9 | 5 | 3 | |
| + | 1 | 3 | 6 | 4 | |
| | | | | 7 | |
| | | | | | |

# To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

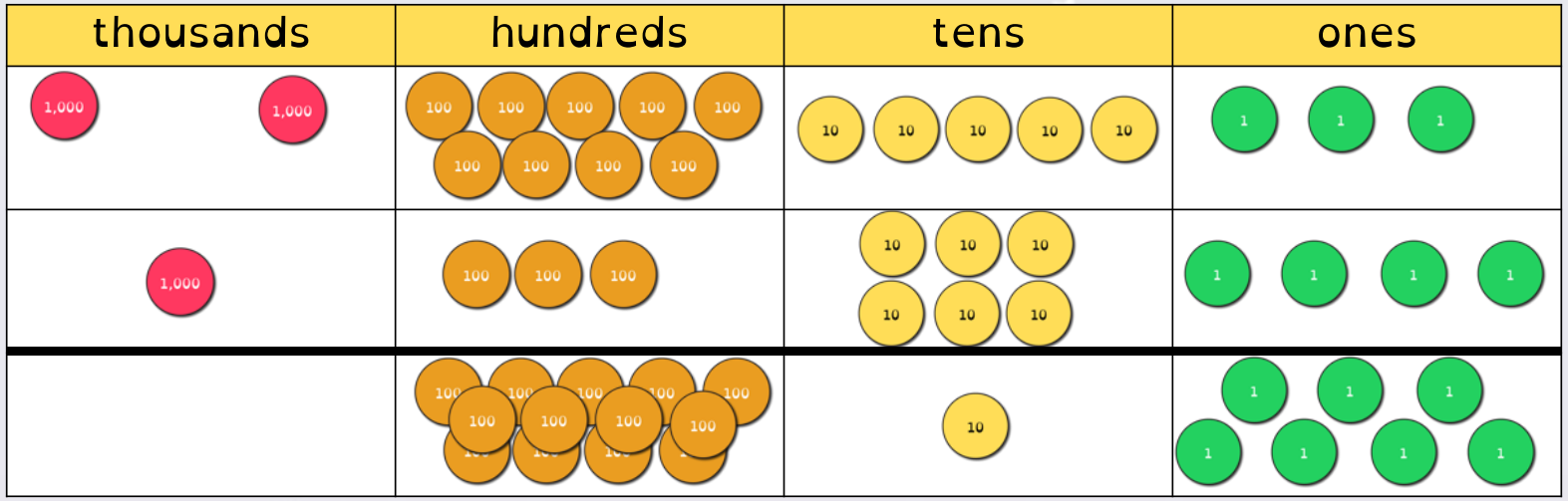
| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
| | |  |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 9 | 5 | 3 | |
| + | 1 | 3 | 6 | 4 | |
| | | | 1 | 7 | |
| | | 1 | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:




| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 9 | 5 | 3 | |
| + | 1 | 3 | 6 | 4 | |
| | | | 1 | 7 | |
| | | 1 | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

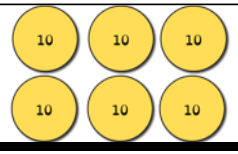
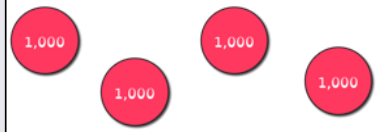
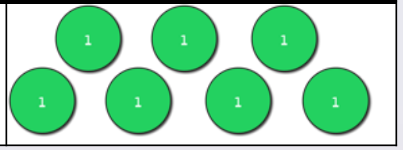
| thousands | hundreds | tens | ones |
|---|---|---|---|
| 1,000 1,000 | 100 100 100 100 100 100 100 100 100 | 10 10 10 10 10 | 1 1 1 |
| 1,000 | 100 100 100 | 10 10 10 10 10 10 | 1 1 1 1 |
| | 100 100 100 | 10 | 1 1 1 1 1 1 1 |
| 1,000 | | | |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 9 | 5 | 3 | |
| + | 1 | 3 | 6 | 4 | |
| | | 3 | 1 | 7 | |
| | 1 | 1 | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use the place value chart and mathematical equipment to complete:

| thousands | hundreds | tens | ones |
|---|---|---|---|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 9 | 5 | 3 | |
| + | 1 | 3 | 6 | 4 | |
| | 4 | 3 | 1 | 7 | |
| | 1 | 1 | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use a place value chart and mathematical equipment to complete:

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 7 | 5 | 8 | |
| + | | 2 | 7 | 5 | 4 | |
| | | | | | | |
| | | | | | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 2 | 9 | 7 | 0 | 9 | |
| + | | 4 | 7 | 0 | 3 | |
| | | | | | | |
| | | | | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use a place value chart and mathematical equipment to complete:

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 7 | 5 | 8 | |
| + | | 2 | 7 | 5 | 4 | |
| | 1 | 5 | 5 | 1 | 2 | |
| | | 1 | 1 | 1 | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 2 | 9 | 7 | 0 | 9 | |
| + | | 4 | 7 | 0 | 3 | |
| | | | | | | |
| | | | | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Use a place value chart and mathematical equipment to complete:

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 7 | 5 | 8 | |
| + | | 2 | 7 | 5 | 4 | |
| | 1 | 5 | 5 | 1 | 2 | |
| | | 1 | 1 | 1 | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 2 | 9 | 7 | 0 | 9 | |
| + | | 4 | 7 | 0 | 3 | |
| | 3 | 4 | 4 | 1 | 2 | |
| | 1 | 1 | | 1 | | |

To be able to add together 5-digit and 4-digit numbers

## Activity 1:

Use a place value chart and mathematical equipment to complete:

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 8 | 7 | 9 | |
| + | | 3 | 8 | 4 | 1 | |
| | | | | | | |
| | | | | | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 4 | 9 | 9 | 1 | 9 | |
| + | | 6 | 9 | 0 | 5 | |
| | | | | | | |
| | | | | | | |

To be able to add together 5-digit and 4-digit numbers

## Activity 1:

Use a place value chart and mathematical equipment to complete:

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 8 | 7 | 9 | |
| + | | 3 | 8 | 4 | 1 | |
| | 1 | 6 | 7 | 2 | 0 | |
| | | 1 | 1 | 1 | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 4 | 9 | 9 | 1 | 9 | |
| + | | 6 | 9 | 0 | 5 | |
| | 5 | 6 | 8 | 2 | 4 | |
| | 1 | 1 | | 1 | | |

To be able to add together 5-digit and 4-digit numbers

## Activity 2:

Jamal, Yasmin and Chen have been playing Maths Shed. Jamal has 4,579 points, Yasmin has 5,437 points and Chen has 11,987 points.

a) How many points do Jamal and Yasmin have combined?

b) How many points do Jamal and Chen have combined?

c) How many point do Yasmin and Chen have combined?

d) How many points do Jamal, Yasmin and Chen have altogether?

To be able to add together 5-digit and 4-digit numbers

## Activity 2:

Jamal, Yasmin and Chen have been playing Maths Shed. Jamal has 4,579 points, Yasmin has 5,437 points and Chen has 11,987 points.

a) How many points do Jamal and Yasmin have combined?
4,579 + 5,437 = 10,016 points

b) How many points do Jamal and Chen have combined?
11,987 + 4,579 = 16,566 points

c) How many point do Yasmin and Chen have combined?
11,987 + 5,437 = 17,424 points

d) How many points do Jamal, Yasmin and Chen have altogether?
11,987 + 4,579 = 16,566 points
16,566 + 5,437 = 22,003 points

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Figure out and fill in the missing digits within the calculations below.

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | | 3 | 6 | | |
| + | 1 | 4 | | 4 | |
| | 3 | | 4 | 2 | |
| | | | | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | | 7 | 8 | 2 | | |
| + | | | 9 | | 8 | |
| | 3 | 2 | | 3 | 5 | |
| | | | | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Figure out and fill in the missing digits within the calculations below.

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 3 | 6 | 8 | |
| + | 1 | 4 | 7 | 4 | |
| | 3 | 8 | 4 | 2 | |
| | | 1 | 1 | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | | 7 | 8 | 2 | | |
| + | | | 9 | | 8 | |
| | 3 | 2 | | 3 | 5 | |
| | | | | | | |

To be able to add together 5-digit and 4-digit numbers

## Talking Time:

Figure out and fill in the missing digits within the calculations below.

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 3 | 6 | 8 | |
| + | 1 | 4 | 7 | 4 | |
| | 3 | 8 | 4 | 2 | |
| | | 1 | 1 | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 2 | 7 | 8 | 2 | 7 | |
| + | | 4 | 9 | 0 | 8 | |
| | 3 | 2 | 7 | 3 | 5 | |
| | 1 | 1 | | 1 | | |

To be able to add together 5-digit and 4-digit numbers

## Activity 3:

Figure out and fill in the missing digits within the calculations below.

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | | 7 | 9 | |
| + | 3 | 8 | | 5 | |
| | | 7 | 6 | | |
| | | | | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | | 8 | 9 | | 9 | |
| + | 1 | 5 | | 0 | 8 | |
| | 6 | | 8 | 1 | | |
| | | | | | | |

To be able to add together 5-digit and 4-digit numbers

## Activity 3:

Figure out and fill in the missing digits within the calculations below.

| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 8 | 7 | 9 | |
| + | 3 | 8 | 8 | 5 | |
| | 6 | 7 | 6 | 4 | |
| | 1 | 1 | 1 | | |

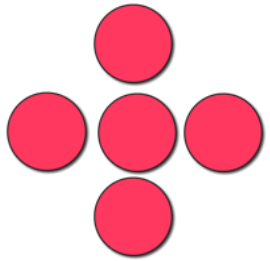
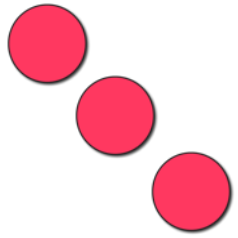
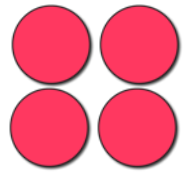
| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 4 | 8 | 9 | 0 | 9 | |
| + | 1 | 5 | 9 | 0 | 8 | |
| | 6 | 4 | 8 | 1 | 7 | |
| | 1 | 1 | | 1 | | |

To be able to add together 5-digit and 4-digit numbers

## Activity 4:

I have made the following number on my place value chart.

I move one counter from one of the columns three places to the left.

| thousands | | | ones | | |
|---|---|---|---|---|---|
| H | T | O | H | T | O |
| |  |  | |  |  |

When I add my new number to the original number, I get the total 112,058.

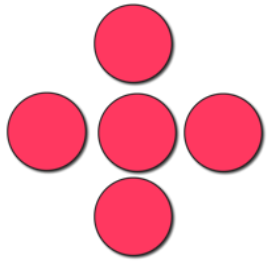
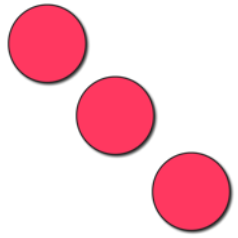
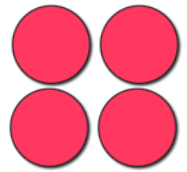
Which counter has been moved? What are the two part numbers?

To be able to add together 5-digit and 4-digit numbers

## Activity 4:

I have made the following number on my place value chart.

I move one counter from one of the columns three places to the left.

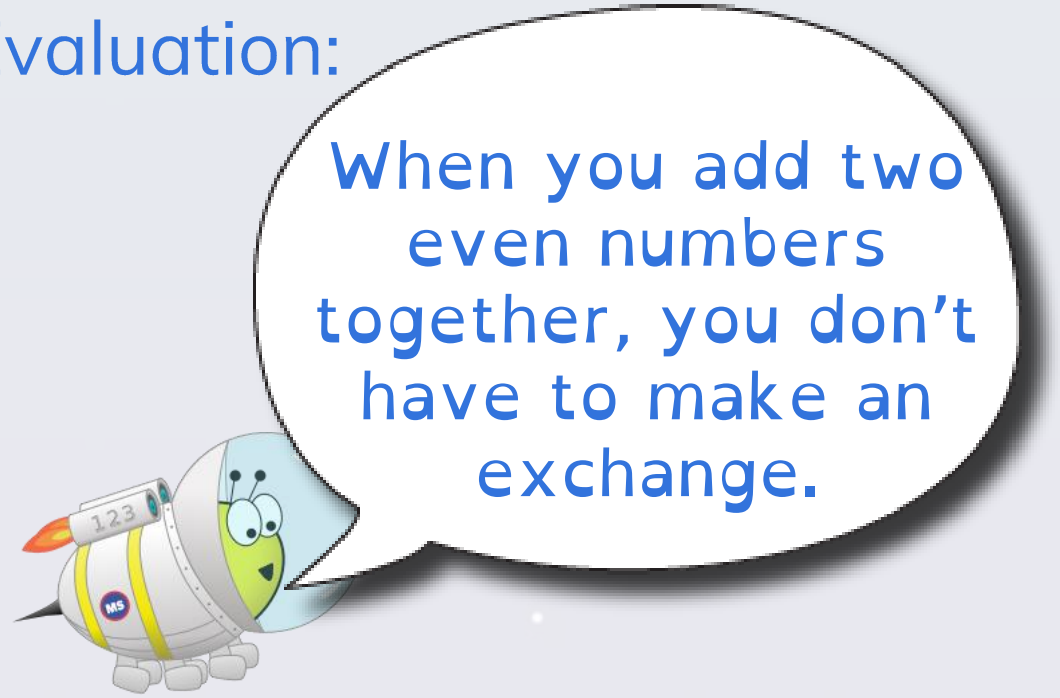
| thousands | | | ones | | |
|---|---|---|---|---|---|
| H | T | O | H | T | O |
| |  |  | |  |  |

When I add my new number to the original number, I get the total 112,058.

51,034 + 61,024 = 112,058 – a disk was moved from the tens to ten thousands place.

To be able to add together 5-digit and 4-digit numbers

## Evaluation:



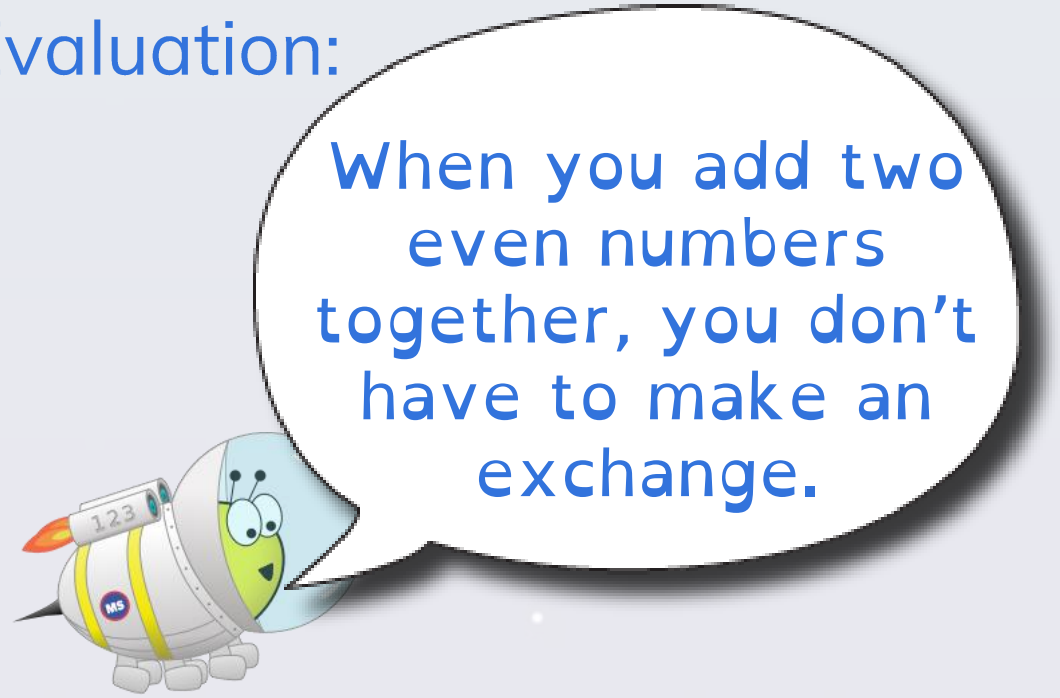

Is Astrobee's statement always, sometimes or never true?

Is it a helpful way to think about when an exchange is needed?

Provide example addition calculations to help you explain your response.

# To be able to add together 5-digit and 4-digit numbers

## Evaluation:




| | TH | H | T | O | |
|---|---|---|---|---|---|
| | 2 | 3 | 6 | 8 | |
| + | 1 | 4 | 7 | 4 | |
| | 3 | 8 | 4 | 2 | |
| | | 1 | 1 | | |

| | TTH | TH | H | T | O | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 7 | 5 | 8 | |
| + | | 2 | 7 | 5 | 4 | |
| | 1 | 5 | 5 | 1 | 2 | |
| | | 1 | 1 | 1 | | |

Astrobee's statement is sometimes true - in the left-hand calculation we can see 8 and 4 in the ones places requiring an exchange for 10 of the 12 ones to carry forward as a ten and leave 2 ones; in the right-hand calculation the two 2 digits in the thousands places do not require an exchange.

# To be able to add together 5-digit and 4-digit numbers

## Success criteria:

- ✓ I can use mathematical equipment and place value charts to add together 5-digit and 4-digit numbers (with exchanges)
- ✓ I can explain my reasoning when using mathematical equipment and place value charts to add together 5-digit and 4-digit numbers (with exchanges)