



Maths

Properties of Shapes

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 and within ten and subtraction facts. Use these to derive number facts to 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

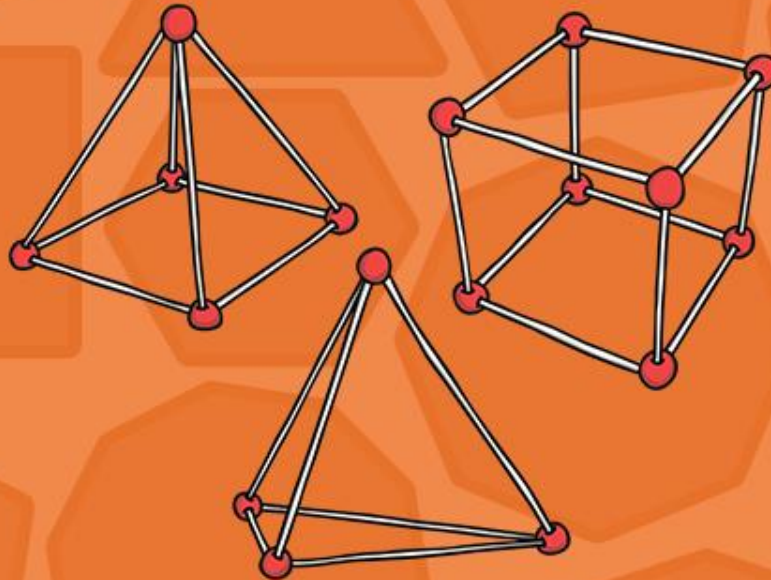
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction				Measurement: Money		Number: Multiplication and Division		
Spring	Number: Multiplication and Division		Statistics	Geometry: Properties of Shape			Number: 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.



Build 3D Shapes



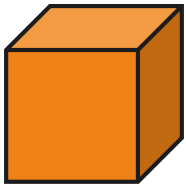
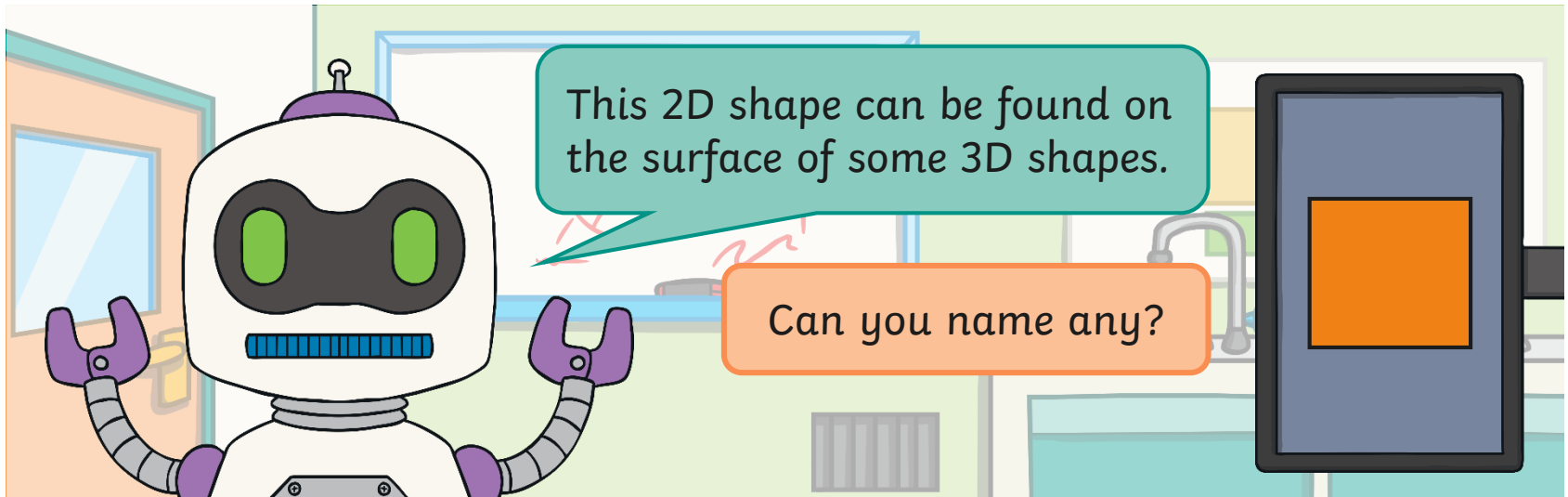
Aim

- To construct 3D shapes from 2D diagrams.

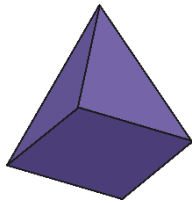
Success Criteria

- I can match 3D shapes to 2D representations.
- I can describe 3D shapes according to faces, edges and vertices.
- I can construct 3D shapes from 2D diagrams.

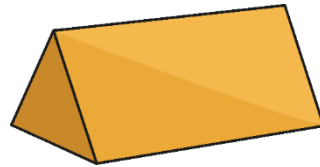
Remember It



cube



**square-based
pyramid**

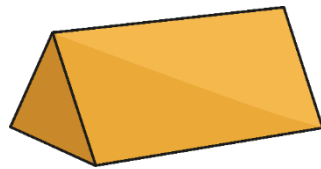
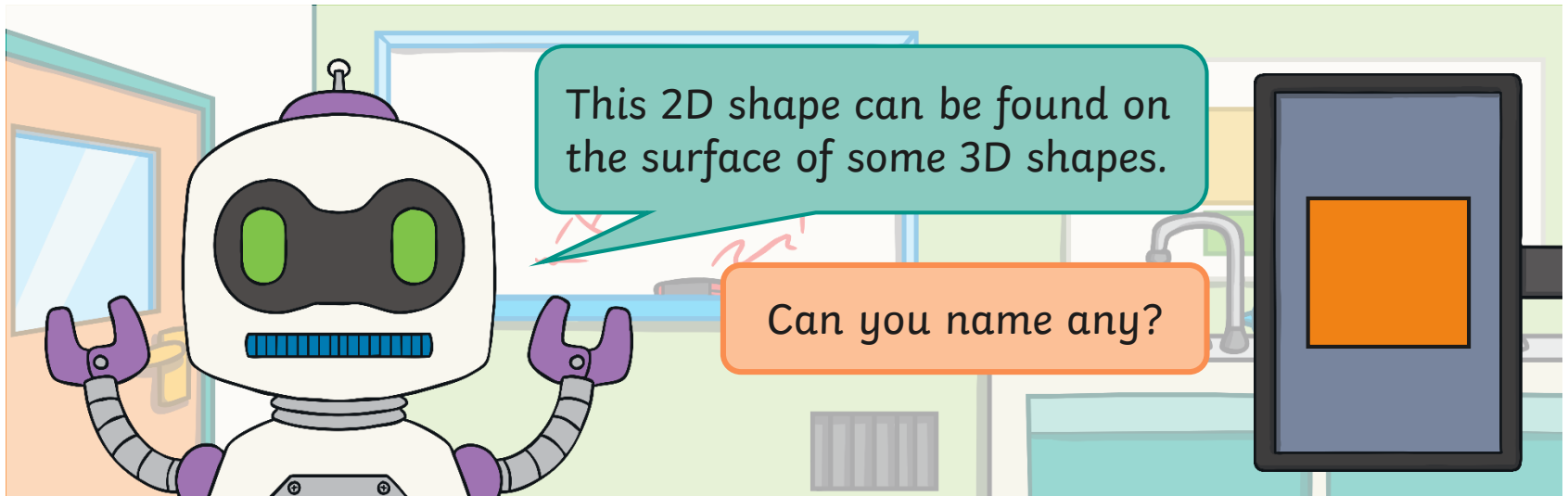


**some
triangular prisms**



some cuboids

Remember It

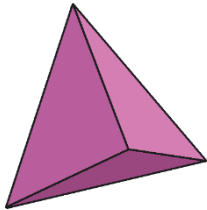
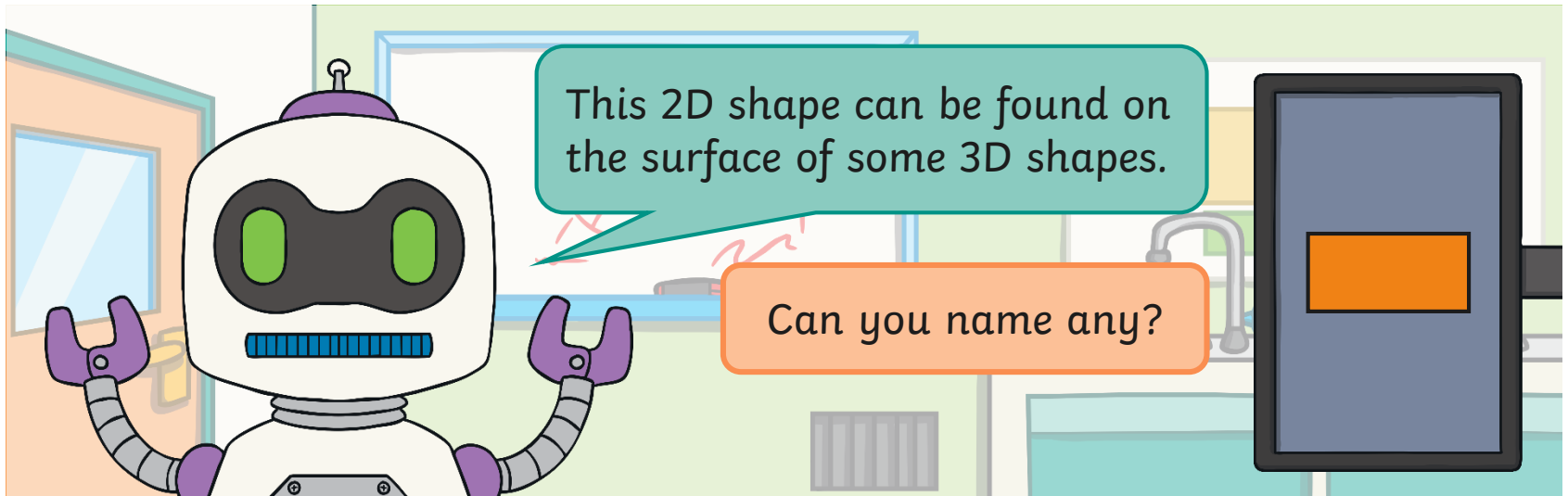


**some
triangular prisms**

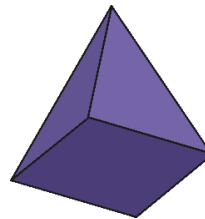


some cuboids

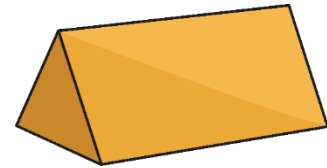
Remember It



triangular-based pyramid
also known as a tetrahedron



square-based pyramid

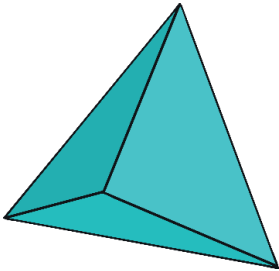


triangular prisms

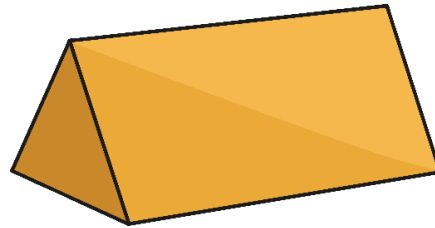
Shape Models



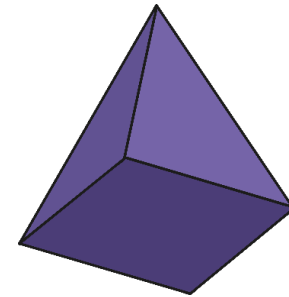
Which diagram is the same as my shape model? Can you explain why?



triangular-based
pyramid (tetrahedron)

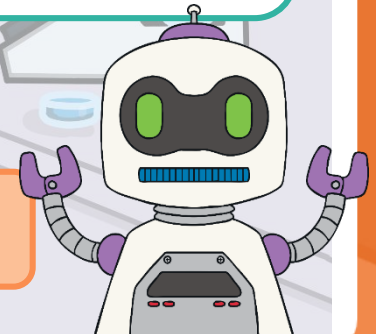


triangular prism



square-based
pyramid

It is a square-based pyramid as it has 5 faces, 8 edges and 5 vertices. All of the edges are the same size.



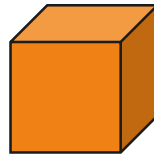
Shape Models



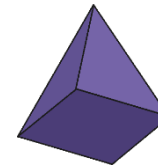
Which diagram is the same as my shape model? Can you explain why?



triangular-based
pyramid
(tetrahedron)



cube

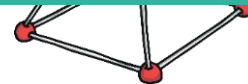


square-based
pyramid

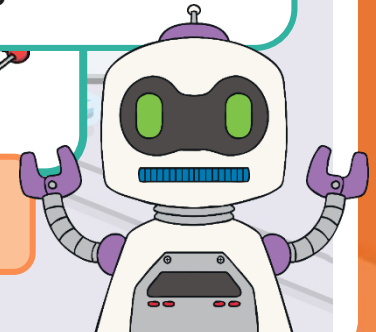
triangular-based
pyramid (tetrahedron)

triangular prism

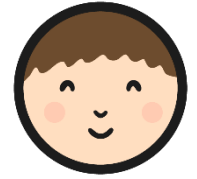
square-based
pyramid



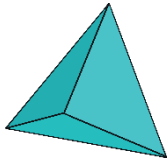
What is the same about these shapes? What is different?



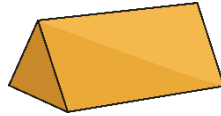
Build It



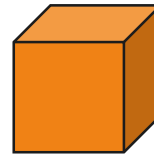
Can you build these shapes with straws and clay?
Discuss how you might do this.



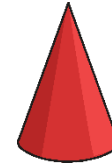
triangular-based pyramid
(tetrahedron)



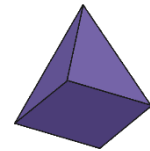
triangular
prism



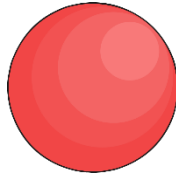
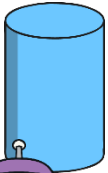
cube



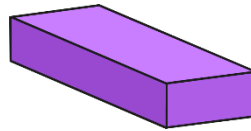
cone



square-based
pyramid



sphere

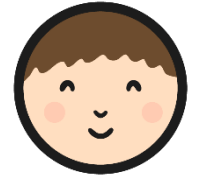


cuboid

Top Tips:

Build your models from the base upwards in order to make this task easier!
Roll your clay into balls in order to make strong joints!

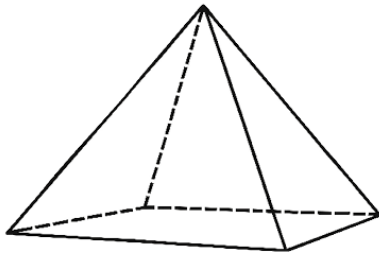
Build It



Build It

I can construct 3D shapes from 2D diagrams.

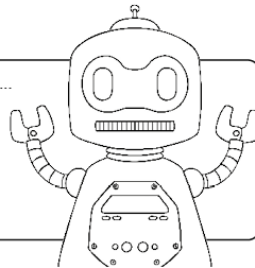
Use straws and modelling clay to build a 3D model of this shape.



square-based pyramid

Before building your shape, think about...

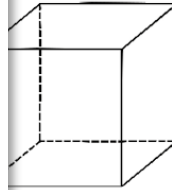
- How many faces does it have?
- What shapes are these faces?
- How many vertices does it have?
- How many edges does it have?



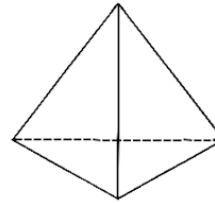
Build It

I can construct 3D shapes from 2D diagrams.

Use straws and modelling clay to build a 3D model of these shapes.



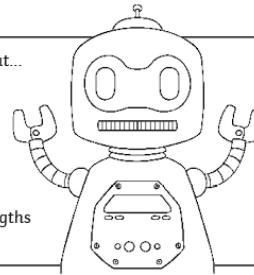
cube



tetrahedron
(triangular-based pyramid)

When building your shape, think about...

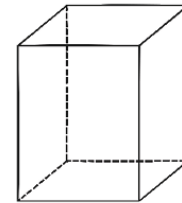
- How many faces does it have?
- What shapes are these faces?
- How many vertices does it have?
- How many edges does it have?
- What do you notice about the lengths of these edges?



Build It

I can construct 3D shapes from 2D diagrams.

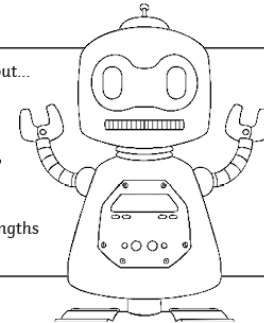
Use straws and modelling clay to build a 3D model of these shapes.



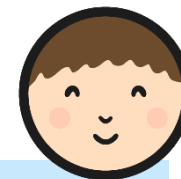
cuboid

When building your shape, think about...

- How many faces does it have?
- What shapes are these faces?
- How many vertices does it have?
- How many edges does it have?
- What do you notice about the lengths of these edges?



Diving into Mastery



Dive in by completing your own activity!



Build 3D Shapes

Use 3D shapes, straws and modelling clay to solve these challenges.

Which 3D shapes could be made with the modelling clay and straws?

Max

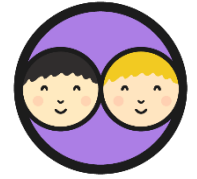
Draw lines to match them up.

How many balls of modelling clay and straws do we need to make these 3D shapes?

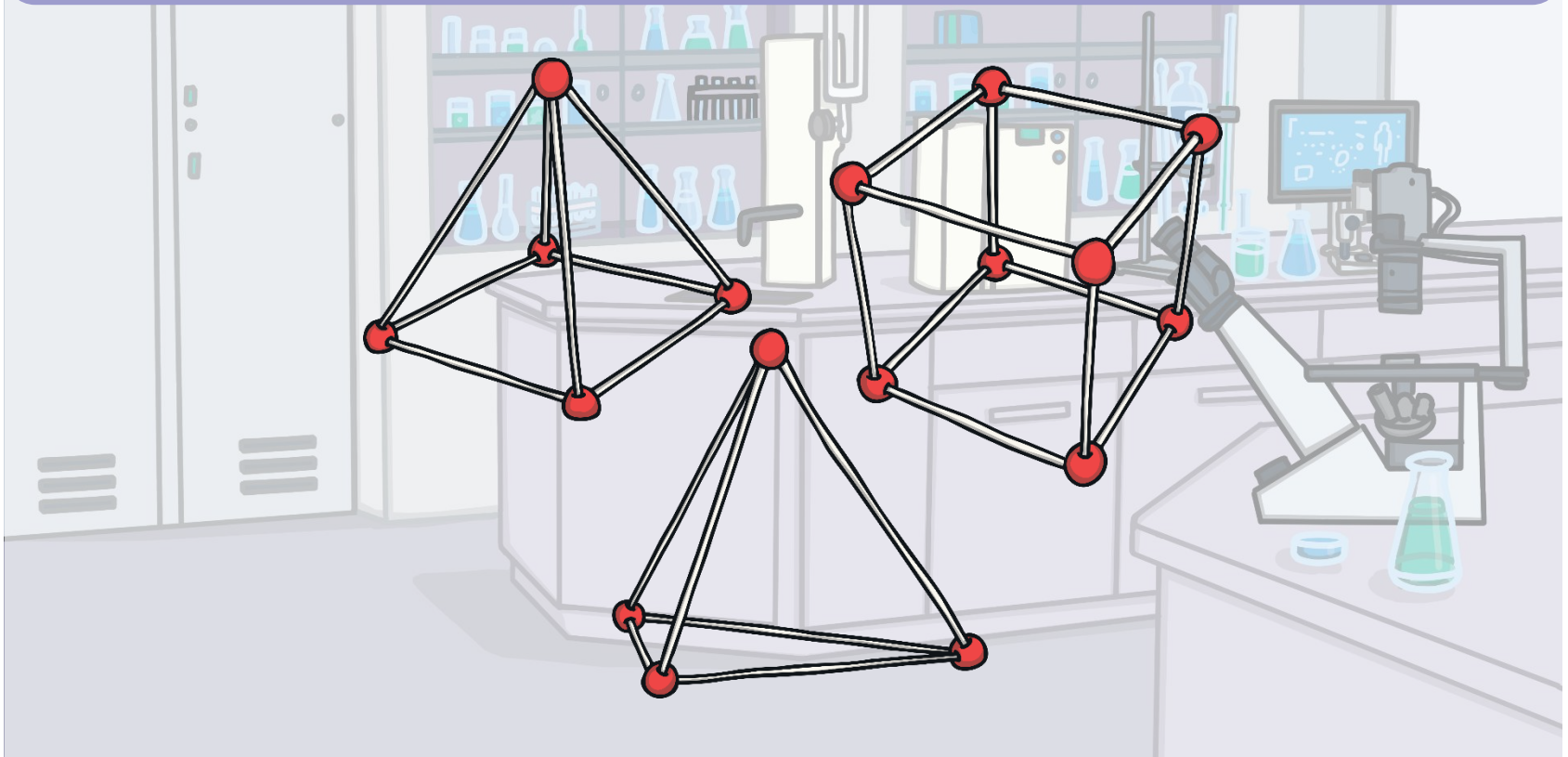
	<input type="checkbox"/>	modelling clay balls	<input type="checkbox"/>	straws
	<input type="checkbox"/>	modelling clay balls	<input type="checkbox"/>	straws

W?

Describe My Shape



Hide your model and describe its properties to your partner.
Can they guess what you built?



Aim



- To construct 3D shapes from 2D diagrams.

Success Criteria

- I can match 3D shapes to 2D representations.
- I can describe 3D shapes according to faces, edges and vertices.
- I can construct 3D shapes from 2D diagrams.

