

## Math Program — Grade 2

### Section 3: *Measurement and Geometry*

### Aligning Learning With the Content Standards:

Students need to:

- Be able to understand the difference between plane and solid shapes.
- Sort shapes according to faces, edges, and vertices.



### Math Language:

Students should become increasingly confident in using such terms and phrases as:

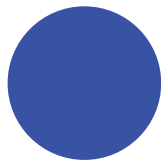
*Plane shapes, solid shapes, circle, triangle, square, sphere, pyramid, cube, rectangular prism, faces, edges, vertices, equal.*

### Student Exercise:

#### Here are Plane Shapes



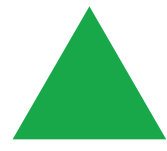
Square



Circle



Rectangle

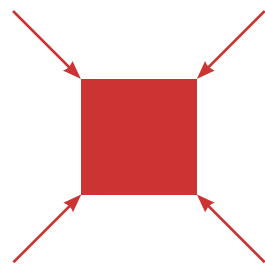


Triangle

**They keep their name even if they are turned around.**

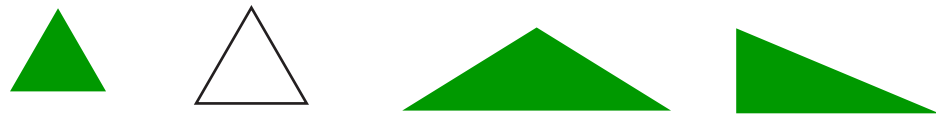
Section 3: Measurement and Geometry

A square has four corners.



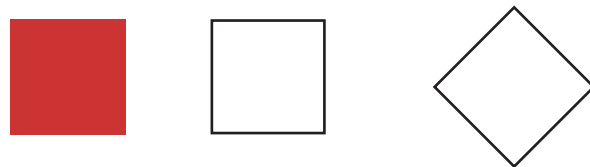
These are all **triangles**.

Triangles have 3 sides and straight edges.



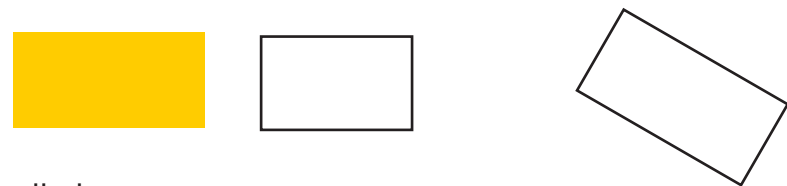
These are all **squares**.

Squares have 4 equal sides and straight edges.



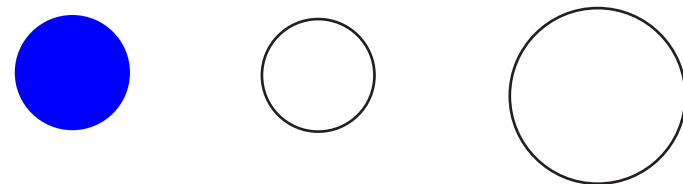
These are all **rectangles**.

Rectangles have 4 sides and straight edges.



**Circles** can be all sizes.

They have curved edges.



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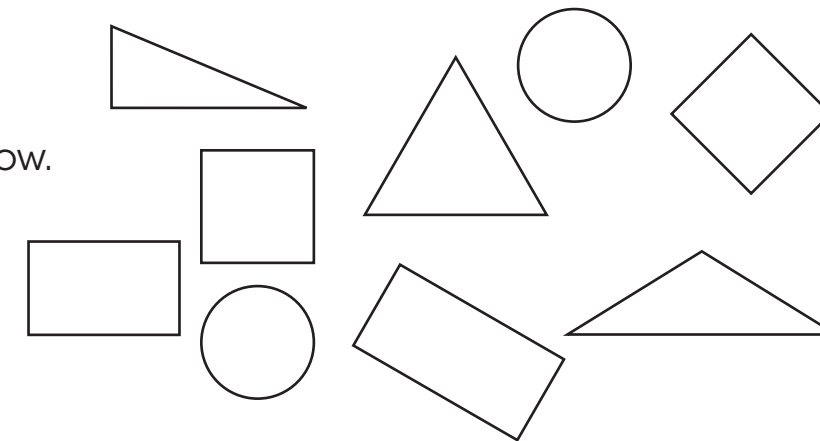
Here are some shapes.

Color all the triangles red.

Color all the squares blue.

Color all the rectangles yellow.

Colour all the circles green.



Fill in the boxes

Name of the shape	circle	<b>triangle</b>	<b>square</b>	<b>rectangle</b>
How many sides?	<b>0</b>	<b>3</b>	4	<b>4</b>
Has curved edges?	<b>yes</b>	<b>no</b>	<b>no</b>	<b>no</b>
How many straight edges?	<b>0</b>	3	<b>4</b>	<b>4</b>

Circle your answer.



Which shape has 3 sides?

A  B  C  D

Which shapes have straight edges?

A  B  C  D

Which shape has curved edges?

A  B  C  D

Which shapes have 4 sides?

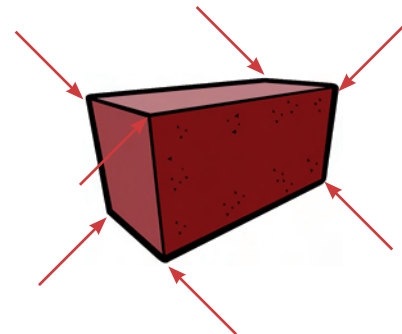
A  B  C  D

Section 3: Measurement and Geometry

**Student Exercise:**  
**Here are Solid Shapes**

A **vertex** is another word for a **corner**  
2 **corners** are 2 **vertices**

This rectangular prism  
has 8 **corners** or **vertices**



We can only see 7 vertices.  
Where do you think the 8th vertex is?  
Draw it on the picture.

A sphere has one face and no vertices (corners)



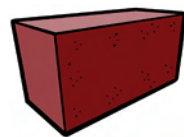
This pyramid has 5 faces and 5 vertices.  
This pyramid has a square base.



A cube has 6 faces and 8 vertices.


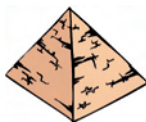

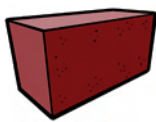


A rectangular prism has 6 faces and 8 vertices.



Section 3: Measurement and Geometry

**Fill in the boxes**

				
Name of the shape	<b>sphere</b>	<b>pyramid</b>	<b>cube</b>	<b>rectangle</b>
How many faces?	<b>1</b>	<b>5</b>	<b>6</b>	<b>6</b>
How many vertices?	<b>0</b>	<b>5</b>	<b>8</b>	<b>8</b>

**Circle your answer.**



Which shape has 5 faces?

- A  B  C  D

Which shapes have 5 vertices?

- A  B  C  D

Which shapes have 8 vertices?




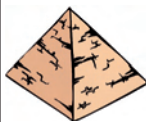


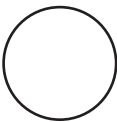
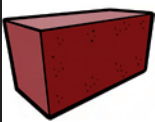
- A  B  C  D

Which shapes have 0 vertices?

- A  B  C  D

**Student Exercise:**  
**Solid and Plane Shapes**

Put a cross in the box to show which shape is a solid and which is a plane.

								
Solid	X			X	X			X
Plane		X	X			X	X	

Section 3: *Measurement and Geometry***Developmental Watch:**

Students may confuse squares with other rectangles.

**Teacher Tip**

- Handling shapes will increase a student's awareness to attributes.
- Use a fabric feely bag with a wooden shape inside as daily practice.

**In the Classroom:**

- Ask students to describe shapes and their properties.
- Display labelled shapes and refer to them regularly.

**In the Home:**

- Ask your child to identify objects around the house that are plane and solid shapes.
- Count the number of faces and vertices (corners) together.



## Math Program — Grade 2

### Section 3: *Measurement and Geometry*

### Aligning Learning With the Content Standards:

Students need to:

- Be able to identify congruent shapes.



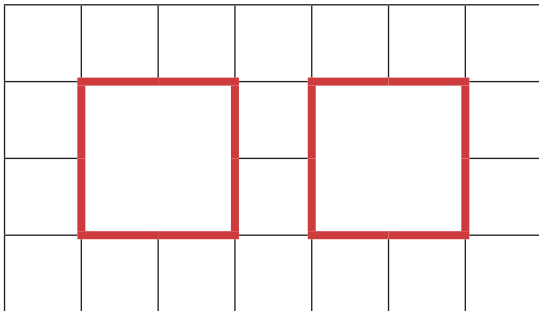
### Math Language:

Students should become increasingly confident in using such terms and phrases as:

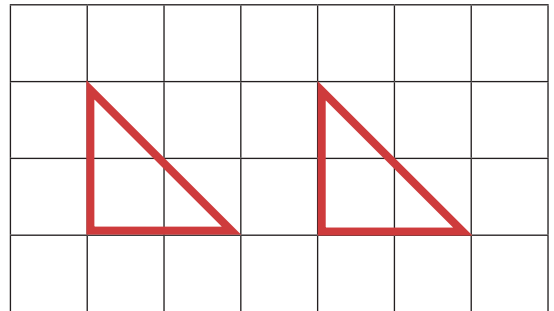
*Congruent, symmetry.*

### Student Exercise: Congruent Figures

**Congruent figures are the same shape and the same size.**

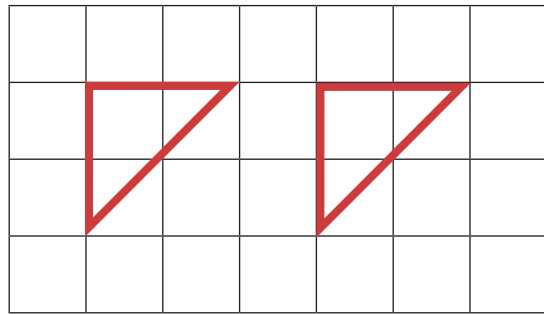


These squares are congruent because they are the same size and the same shape.



These triangles are congruent because they are the same size and the same shape.

Section 3: Measurement and Geometry

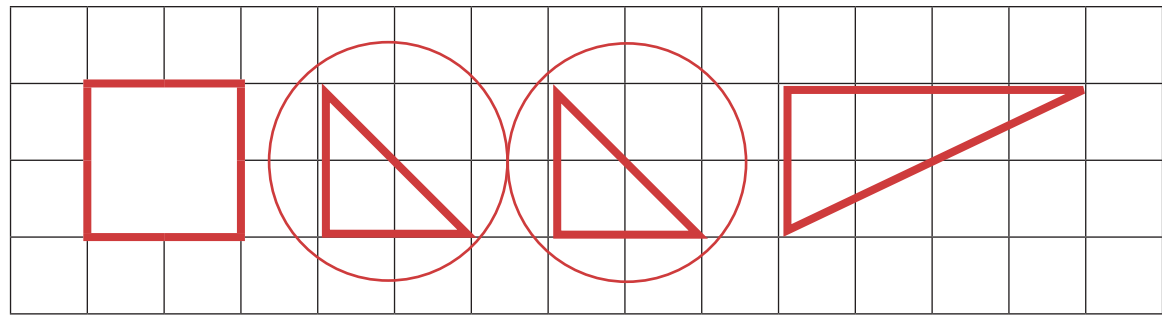


Are these triangles congruent?

Yes  No

Are they the same size and the same shape?

Yes  No



Circle the 2 congruent shapes

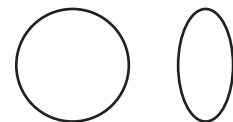
**Student Exercise: Activity 1**

Which of these diagrams are congruent. Answer Yes or No



Yes

No



Yes

No



Yes

No



Yes

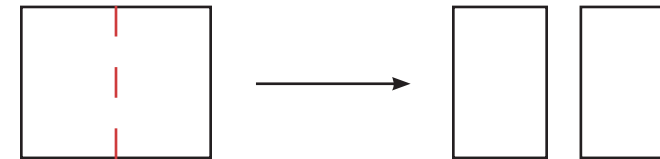
No

Section 3: Measurement and Geometry

**Student Exercise: Activity 2**

Draw these shapes on paper. Then cut them out. Fold the shape in half. Cut it along the fold.

Mix up the shapes and rearrange them to make new congruent shapes.

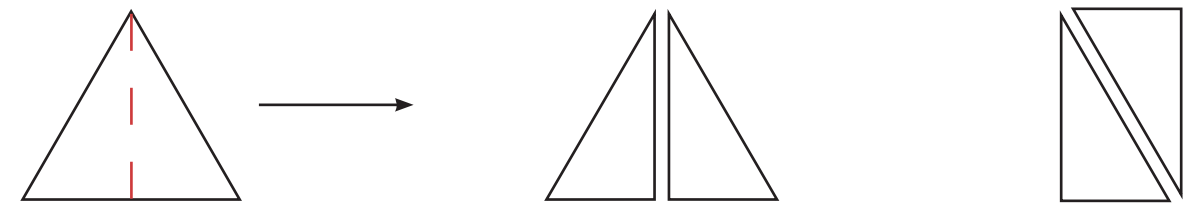


The shape has been cut along a line of SYMMETRY. The line of symmetry divides a shape into 2 congruent shapes.


They can be rearranged to form a shape like this.



**Student Exercise: Activity 3**



This is a line of SYMMETRY. A line of symmetry divides a shape into 2 congruent parts.

Section 3: *Measurement and Geometry***Teacher Tip** 

Students require lots of practical experience in identifying and drawing congruent shapes.

**Developmental Watch:**

- Students may not recognize congruent shapes if they are pointing in different directions.
- Students may not realize that symmetry lines can be horizontal or diagonal.
- They may not know where to draw the line of symmetry.

**In the Classroom:**

Use squared paper so that students can check easily that the squares they draw are the same shape and the same size.

**In the Home:**

Cut out shapes with your child and show that they match by stacking them on top of each other.

