

## Year 6 Area, Perimeter and Volume

### Lesson sequence

*Learning focus To find the area of shapes by counting squares*

*Learning focus: To find the areas and perimeter of rectangles and rectilinear shapes.*

*Learning focus: To find the area of a triangle by counting squares*

*Learning focus.: To calculate the area of a triangle*

*Learning focus: To calculate the area of a parallelogram*

*Learning focus.: To calculate the volume of a cuboid*

### Vocabulary revision (vocabulary I have been taught before)

- **Area**
- **Perimeter**
- **Volume**
- **Right angle triangle**
- **Parallelogram**
- **Cuboid**
- **Rectilinear shape**
- **Accurately**
- **Layers**
- **Prisms**

### Sticky Learning

#### New knowledge

- *To know that shapes with the same areas can have different perimeters and vice versa*
- *To know the formula for the area of a triangle ( $\frac{1}{2} b \times h$  or  $b \times h \div 2$ )*
- *To know the formula for area of a parallelogram ( $b \times h$ )*
- *To know the formula for the volume of a cuboid ( $l \times w \times h$ )*

#### New Skills

- *To calculate the area of parallelograms and triangles*
- *To calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres ( $\text{cm}^3$ ) and cubic metres ( $\text{m}^3$ ), extending to other units [e.g.  $\text{mm}^3$  and  $\text{km}^3$ ].*
- *To recognise when it is possible to use formulae for area and volume of shapes*
- *To use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places*
- *To solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate*

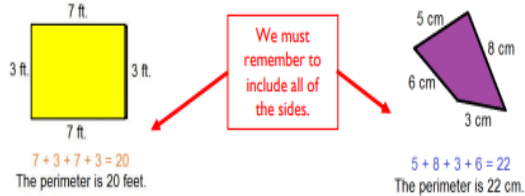
### New vocabulary

Base  
Perpendicular height  
Formula  
Depth  
Cubic centimetres

- To relate the area of rectangles to parallelograms and triangles
- To use the formula for the area of a triangle
- To use the formula for the area of a parallelogram

### Perimeter

**Perimeter:** This is the total distance around the outside of the shape.

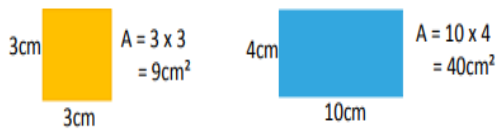


### Area

**Area:** This is the space that a 2D shape takes up.

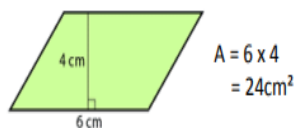
#### Squares and rectangles:

The formula is the same for both shapes: **A = Length x Width**



#### Parallelograms:

The formula is similar to a rectangle but instead of width we use the height. **A = Length x Height**



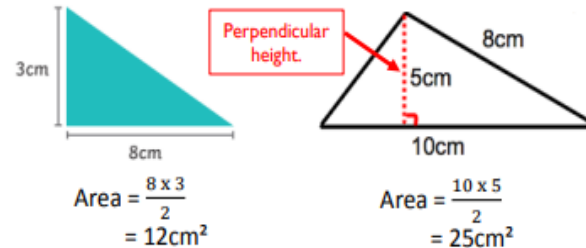
Sometimes the length is referred to as the base.

### Pictorial representation

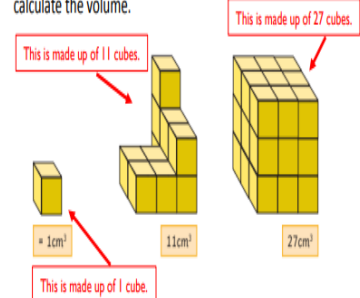
**Triangles:** To find the area of a triangle we use the following formula

$$\text{Area} = \frac{\text{Base} \times \text{perpendicular height}}{2}$$

The formula is very similar to a rectangle but we must divide by 2 because a triangle is half the size of a rectangle.



**Volume:** This is the amount of space that a 3D object occupies. Sometimes an object is made up of cubes, we can count them to calculate the volume.



**Cubes and cuboids:** To calculate the volume of a cube and cuboid we use the following formula:

$$\text{Volume} = \text{Length} \times \text{Width} \times \text{Height}$$

