THIRD SPACE LEARNING

Specialist 1-to-1 maths interventions and curriculum resources

Sentence Stems

Geometry

Years 1-6

Sentence Stems in a Nutshell

A sentence stem provides pupils with a way to communicate their ideas with mathematical precision and clarity. A sentence stem is a very structured sentence that often expresses a key conceptual idea or generalisation. The structure of a sentence stem provides a framework to embed conceptual knowledge and build understanding.

To use sentence stems in lessons, first introduce the sentence stem and explain how and when to use it. It is very important that the pupils understand the sentence stem otherwise it will not embed their learning. After this, the teacher should model the sentence stem and the pupils chant it back. Encourage repetition of the sentence stem throughout the lesson or lessons to come.

Sentence stems can be a whole sentence, for example:

A half is one of two equal parts.

Or with missing parts to be filled, for example:

A (fraction) is (numerator) out of (denominator) parts.

Where there is a missing part, we have given an example of a completed sentence as shown below.

There are (number/ items). Half of (whole) is (half).

- *There are 8 counters. Half of 8 is 4.*

By providing the pupils with a structure to follow, they will have an accurate way to discuss the given topic. By using repetition, the concepts expressed in the sentence stems will become embedded.

Year 1 | Shape

1

Sentence Stems

General

A 2-D shape is a flat shape.

Naming and recognising shapes

This is a (name of shape).

- *This is a cube.*

I can see the (3-D shape) has a (2-D shape face).

- *I can see the cube has a square (face).*

I can use this part of a (3-D shape) to draw a (2-D shape). *Note that this is used when using a 3-D shape as a stencil or to print a 2-D shape.*

- *I can use this part of a cuboid to draw a square.*

Sorting shapes

These shapes have been sorted by… because…

This shape will roll because…

This shape will stack because…

Patterns

The pattern is (say pattern).

- *The pattern is circle, square, triangle, circle, square, triangle.*

The core pattern is (say pattern) and then it repeats.

- *The core pattern is circle, square, triangle and then it repeats.*

The (shape) comes before/ after (shape).

- *The circle comes before the square*

Vocabulary

Cube	Face
Cuboid	Curved
Pyramid	Rectangle
Cone	Square
Cylinder	Circle
Sphere	Triangle

Year 1 | Position and direction

1

Sentence Stems

Turns

This (item) has made a (quarter/ half/ three-quarter/ full) turn.

- *This shape has made a half turn.*

Position

The (item a) is (position) the (item b).

- *The box is below the table.*

Vocabulary

Turn	Forwards
Quarter	Backwards
Half	Above
Three-quarter	Below
Full	Top
Left	In between
Right	Bottom

Year 2 | Properties of shape

2

Sentence Stems

General

A vertex is where two sides meet.

2-D properties of shapes

This is a 2-D shape. It is a (name of shape). It has (number) sides.

- *This is a 2-D shape. It is a square. It has 4 sides.*

This is a 2-D shape. It is a (name of shape). It has (number) vertices.

- *This is a 2-D shape. It is a square. It has 4 vertices.*

Symmetry

A shape is symmetrical if it can be divided into two equal parts and both parts look exactly the same.

Making patterns

In this pattern, the (number) shape will be (shape) because…

- *In this pattern, the 10th shape will be a square because…*

3-D properties of shapes

This is a 3-D shape. It is a (name of shape). It has (number) flat faces.

- *This is a 3-D shape. It is a cuboid. It has 6 flat faces.*

OR This is a 3-D shape. It is a (name of shape). It has (number) flat faces and (number) of curved surfaces.

- *This is a 3-D shape. It is a cylinder It has 2 flat faces and one curved surface.*

OR This is a 3-D shape. It is a sphere. It has one curved surface.

Vocabulary

Pentagon
Hexagon
Sides
Vertices or vertex
Symmetry
Line of symmetry
Vertical line of symmetry
Face
Surface
Curved surface
Edge
Apex

Sentence Stems continued

An edge is where two faces meet or where a face and a curved surface meet.

This is a 3-D shape. It is a (name of shape). It has (number) edges.

- *This is a 3-D shape. It is a cube. It has 12 edges.*

A vertex is where two or more edges meet.

The top of a cone is an apex or a vertex.

This is a 3-D shape. It is a (name of shape). It has (number) vertices.

- *This is a 3-D shape. It is a cube. It has 8 vertices.*

Year 2 | Position and direction

2

Sentence Stems

Movement

The (item) has moved (number) squares (direction).

- *The car has moved 2 squares forwards.*

Clockwise is the direction the hands move on a clock.

Anti-clockwise is the opposite direction.

This (item) has made a (quarter/ half/ three-quarter/ full) turn (direction).

- *This shape has made a half turn clockwise.*

Vocabulary

Forwards
Backwards
Up
Down
Clockwise
Anti-clockwise

Year 3 | Properties of shape

3

Sentence Stems

Angles

An angle is made where two lines meet at a point.

Angles are measured by the amount of turn it would take for one line to meet the other line.

A right angle is a quarter turn.

Two right angles make a half turn.

Three right angles make a three-quarter turn.

Four right angles make a full turn.

An angle that is greater than a right angle (but less than a straight line) is called an obtuse angle.

An angle that is less than a right angle is called an acute angle.

Drawing/ measuring lines

When using a ruler, it is easiest to start from 0.

Lines

A line that runs straight from left to right is a horizontal line.

A line that runs straight up and down is a vertical line.

Parallel lines never meet, they stay the same distance apart.

Perpendicular lines meet at a right angle.

3-D and 2-D shapes

A prism is the same shape all the way through.

A polygon is a closed 2-D shape made with three or more straight sides and vertices.

This is a (3-D shape). It has (number) faces, (number) edges and (number) vertices.

- *This is a cube. It has 6 faces, 12 edges and 8 vertices.*

Vocabulary

Turn
Angle
Clockwise
Anti-clockwise
Right angle
Acute
Obtuse
Horizontal
Vertical
Parallel
Perpendicular
Prism
Polygon

Year 4 | Properties of shape

4

Sentence Stems

Describing angles

Angles are measured in degrees.

An acute angle is more than 0 degrees and less than 90 degrees.

A right angle is 90 degrees exactly.

An obtuse angle is more than 90 degrees and less than 180 degrees.

A straight line is 180 degrees.

This is a/ an (angle type) because it is (description of angle).

- *This is an acute angle because it is less than 90 degrees.*

Triangles

An equilateral triangle has three equal sides and equal internal angles.

An isosceles triangle has two equal sides and two equal internal angles.

A scalene triangle has three different length sides and three different internal angles.

A right angle-triangle is a triangle containing a right angle.

Quadrilateral

A quadrilateral is a shape with four sides and four vertices.

'Quad' means four.

Vocabulary

Degrees
Isosceles
Scalene
Equilateral
Right-angle triangle
Quadrilateral
Trapezium
Rhombus
Parallelogram

Year 4 | Position and direction

4

Sentence Stems

Coordinates

A coordinate is a fixed point.

The x-axis is the horizontal axis.

The y-axis is the vertical axis.

Coordinates are written (x-axis, y-axis).

Read the x-axis then the y-axis.

Coordinates are plotted on the grid lines.

Translation

Translate means to move.

Shapes do not change size or shape when translated.

Translate (number) units to the (left/right) and (number) units (up/down).

- *Translate 3 units to the left and 3 units down.*

Vocabulary

Coordinates
x-axis
y-axis
Translate

Year 5 | Properties of shape

5

Sentence Stems

Angles

The turn from line a to line b is (more than/ less than) a right angle. It is an (acute/ obtuse) angle.

- *The turn from line a to line b is more than a right angle. It is an obtuse angle.*

A full turn is 360 degrees.

A reflex angle is larger than 180 degrees and smaller than 360 degrees.

Protractors

A protractor is used to measure angles.

When using a protractor, the vertex must be in the middle of the protractor. *(Note that pupils should try to measure with one line on 0 degrees but they need to understand that this is not essential.)*

Regular and irregular shapes

If all the sides and internal angles of a shape are equal, it is a regular shape. If the sides are not all equal and the internal angles are not all equal, the shape is irregular.

Vocabulary

Reflex
Protractor
Regular
Irregular

Sentence Stems

Reflection

The object is the name of the shape before the reflection. The image is the name of the shape after reflection.

Vocabulary

Reflection
Reflect
Mirror line
Translation

Year 6 | Properties of shape

6

Sentence Stems

Vertically opposite angles

Where lines intersect (cross), they create vertically opposite angles. Vertically opposite angles are always equal.

Internal angles in shapes

The internal angles of a triangle always add up to 180 degrees.

The internal angles of quadrilaterals always add up to 360 degrees.

For the sum of internal angles in polygons: 180 degrees x (number of sides – 2)

- *For a pentagon: 180 degrees x (5 – 2)*

Vocabulary

Vertically opposite

Year 6 | Position and direction

6

Sentence Stems

See previous position and direction sentence stems.

Vocabulary

Quadrant
First quadrant
Four quadrants