

# Unit 12 Decimals

Rectangular Strip



In this unit we will ...

- Add and subtract decimals with the same number of digits after the decimal point
- Add and subtract decimals with a different number of digits after the decimal point
- Add whole numbers to decimals
- Subtract decimals from whole numbers
- Solve problems involving addition and subtraction of decimals including money problems
- Multiply and divide decimals and whole numbers by 10, 100 and 1,000

We will need to use column methods.  
How can we add these two numbers?

H	T	O
1	2	6
+	7	5
_____		

H T O  
1 2 6  
+ 7 5  
\_\_\_\_\_



## KEY LANGUAGE

There is some key language that children will need to know as part of the learning in this unit.

- ➔ add, subtract, multiply, divide
- ➔ ones, tenths, hundredths, thousandths
- ➔ difference, group, share, compare, represent
- ➔ decimal, decimal point, decimal place, digit
- ➔ column, place value, exchange
- ➔ mass, weight, length, width, cost, height

## STRUCTURES AND REPRESENTATIONS

**Place value grid:** This model uses counters to show the value of each column. It supports the column method layout.

O	Tth	Hth	Thth
1 1	1/10 1/10 1/10 1/10	1/100 1/100	1/1000

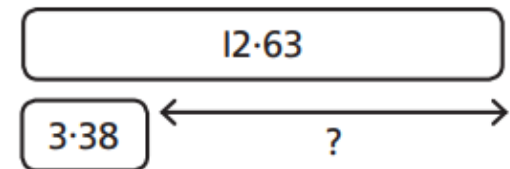
**Column addition and subtraction:** This model demonstrates the place value of each digit in addition and subtraction calculations and shows exchanges between columns.

O	Tth	Hth	Thth
2	4	3	1
+	0	8	0
_____			
2	5	1	1

O	Tth	Hth	Thth
<del>7</del>	<del>1</del> 2	<del>6</del>	<del>1</del> 0
-	6	6	5 3
_____			
1	6	1	7

**Bar model:** This model can be used to compare numbers and identify missing information. It can be used to represent the information in some addition and subtraction word problems.



# Unit 13

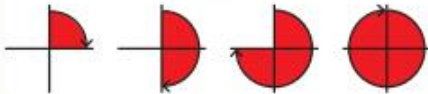
## Geometry – properties of shapes 1



In this unit we will ...

- ✂ Measure angles in degrees
- ✂ Learn to measure angles with a protractor
- ✂ Draw lines and angles accurately
- ✂ Calculate missing angles
- ✂ Learn about angles in shapes

Do you remember about measuring angles as turns?



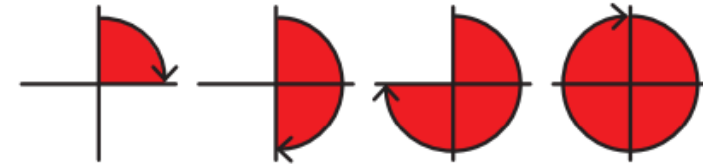
### KEY LANGUAGE

There is some key language that children will need to know as part of the learning in this unit.

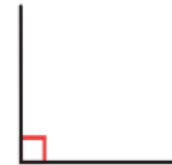
- angle, turn
- whole turn, half turn, quarter turn
- acute angle, right angle, obtuse angle, reflex angle
- degrees (°)
- 90 degrees
- 180 degrees, 360 degrees
- interior angle
- protractor

### STRUCTURES AND REPRESENTATIONS

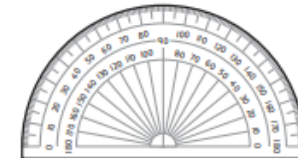
**Angle diagrams:** Use these to help children justify reasoning based on the fractions of a turn.



**Right angles:** The properties of right angles will recur and be important as the unit progresses.



**Protractor:** Children will spend much of the unit developing their understanding of angles through the use of a protractor to measure and draw acute and obtuse angles.



# Unit 14

## Geometry – properties of shapes 2



In this unit we will ...

- ✦ Recognise and draw parallel lines
- ✦ Recognise and draw perpendicular lines
- ✦ Label parallel and perpendicular lines with the correct notation
- ✦ Accurately identify regular and irregular polygons
- ✦ Recognise different 3D shapes from different views

Do you remember how to spot parallel lines? Can you see the pair that are not parallel?



### KEY LANGUAGE

There is some key language that children will need to know as part of the learning in this unit.

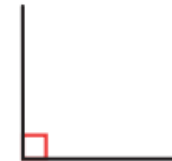
- parallel
- perpendicular
- angle, right angle, interior angle
- grid
- regular, irregular
- polygon, quadrilateral
- 2D, 3D
- viewpoint

### STRUCTURES AND REPRESENTATIONS

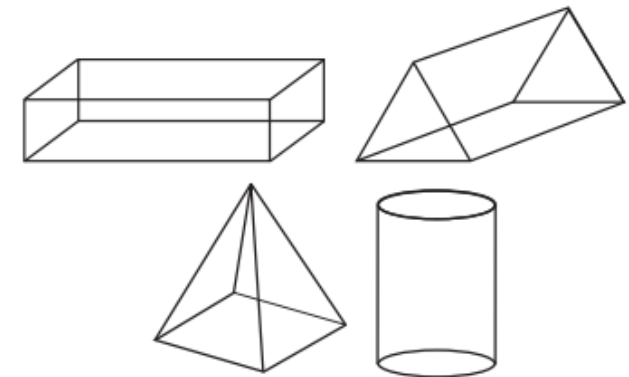
**Arrow notation:** these indicate and distinguish between different sets of parallel lines.



**Right angles:** The properties of right angles will recur and will be important for marking and recognising perpendicular lines.



**2D representations of 3D shapes:** children will need to visualise the solid shape from its 2D representation.



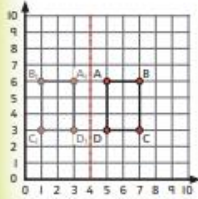
# Unit 15

## Geometry – position and direction



In this unit we will ...

- ⚡ Learn to reflect simple 2D shapes in vertical and horizontal lines
- ⚡ Plot and find coordinates of a reflected point on a grid
- ⚡ Use coordinates to calculate new points of a reflected shape
- ⚡ Translate 2D shapes on grid paper
- ⚡ Use coordinates to find translations



We will be reflecting shapes in a mirror line and using coordinates. What are the coordinates of this reflected shape? Do you notice anything about the reflection?



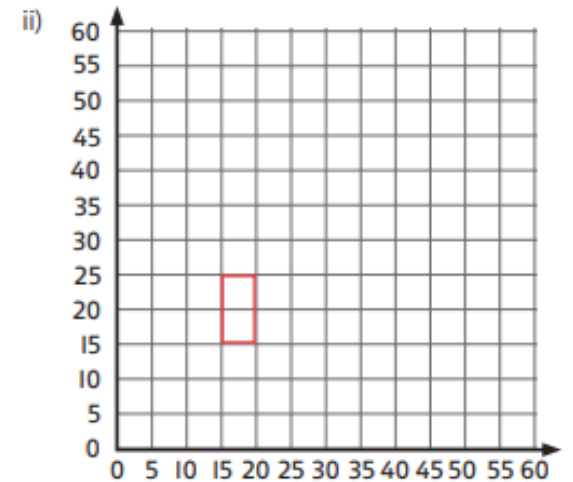
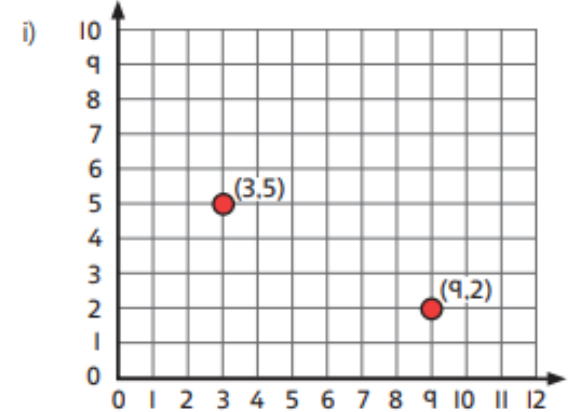
### KEY LANGUAGE

There is some key language that children will need to know as part of the learning in this unit.

- reflection, translation
- mirror line
- coordinate, horizontal coordinate, vertical coordinate
- horizontal axis, vertical axis

### STRUCTURES AND REPRESENTATIONS

**Coordinate grids:** A variety of coordinate grids in the first quadrant, on both squared paper and blank paper, are used in these lessons.



# Unit I6

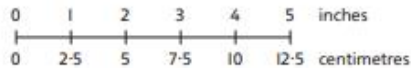
## Measure – converting units



In this unit we will ...

- Convert between metric units of length, mass and capacity
- Recognise imperial units and understand how to convert them into metric units
- Convert between units of time
- Read timetables and understand the information they show
- Solve problems based on measures

How many centimetres are approximately the same as 5 inches?



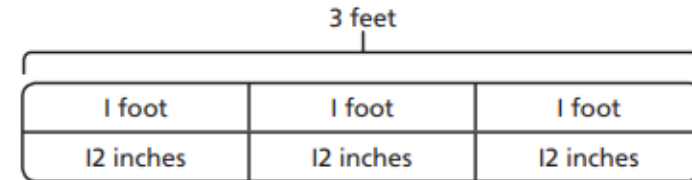
### KEY LANGUAGE

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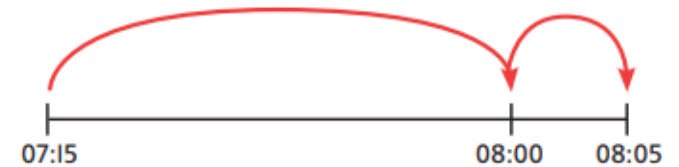
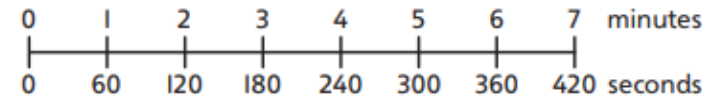
- ➔ mass, capacity, length, time, quantity
- ➔ metric units, gram, kilogram, millilitre, litre, millimetre, centimetre, metre, kilometre
- ➔ imperial units, ounce (oz), pound (lb), stone (st), pint (pt), gallon, inch (in), foot (ft), yard (yd)
- ➔ second, minute, hour, day, week, month, year
- ➔ convert, equal to, equivalent, approximately, per, measure, remainder, multiple
- ➔ timetable, 24-hour, digital, duration

### STRUCTURES AND REPRESENTATIONS

**Bar model:** This model helps children to represent the equivalence between different units of measure. Children can then see the calculation that they need to do to convert one unit into another.



**Number line:** This model also helps children in considering the equivalence of units. It can help them to convert between two units quickly or to recognise where a measurement comes in terms of whole measures and parts (for example, 192 seconds is between 180 and 240 seconds, and so comes between 3 and 4 minutes). Number lines are also useful for working out durations between two times.



## Unit 17

### Measure – volume and capacity



In this unit we will ...

- ✦ Learn what the volume of a shape is
- ✦ Find volumes of shapes by counting unit cubes
- ✦ Draw shapes with different volumes
- ✦ Compare the volume of different shapes
- ✦ Estimate the capacity of different shapes

How many unit cubes are used to make this cube?



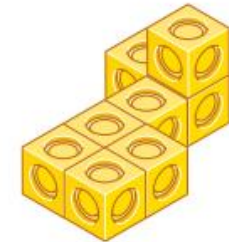
### KEY LANGUAGE

There is some key language that children will need to know as part of the learning in this unit:

- volume, capacity, solid, liquid, container
- cube, cuboid, triangular, prism
- 3D shapes, objects
- calculate, estimate, compare, count, accurately, order, amount, irregular, prediction, exact
- unit (cm) cubes, units of measurement, measure
- less, more, less than (<), more than (>), largest, smallest, least, greatest, equal
- space inside
- height, length, width, size, tall
- layer, slice
- multiple, total, take away, whole, part, almost half, identical
- litre (l), millilitre (ml)

### STRUCTURES AND REPRESENTATIONS

**3D shapes made of unit cubes:** Models like this allow children to count the number of cubes in each solid in order to measure volume.



Models like this allow children to count the number of cubes that will fit inside a container to measure capacity.

