



Maths

Properties of Shape

Need a coherently planned sequence of lessons to complement this resource?

Lesson Breakdown

Below is our suggestion for the most coherent and progressive sequence to teach this area of Planit Maths steps on the White Rose Maths scheme of learning although we have not aimed to mirror the exact order in which the resources are presented.

Recall and Use Facts (1): Number Facts up to 10

This computer game themed lesson is designed to help children secure their understanding of number facts. Children use a range of methods to investigate and check if they are correct. Differentiated activity sheets and mastery cards to help children.

NC Statement: Recall and use facts to 20 fluently and derive and use related facts up to 100.

Lesson Aim: To recall and use number facts up to 10.

Recall and Use Facts (2): Number Facts up to 20

This lesson teaches children to use familiar number facts to solve and create problems. Children are encouraged to use different representations to support their learning. Differentiated activity sheets and mastery cards to help children develop fluency.

NC Statement: Recall and use facts to 20 fluently and derive and use related facts up to 100.

Lesson Aim: To recall and use number facts up to 20.

Solve Problems (1): Using Different Representations to Solve Problems

Children learn to solve addition and subtraction problems using concrete objects and pictorial representations, including those involving numbers, quantities and measures, applying their increasing knowledge of mental and written methods. This lesson includes Diving into Mastery activity cards with fluency reasoning.

NC Statement: Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures, applying their increasing knowledge of mental and written methods.

Lesson Aim: To solve addition and subtraction problems using objects, pictures and models.

Introduction

In this unit, children will learn to recall and use addition and subtraction facts. They use a variety of different models, images and equipment to build their number sense, enabling them to use facts flexibly. They learn different strategies to help them add and subtract numbers efficiently, explaining their methods with concrete resources or jottings. Methods include: adding a unit to a ten, adding three single-digit numbers and adding and subtracting multiples of ten leading to pairs of two-digit numbers. They find the difference between numbers and reason about when it is quicker to find the difference or take away. They build up their understanding of commutativity and inverse relationships, using these to solve increasingly complex missing number problems. They apply their learning to problem-solving, and are able to ask questions, explain their choices and demonstrate their methods.

Resources

In addition to your standard maths resources, you will need:

- digital cameras

Assessment Statements

By the end of this unit;

children working towards the expected level will be able to:

- recall and use at least four out of six number facts to ten and derive their associated subtraction facts;
- add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required;
- explain their addition and subtraction methods verbally, in pictures or using apparatus;
- understand that two numbers can be added in any order and the answer will be the same.

children working at the expected level will be able to:

- recall number facts to add and within ten and subtraction facts. Use these to derive number facts to add and within 20 and 100;
- add and subtract within 100: a two-digit number and ones, a two-digit number and tens, two two-digit numbers;
- add three one digit numbers using efficient methods;
- understand that addition is commutative and subtraction is not, and explain what this means;
- use the inverse relationship between addition and subtraction to solve problems and check their calculations;
- solve addition and subtraction problems in context of quantities and measures, using pictures and mentally.

Addition and Subtraction

Maths | Year 2 | Steps to Progression Overview

The aim of this overview is to support teachers using Planit Maths to show the most coherent and progressive sequence to teach each area of maths. We also want to fully support teachers who use the White Rose Maths scheme of learning to make full use of the resources available within Planit Maths. Wherever possible, lesson packs have been matched to each of the small steps on the White Rose Maths scheme of learning.

Yearly Overview

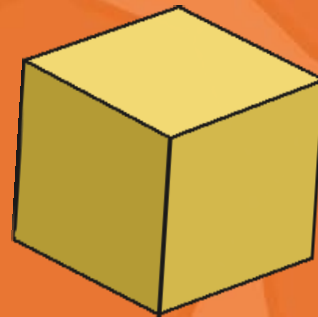
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn				Number: Addition and Subtraction							Measurement: Money	Number: Multiplication and Division
Spring	Number: Multiplication and Division		Statistics		Geometry: Properties of Shape				Number: Fractions		Measurement: Length and Height	Consolidation
Summer	Position and Direction		Problem Solving and Efficient Methods		Measurement: Time			Measurement: Mass, Capacity and Temperature			Investigations	

See our [Properties of Shapes Steps to Progression](#) document.

Twinkl Planit is our award-winning scheme of work with over 4000 resources.



Introducing Regular Polyhedrons



Aim

- To recognise and describe the properties of regular polyhedrons.

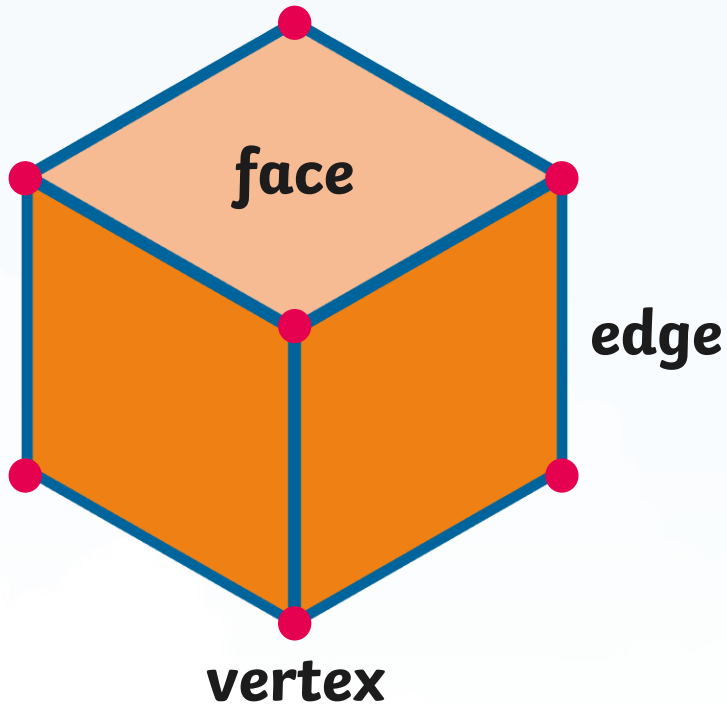
Success Criteria

- I can identify regular polyhedrons.
- I can describe the properties of regular polyhedrons.
- I can compare regular polyhedrons.

Remember It



Can you remember what we call these properties of 3D shapes?



The face is a flat surface of a 3D shape.

The edge is where the faces meet.

The vertex is where the edges meet.

vertices

This is the word used for more than one vertex.



Remember It



Which 3D shapes are these properties describing?

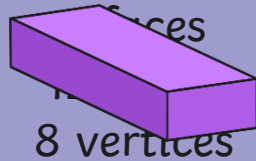
4 faces
6 edges
4 vertices



Click here for
triangular-based
the name of
pyramid
the shape.

Click here for
an extra
property.

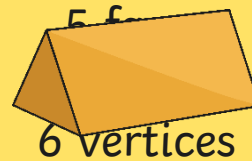
6 faces
12 edges
8 vertices



Click here for
the **cuboid**
of
the shape.

Click here for
an extra
property.

5 faces
9 edges
6 vertices



Click here for
triangular prism
the shape.

Click here for
an extra
property.

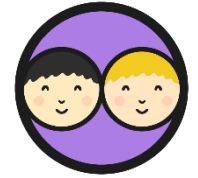
5 faces
8 edges
5 vertices



Click here for
square-based
the name of
pyramid
the shape.

Click here for
an extra
property.

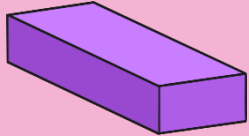
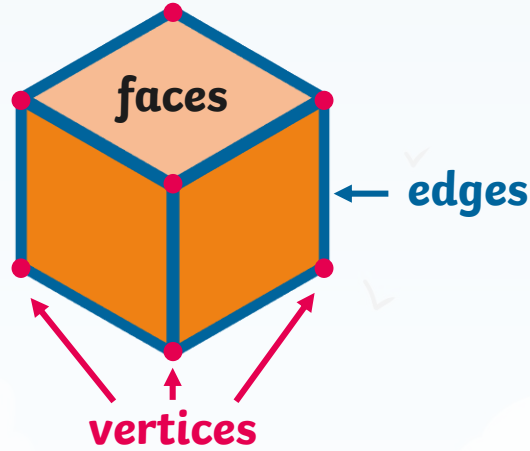
Click on the panels to reveal each shape and their names.



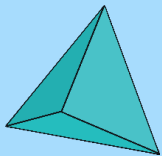
Remember It

Describe a 3D shape to a friend.

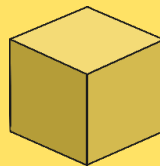
Tell them about its properties.



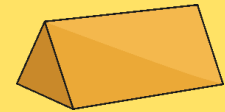
cuboid



triangular
pyramid



cube



triangular
prism



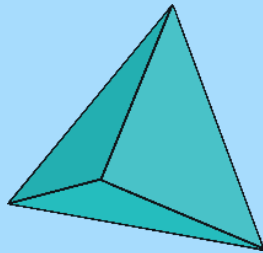
square-based
pyramid

Spot the Difference

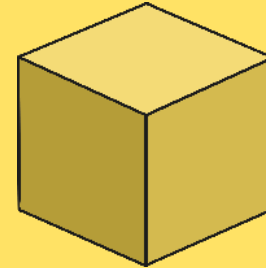


Compare these 3D shapes.

Reveal Answer



triangular-based pyramid



cube

What is the same?

What is different?

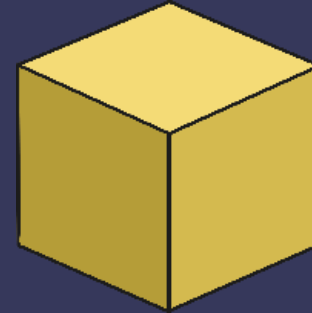
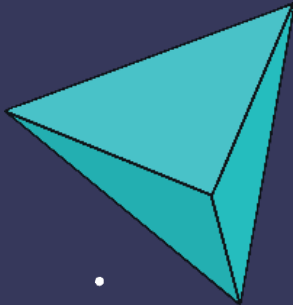
The shapes have a different number of faces, edges and vertices.

Each shape has faces that are all the same shape and edges that are all the same length.

Introducing Regular Polyhedrons



These are special 3D shapes.

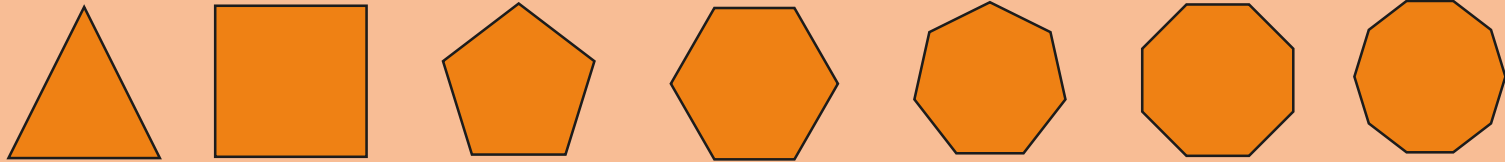
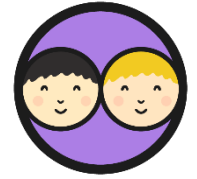


They are called regular polyhedrons.

The faces on a regular polyhedron are all the same regular polygon shape. They are the same size and they are flat.

They have straight edges all of the same length.

Introducing Regular Polyhedrons



What do you remember about regular polygons?

Polygons are closed shapes.

The sides are straight.

Regular polygons have sides that are all the same length.

Discovering Regular Polyhedrons

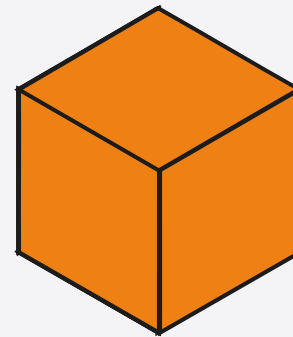


Let's check to see if a cube is a regular polyhedron.



A cube has 6 square faces.

The edges are the same length.

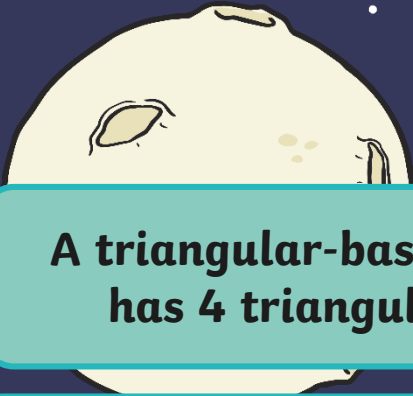


A cube is a regular polyhedron.

Discovering Regular Polyhedrons

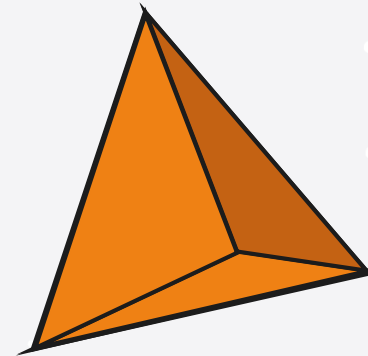


Is a triangular-based pyramid a regular polyhedron? Let's check.



A triangular-based pyramid has 4 triangular faces.

The edges are the same length.



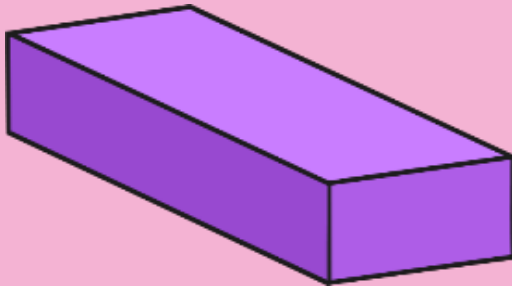
A triangular-based pyramid is a regular polyhedron.

Discovering Regular Polyhedrons



Is this cuboid a regular polyhedron?

Reveal Answer



Can you explain why?

The faces are the same polygon shape, but the edges are different lengths. So this cuboid isn't a regular polyhedron.

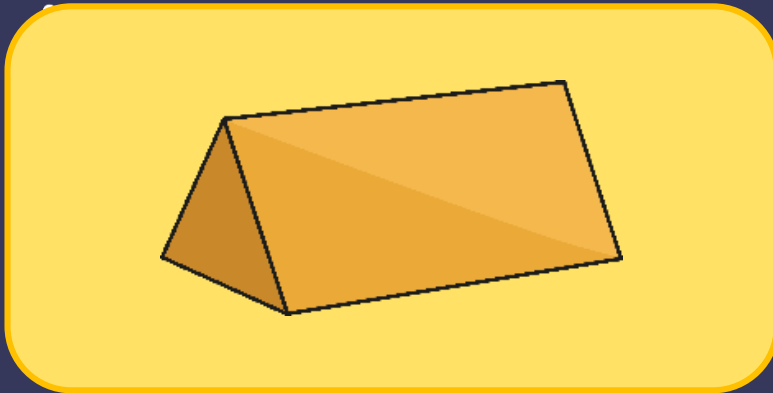


Discovering Regular Polyhedrons



Is this triangular prism a regular polyhedron?

Reveal Answer



Can you explain why?

**The faces are different polygon shapes and the edges are different lengths.
So a triangular prism isn't a regular polyhedron.**

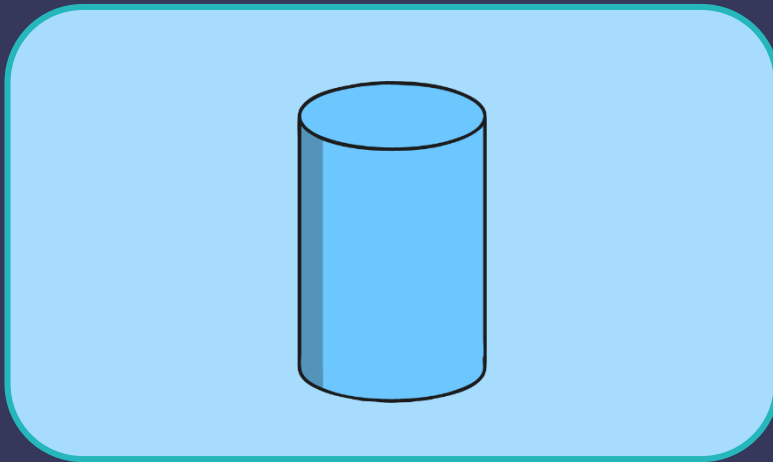


Discovering Regular Polyhedrons



Is this cylinder a regular polyhedron?

Reveal Answer



Can you explain why?

Although the edges are the same length, they are curved. It has two flat faces and a curved surface that is not the same.

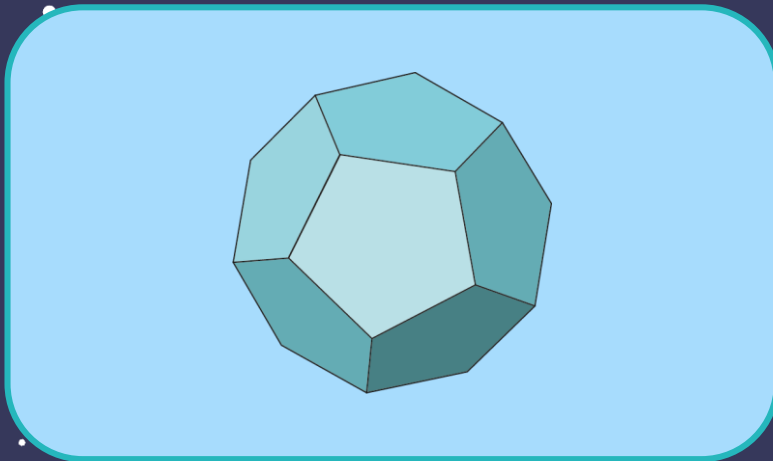
So a cylinder isn't a regular polyhedron.



Discovering Regular Polyhedrons



Explain how you know a dodecahedron is a regular polyhedron.



**The faces are all regular pentagons.
The edges are all the same length.**

Reveal Answer

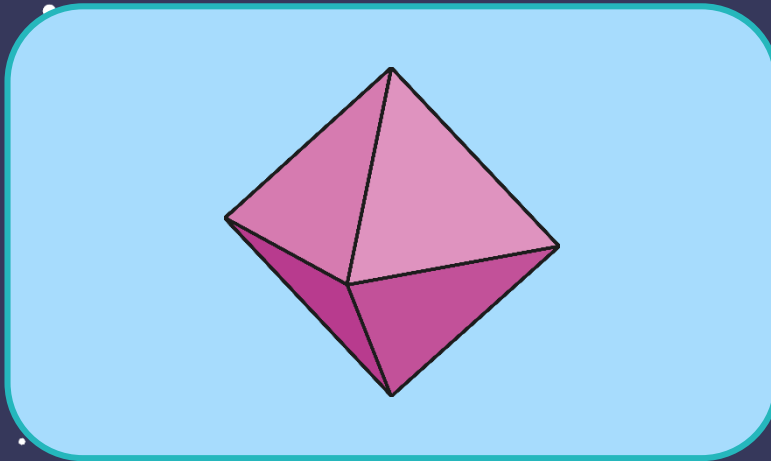
What shape are all the faces?



Discovering Regular Polyhedrons



Explain how you know an octahedron is a regular polyhedron.



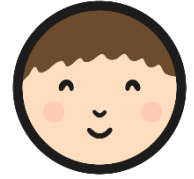
**The faces are all regular triangles.
The edges are all the same length.**

Reveal Answer

What shape are all the faces?



Shape Detectives

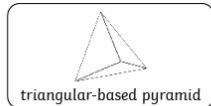


Introducing Regular Polyhedra

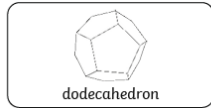
To recognise and describe the properties of regular polyhedra

Find 3D shapes to match the pictures.

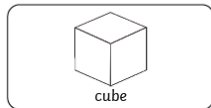
Draw lines to match the regular polyhedrons with the number of their faces and complete the empty box.



8



6



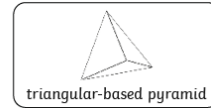
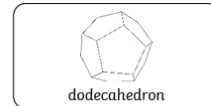
12

Introducing Regular Polyhedra

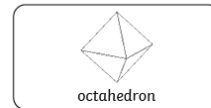
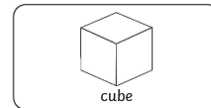
To recognise and describe the properties of regular polyhedra

Find 3D shapes to match the pictures.

Draw lines to match the regular polyhedrons with their face and complete the empty boxes.



12

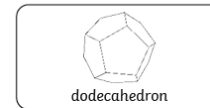
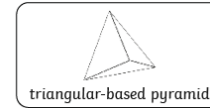
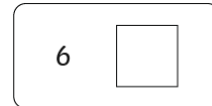
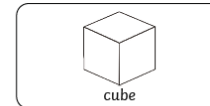


Introducing Regular Polyhedrons

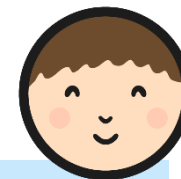
To recognise and describe the properties of regular polyhedrons.

Find 3D shapes to match the pictures.

Complete number and shape of the faces for each regular polyhedron. The first has been done for you.



Diving into Mastery



Dive in by completing your own activity!



Introducing Regular Polyhedrons



Use solid shapes to solve these challenges.

Tick the pictures that show regular polyhedrons.



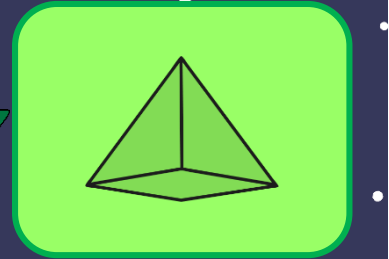
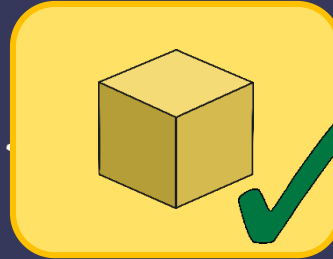
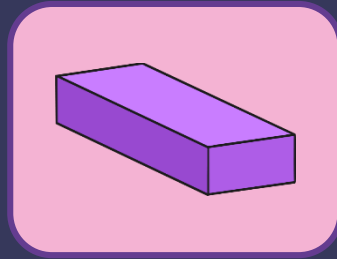
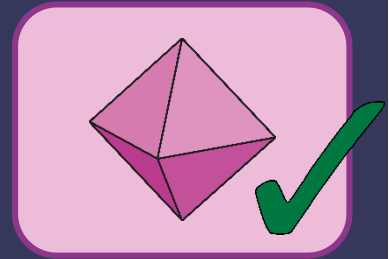
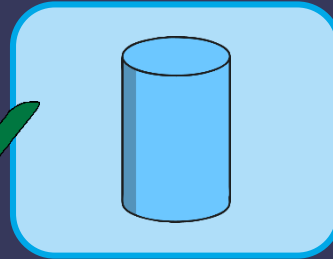
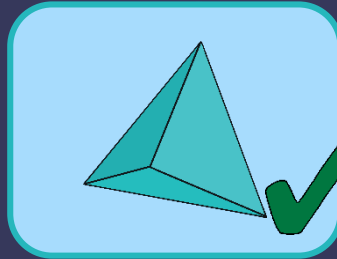
How do you know?

These are regular polyhedrons because the faces are _____ and the edges are _____.

Quick Quiz



Can you spot the regular polyhedrons?



Can you explain how you know?

Quick Quiz



Which one of these statements is false?

Regular polyhedrons have straight edges.

True. Regular polyhedrons have straight edges.

The edges of regular polyhedrons are the same length.

True. The edges of regular polyhedrons are the same length.

Some regular polyhedrons have circular faces.

False. The faces of regular polyhedrons must have straight edges.

All the faces are the same shape on regular polyhedrons.

True. All of the faces are the same shape on a regular polyhedron.

Explain your reasoning.

Aim



- To recognise and describe the properties of regular polyhedrons.

Success Criteria

- I can identify regular polyhedrons.
- I can describe the properties of regular polyhedrons.
- I can compare regular polyhedrons

