

Year 9 Maths Learning Journey

Spring Term 6

Reasoning with geometry: Pythagoras' theorem

Core knowledge	Reference number
Squares and roots (R) "What's the difference between the square of a number and the square root of a number?"	WORKSHEET
Identify the hypotenuse of a right-angled triangle "How can you identify that a side is the hypotenuse?"	<u>WORKSHEET</u>
Determine whether a triangle is right angled "is this triangle a right angled triangle? How do you know?"	<u>WORKSHEET</u>
Calculate the hypotenuse of a right-angled triangle "Which term in Pythagoras theorem represents the hypotenuse? Does is matter which of the shorter two sides is <i>a</i> and which is <i>b</i> ?"	WORKSHEET
Calculate missing sides in right angled triangles "Why can the hypotenuse never be the same as another length in a right angled triangle?"	<u>WORKSHEET</u>
Use Pythagoras' theorem on coordinate axes "What's the same and what's different about the points (2,1) and (1,2)?"	WORKSHEET
Explore proofs of Pythagoras' theorem "What's the difference between a demonstration and a proof?"	WORKSHEET
Use Pythagoras' theorem in 3D shapes (H) "What is the same and what is different about using Pythagoras theorem with 3D shapes?"	WORKSHEET

Learning Checkpoints

LC Title	Completed	Dirt
Pythagoras' theorem		

Key Vocabulary

Adjacent (in Pythagoras): Two angles are Adjacent when they have a common side and a common

vertex (corner point)

Cuboid: A three-dimensional figure with six rectangular faces.

Decimal place: the position of a digit to the right of a decimal point.

Diagonal: A line segment joining any two non-adjacent vertices of a polygon.

Gradient: a measure of the slope of a line.

Hypotenuse: The longest side of a right-angled triangle, opposite the right angle.

Integer: Any of the positive or negative whole numbers and zero. Example: 2, -1,

Line segment: The part of a line that connects two points. It is the shortest distance between the two points.

Negative: An integer less than 0.

Opposite (in Pythagoras): an "opposite" side is the one across from a given angle

Origin: a fixed point from which measurements are taken. See also Cartesian coordinate system.

Quadrant: one of the four regions into which a plane is divided by the x and y axes in the Cartesian coordinate system.

Right angled triangle: a triangle in which one angle is a right angle (that is, a 90-degree angle) **Significant figures:** The run of digits in a number that are needed to specify the number to a required degree of accuracy.

Square: The square of a number is the product of the number and itself.

Square root: A number whose square is equal to a given number

Sum: The result of one or more additions