## Y1 Properties of Shape: Make 2D Shape Patterns

## Aim:

Recognise and name common 2-D and 3-D shapes.
DfE Ready-to-Progress Criteria: Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another. (1G-1)
To introduce 2D shape patterns.

## Success Criteria:

I can identify the core of 2D shape patterns.
I can continue 2D shape patterns
I can complete 2D shape patterns.
I can create 2D shape patterns.

## Key/New Words:

2D shape, circle, triangle, square, rectangle, pattern, repeat, core, before, after, next, create, continue, complete, describe.

Resources:<br>Lesson Pack<br>2D shapes

## Preparation:

Differentiated Make 2D Shape Patterns Activity Sheets - one per child
Diving into Mastery Activity Cards - as required

Prior Learning: It will be helpful if children have experience sorting 2D shapes. The lesson Sort 2D Shapes has been prepared to support this learning.

## Learning Sequence

Remember It: The Lesson Presentation revisits previous learning by inviting the children to describe how
groups of 2D shapes have been sorted. Invite children to suggest different ways to sort a collection of 2D
shapes shown in different sizes and orientations.

| $\left({ }^{n}\right.$ | Make 2D Shape Patterns: Children complete differentiated Make 2D Shape Patterns Activity Sheets. They identify the core of patterns created with 2D shapes showing different sizes and orientations. Children continue patterns and complete patterns by drawing the missing shapes. They use 2D shapes to make patterns of their own. Can the children identify the core of 2D shape patterns? Can they continue, complete and create 2D shape patterns? <br> The core children have to find is made of two 2D shapes. They find the next shape in a sequence then continue two different patterns. Children complete two patterns by drawing the missing 2D shapes. They use 2D shapes to create their own pattern. Children will benefit from using 2D shapes to support their learning. <br> The core children have to find is made of three 2D shapes. They find the next shape and continue a pattern. Children complete two patterns by drawing the missing 2D shapes. They use 2D shapes to create their own pattern then they use the same shapes to make a new pattern. Children will benefit from using 2D shapes to support their learning. <br> The core children have to find is made of three 2D shapes. They continue a pattern then complete two patterns by drawing the missing 2D shapes. They use 2D shapes to create their own pattern then they use the same shapes to make two new patterns. Children will benefit from using 2D shapes to support their learning. |  |
| :---: | :---: | :---: |
| $0 \sim$ | Diving into Mastery: Schools using a mastery approach may prefer to use the following as an alternative activity. These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding. <br> Children find the core in a 2D shape pattern. They continue and complete patterns by drawing the missing 2D shapes. The children use 2D shapes to create their own pattern then use the same shapes to make a new pattern. Children will benefit from using 2D shapes to support their learning. <br> Children explore how many different patterns they can make with 2D shapes as they investigate if a statement is correct. They check and correct a pattern, then create a pattern with one error for a friend to find and correct. Children will benefit from using 2D shapes to support their learning. <br> Children are presented with a pattern based around a rectangle. They explore how many different cores they can find. The children investigate what would happen if a shape was removed from the pattern or if a shape was repeated. Children create their own patterns surrounding a shape and invite friends to investigate the core. Children will benefit from using 2D shapes to support their learning. | $\bigcirc$ |
|  | Check It: The Lesson Presentation invites children to check patterns. Ask the children to identify errors and explain what they could do to correct them. | 0 |

## Exploreit

Learnit: Children will find this visually exciting Knowledge Organiser a useful tool for learning 2D shape names and properties.
Continueit: Children use 2D shapes to make a repeating pattern and ask a friend to continue the pattern.
Solveit: Children make a pattern with 2D shapes and remove some shapes. They then ask a friend to complete the pattern by adding the missing shapes.

## Maths

## Properties of Shape

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



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

## M@Be 2D

## Shape P@Hterns



## Aim

- To introduce 2D shape patterns.


## SuccessCriteria

- I can identify the core of 2D shape patterns.
- I can continue 2D shape patterns.
- I can complete 2D shape patterns.
- I can create 2D shape patterns.

How have these 2Dshapes been sorted?


How would you sort these shapes into 2 groups?


What can you tell me about each group?


## What are patterns ?

Can you see the patterns on these classroom objects?


What can you tell me about them?
Can you see any patterns in your classroom?

What can you tell me about this pattern?


## What do you notice about this pattern?



What's the same about the shapes in this pattern?

> The shapes are all circles.


What's different?

## The circles are different sizes.

What's the same about the shapes in this pattern?

## The shapes are all triangles.



What's different?
The triangles are facing different directions.

## Say the name of each shape as it appears.

| square circle | square circle | square |
| :---: | :---: | :---: | :---: |

What would the next shape be?
Saying the pattern can help you work out what comes next .


Regent Studies | www.regentstudies.com

Say the name of each shape as it appears


What would the next 2 shapes be?

WWhiôth stheape iss tueffomet ther racanagke?


Whiocth shhapee iss afferr theerratangiter?

Take turns with a talk partner to give clues about a shape.
Use these words to help you.


The part of a pattern that repeats is called the core.


What can you tell me about the core of this pattern?

Can you find the core of this pattern?


What can you tell me about the core of this pattern?

Can you continue this pattern?


What strategies could help?

Say the pattern.


Find the core.

Which strategy worked for you?

## Can you continue this pattern?



Which strategy will you use?

## Complete the Pattern

Which shape is missing from the pattern?


What can you do to find out?

Say the pattern.

Find the core.

## Where do these shapes belong in the pattern?



How did you know where to place each shape?

Use these shapes to make a pattern on your whiteboard.


Compare your patterns.
What's the same about them?
What's different?


## Diving into Mastery

Dive in by completing your own activity!


## Are these patterns correct?



Can you spot the mistakes?
What would you do to correct them?
AOTAOTIOQ

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|  |  |  |  | Delivered By: |  |  | Support: |  |  |
| Success Criteria | Me | Friend | Teacher | T | PPA | S | I | AL | GP |
| I can identify the core of 2D shape patterns. |  |  |  | Notes/Evidence |  |  |  |  |  |
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| I can complete 2D shape patterns. |  |  |  |  |  |  |  |  |  |
| I can create 2D shape patterns. |  |  |  |  |  |  |  |  |  |
| Next Steps |  |  |  |  |  |  |  |  |  |


| T | Teacher | I | Independent |
| :--- | :--- | :--- | :--- |
| PPA | Planning, Preparation and Assessment | AL | Adult Led |
| S | Supply | GP | Guided Practice |


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## 2D Shape Patterns

To introduce 2D shape patterns.
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Continue the pattern.


Complete the pattern.


Complete the pattern.


Draw your own 2D shape pattern.

## 2D Shape Patterns

To introduce 2D shape patterns.

Draw a ring around the core.


Draw the next shape.




Continue the pattern.


Complete the pattern.


Complete the pattern.


Draw your own 2D shape pattern.

Use the same 2D shapes to make a new pattern.

## 2D Shape Patterns

To introduce 2D shape patterns.


Continue the pattern.


Complete the pattern.


Complete the pattern.


Draw a pattern with three 2D shapes.

Use the same 2D shapes to make a new pattern.

Can you use the same 2D shapes to make another pattern?

## Answers

## Children may draw around one or more examples of the core.



Draw the next shape.


Continue the pattern.


Continue the pattern.


Complete the pattern.


Complete the pattern.


Draw your own 2D shape pattern.

Children should draw 2D shapes pattern with a repeating core.

## Answers

Children may draw around one or more examples of the core.


Draw the next shape.


Continue the pattern.


Complete the pattern.


Draw your own 2D shape pattern.

Children should draw 2D shapes pattern with a repeating core.

Use the same 2D shapes to make a new pattern.
Children should draw a different 2D shapes pattern with a repeating core using the same shapes.

## Answers

Children may draw around one or more examples of the core.


Complete the pattern.


Draw a pattern with three 2D shapes.

Children should draw 2D shapes pattern with a repeating core.

Use the same 2D shapes to make a new pattern.
Children should draw a different 2D shapes pattern with a repeating core using the same shapes.

Can you use the same 2D shapes to make another pattern?
Children should draw a different 2D shapes pattern with a repeating core using the same shapes.

## Make 2D Shape Patterns

## Adult Guidance with Question Prompts

Children find the core in a 2D shape pattern. They continue and complete patterns by drawing the missing 2 D shapes. The children use 2D shapes to create their own pattern. They then use the same shapes to make a new pattern. Children will benefit from using 2D shapes to support their learning.

What can you tell me about the shapes in this pattern?
What is the same about the shapes? What's different?
What do we mean by the core of a pattern?
Can you find the core of this pattern?
Can you say this pattern?
What would come next?
How do you know?
Can you describe this pattern?
Which shape would you put in each space?
Can you explain why?
Which shapes can you see?
How will you arrange these shapes to make a pattern?
What if I made this pattern?


What would you change? Why?
Tell me about your pattern.
Can you use the same shapes to make a different pattern? Show me.

Make 2D Shape Patterns

## Draw a ring around the core.



Continue the pattern.


Complete the pattern.


Use these shapes to make a pattern.


Can you make a new pattern with the same shapes?

## Make 2D Shape Patterns

Adult Guidance with Question Prompts

Children explore how many different patterns they can make with 2D shapes as they investigate if a statement is correct. They check and correct a pattern and then create a pattern with one error for a friend to find and correct. Children will benefit from using 2D shapes to support their learning.
What is the challenge asking us to do?
Which shapes can you use?
Can you use the shapes more than once?
Do you have to use all of the shapes?

How many patterns does Kym think she can make with the
shapes? Why?
Do you agree with Kym? Why?
How will you begin? What will you do next?
What can you do to keep track of your ideas?
What did you discover?
Can you spot the mistake?
How would you correct it?
What can you do to check?

Can you use the same shapes to make a pattern?
Include one mistake.
Invite a friend to find the mistake and ask them what they would do to correct it.

Make 2D Shape Patterns
Use these shapes to make patterns.
Use each shape once in the core.


I can make 3 core patterns because there are 3 shapes.
Is this correct?
Can you prove it?

Kym made a pattern with the shapes.


Can you spot the mistake?
How would you correct it?

Make a pattern with the 2D shapes. Include 1 mistake.

Can a friend spot the mistake and correct it?

## Make 2D Shape Patterns

Adult Guidance with Question Prompts

Children explore how many different cores they can find in the pattern. They investigate what would happen if a shape was removed from the pattern or if a shape was repeated. Children create their own patterns and invite friends to investigate the core. Children will benefit from using 2D shapes to support their learning.

Can you find the core of this pattern?
What if the core started with the next shape?
How many possibilities can you find?
What if the pattern worked from right to left?

How would the core change if you took away the rectangles? What if you could repeat a shape?

Arrange a pattern around a shape.
Make sure the whole core repeats itself.
Ask a friend to identify the core and to find different possibilities.

Make 2D Shape Patterns
Can you find the core of this pattern?
How many possibilities can you find?


What if you took away the rectangles? What if a shape was repeated?

Use 2D shapes to make a pattern around a shape. Ask a friend to find the core.

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$\triangle$
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$\triangle$


Possible core arrangements:


Children may also repeat shapes, show different sizes and orientations.

Kym is not correct. Six core patterns can be created.


Kym got the last shape incorrect. It needs to be a rectangle not a circle.

| Cores from left to right: | Cores without the rectangle from left to right: | Example of a core with a shape that has been doubled from left to right: |
| :---: | :---: | :---: |
|  |  | $\begin{aligned} & \bigcirc \square \triangle \square \square \\ & \square \triangle \square \square O \end{aligned}$ |
|  | $\Delta \bigcirc$ $\square$ <br> $\bigcirc$ $\square$ $\Delta$ | $\begin{aligned} & \triangle \square \square \bigcirc \square \\ & \square \square \bigcirc \square \triangle \end{aligned}$ |
| From right to left: | From right to left: | From right to left: |
|  | $\begin{aligned} & \triangle \Delta \square \\ & \triangle \square O \end{aligned}$ |  |
|  | $\begin{aligned} & \triangle \square \bigcirc \\ & \square \bigcirc \triangle \end{aligned}$ | $\begin{aligned} & \triangle \square \bigcirc \square \square \\ & \square \bigcirc \square \square \triangle \end{aligned}$ |

Draw a ring around the core.


Continue the pattern.


Complete the pattern.


Use these shapes to make a pattern.


Can you make a new pattern with the same shapes?

Draw a ring around the core.
$\square \backsim \square \square \square \square \square \square$

Continue the pattern.


Use these shapes to make a pattern.


Can you make a new pattern with the same shapes?

## Make 2D Shape Patterns

Use these shapes to make patterns.
Use each shape once in the core.


Kym made a pattern with the shapes.

O

$\triangle$ $\square$


Can you spot the mistake?
How would you correct it?

Make a pattern with the 2 D shapes. Include 1 mistake.

Can a friend spot the mistake and correct it?

## Make 2D Shape Patterns

Use these shapes to make patterns.
Use each shape once in the core.


Kym made a pattern with the shapes.


Can you spot the mistake?
How would you correct it?

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## Make 2D Shape Patterns

Can you find the core of this pattern? How many possibilities can you find?


What if you took away the rectangles? What if a shape was repeated?

Use 2D shapes to make a pattern around a shape. Ask a friend to find the core.

## Make 2D Shape Patterns

Can you find the core of this pattern?
How many possibilities can you find?


What if you took away the rectangles? What if a shape was repeated?

Use 2D shapes to make a pattern around a shape. Ask a friend to find the core.

Properties of Shape | Make 2D Shape Patterns

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