## Calculation mats Supporting guidance

- Calculation mats are versatile tools designed to support learning and reinforce mathematical concepts.
- These calculation mats are best utilised alongside modelled examples in your teaching to create an interactive and engaging learning environment. Children may also use the calculation mats to support them alongside their practical or independent work.
- Some sentence stems are included on the calculation mats to encourage discussion.
- Use manipulatives (such as counters, base 10, cubes or everyday objects) with the calculation
  mats, alongside the abstract calculations, to develop children's conceptual understanding. The
  calculation mats may also be used to show pictorial representations, such as drawn counters
  or bar models, to support understanding.
- Consider printing in A4 and putting the calculation mats within a plastic wallet. Alternatively, you may print the calculation mats in A3 and laminate them for reuse.



### Calculation Mats Addition – perimeter

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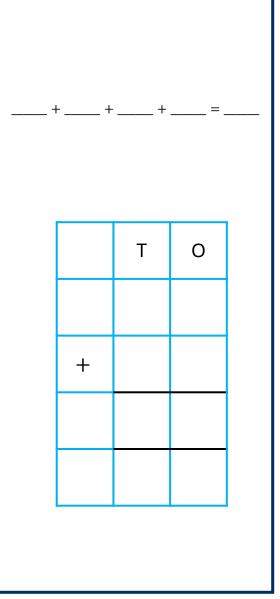
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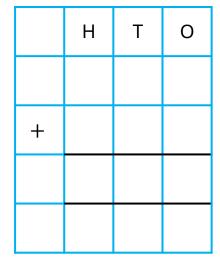


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To find the perimeter of the shape, I need to ...



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|       |           |                  |                  |      |      |       |      |   |
| •     |           | Do you need to m | ake an exchange? |      |      |       |      |   |



# Calculation Mats Subtraction – perimeter (missing side lengths)

| Мо               | del              | Cal | culati | on |  |
|------------------|------------------|-----|--------|----|--|
| Tens             | Ones             |     |        |    |  |
|                  |                  |     |        |    |  |
|                  |                  | _   |        | =  |  |
|                  |                  |     |        |    |  |
|                  |                  |     |        |    |  |
|                  |                  |     | Т      | 0  |  |
|                  |                  |     | ı      |    |  |
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|                  |                  |     |        |    |  |
| Do you need to m | ake an exchange? |     |        |    |  |

The missing side length is \_\_\_\_\_ mm/cm/m/km because...



| Мо               | del              | Calculation |
|------------------|------------------|-------------|
| Tens             | Ones             |             |
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|                  |                  |             |
|                  |                  | ТО          |
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|                  |                  |             |
| Do you need to m | ake an exchange? |             |



|          | Model                   |       |   | Calculation |          |   |   |  |
|----------|-------------------------|-------|---|-------------|----------|---|---|--|
| Hundreds | Tens                    | Ones  |   |             |          |   |   |  |
|          |                         |       | Ш |             |          |   |   |  |
|          |                         |       |   | _           | <u>_</u> | = | = |  |
|          |                         |       | - |             |          |   |   |  |
|          |                         |       |   |             |          |   |   |  |
|          |                         |       |   |             |          |   |   |  |
|          |                         |       |   |             | Н        | T | 0 |  |
|          |                         |       |   |             |          |   |   |  |
|          |                         |       |   | _           |          |   |   |  |
|          |                         |       |   |             |          |   |   |  |
|          |                         |       |   |             |          |   |   |  |
| Do yo    | ou need to make an exch | ange? |   |             |          |   |   |  |

The missing side length is \_\_\_\_\_ mm/cm/m/km because...



|          | Model                   |       |   | Calcu | latio | n |
|----------|-------------------------|-------|---|-------|-------|---|
| Hundreds | Tens                    | Ones  |   |       |       |   |
|          |                         |       |   |       |       |   |
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|          |                         |       |   | Н     | Т     |   |
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| Do yo    | ou need to make an exch | ange? |   |       |       |   |



|           | Model            |                  |      |     |    | culat | tion |   |
|-----------|------------------|------------------|------|-----|----|-------|------|---|
| Thousands | Hundreds         | Tens             | Ones |     |    |       |      |   |
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|           |                  |                  |      |     |    |       | _    |   |
|           |                  |                  |      |     | Th | Н     | Т    | 0 |
|           |                  |                  |      | Ш   |    |       |      |   |
|           |                  |                  |      | ШГ- |    |       |      |   |
|           |                  |                  |      |     |    |       |      |   |
|           |                  |                  |      |     |    |       |      |   |
| L         | Do you need to m | ake an exchange? |      |     |    |       |      |   |

The missing side length is \_\_\_\_\_ mm/cm/m/km because...



| Мо  | del  |      | _ |
|-----|------|------|---|
| eds | Tens | Ones |   |

| Thousands | Hundreds | Tens | Ones |
|-----------|----------|------|------|
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Do you need to make an exchange?

## Calculation

|   | Th | Н | Т | Ο |
|---|----|---|---|---|
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## Calculation Mats Multiplication – perimeter and area

|          | Model            |                  |  |   | alcu | latio | on |  |
|----------|------------------|------------------|--|---|------|-------|----|--|
|          | Tens             | Ones             |  |   |      |       |    |  |
|          |                  |                  |  |   |      |       |    |  |
|          |                  |                  |  | × | •    | -     | =  |  |
|          |                  |                  |  |   | `    |       |    |  |
|          |                  |                  |  |   |      |       |    |  |
|          |                  |                  |  |   |      |       |    |  |
|          |                  |                  |  |   | Т    | 0     |    |  |
|          |                  |                  |  |   |      |       |    |  |
|          |                  |                  |  | × |      |       |    |  |
|          |                  |                  |  |   |      |       |    |  |
|          |                  |                  |  |   |      |       |    |  |
|          |                  |                  |  |   |      |       |    |  |
| <u> </u> | Do you need to m | ake an exchange? |  |   |      |       |    |  |
|          |                  |                  |  |   |      |       |    |  |

Each side is \_\_\_\_ cm.

There are \_\_\_\_ sides, so the perimeter of the polygon is \_\_\_\_  $\times$  \_\_\_ cm = \_\_\_ cm.

| Мо   | del              | Ш      |   | Co       | lcu | atio | n |  |
|------|------------------|--------|---|----------|-----|------|---|--|
| Tens | Ones             | Ш      |   |          |     |      |   |  |
|      |                  | Ш      |   |          |     |      |   |  |
|      |                  | Ш      |   | <b>~</b> |     | _    |   |  |
|      |                  | -    - |   | _ ^      |     |      |   |  |
|      |                  | Ш      |   |          |     |      |   |  |
|      |                  | Ш      | ſ |          |     |      |   |  |
|      |                  | Ш      |   |          | Т   | 0    |   |  |
|      |                  | Ш      |   |          | ·   |      |   |  |
|      |                  | Ш      |   |          |     |      |   |  |
|      |                  | Ш      |   | ×        |     |      |   |  |
|      |                  | Ш      |   |          |     |      |   |  |
|      |                  | Ш      |   |          |     |      |   |  |
|      | ake an exchange? |        | l |          |     |      |   |  |

The area of the shape is  $\_\_\_ mm^2/cm^2/m^2/km^2$ 



| Мо               | Model            |   |   | atio | n |
|------------------|------------------|---|---|------|---|
| Tens             | Ones             |   |   |      |   |
|                  |                  | × |   | =    | = |
|                  |                  |   |   |      |   |
|                  |                  |   | Т | 0    |   |
|                  |                  |   |   |      |   |
|                  |                  | × |   |      |   |
|                  |                  |   |   |      |   |
|                  |                  |   |   |      |   |
|                  |                  |   |   |      |   |
|                  |                  |   |   |      |   |
| Do you need to m | ake an exchange? |   |   |      |   |



|          | Model                   |       | Ш             |   | Cal | cula | t |
|----------|-------------------------|-------|---------------|---|-----|------|---|
| Hundreds | Tens                    | Ones  | Ш             |   |     |      |   |
|          |                         |       | Ш             |   |     |      |   |
|          |                         |       |               |   | ×   |      |   |
|          |                         |       | $\parallel^-$ |   |     |      |   |
|          |                         |       | Ш             |   |     |      |   |
|          |                         |       | Ш             |   |     |      |   |
|          |                         |       | Ш             |   | Н   | Т    |   |
|          |                         |       | Ш             |   |     |      |   |
|          |                         |       | Ш             | × |     |      |   |
|          |                         |       | Ш             |   |     |      |   |
|          |                         |       | Ш             |   |     |      |   |
|          |                         |       |               |   |     |      |   |
| Do yo    | ou need to make an exch | ange? |               |   |     |      |   |

ion

Each side is \_\_\_\_ cm.

There are \_\_\_\_\_ sides, so the perimeter of the polygon is \_\_\_\_ × \_\_\_\_

|          | Model                        |       |   |   | Cal   | cula        | tion |  |
|----------|------------------------------|-------|---|---|-------|-------------|------|--|
| Hundreds | Tens                         | Ones  |   |   |       |             |      |  |
|          |                              |       | Ш |   |       |             |      |  |
|          |                              |       | Ш |   | ×     |             | =    |  |
|          |                              |       | - |   | - ^ _ | . , , , , , |      |  |
|          |                              |       | Ш |   |       |             |      |  |
|          |                              |       | Ш |   |       |             |      |  |
|          |                              |       |   |   | Н     | Т           | 0    |  |
|          |                              |       | Ш |   |       |             |      |  |
|          |                              |       | Ш | × |       |             |      |  |
|          |                              |       | Ш |   |       |             |      |  |
|          |                              |       | Ш |   |       |             |      |  |
|          |                              |       |   |   |       |             |      |  |
| Do yo    | L<br>ou need to make an exch | unge? |   |   |       |             |      |  |

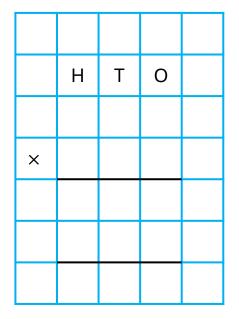
The area of the shape is  $\_\_\_ mm^2/cm^2/m^2/km^2$ 



## Model

| Hundreds | Tens | Ones |
|----------|------|------|
|          |      |      |
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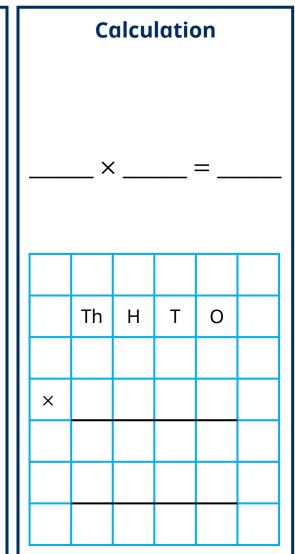
Calculation



Do you need to make an exchange?



| Model     |                  |                  |      |  |  |  |  |
|-----------|------------------|------------------|------|--|--|--|--|
| Thousands | Hundreds         | Tens             | Ones |  |  |  |  |
|           |                  |                  |      |  |  |  |  |
|           |                  |                  |      |  |  |  |  |
|           |                  |                  |      |  |  |  |  |
|           |                  |                  |      |  |  |  |  |
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|           |                  |                  |      |  |  |  |  |
|           |                  |                  |      |  |  |  |  |
|           | Do you need to m | ake an exchange? |      |  |  |  |  |



Each side is \_\_\_\_ cm.

There are  $\_\_\_$  sides, so the perimeter of the polygon is  $\_\_\_ \times \_\_\_$  cm =  $\_\_\_$  cm.

| Calculation | C  |               | Model |                       |                  |           |  |  |
|-------------|----|---------------|-------|-----------------------|------------------|-----------|--|--|
|             |    | ]             | Ones  | Tens                  | Hundreds         | Thousands |  |  |
|             |    | ]             |       |                       |                  |           |  |  |
|             |    |               |       |                       |                  |           |  |  |
| × =         | >  |               |       |                       |                  |           |  |  |
|             |    |               |       |                       |                  |           |  |  |
|             |    | I II⊢         |       |                       |                  |           |  |  |
|             |    | <u> </u>      |       |                       |                  |           |  |  |
| Th H T C    | Th |               |       |                       |                  |           |  |  |
|             |    |               |       |                       |                  |           |  |  |
|             | <  | ×             |       |                       |                  |           |  |  |
|             |    |               |       |                       |                  |           |  |  |
|             |    | 」Ⅱ□           |       |                       |                  |           |  |  |
|             |    | Ш⊢            |       |                       |                  |           |  |  |
|             |    | '    <u> </u> | I     | I<br>ake an exchange? | Do you need to m |           |  |  |

O

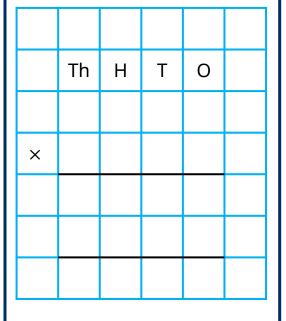
The area of the shape is  $_{\rm mm^2/cm^2/m^2/km^2}$ 



## Model

| Thousands | Hundreds | Tens | Ones |
|-----------|----------|------|------|
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Calculation



Do you need to make an exchange?

