



# HOW TO USE THE PACK

Llygaid Mathemateg encourages both learners and educators to look for mathematics in the world around us. Using our 'Llygaid Mathemateg' helps people to see the fun in maths and encourages mathematical discussions - mathematics becomes real and meaningful.

1. Look at the photograph and ask general questions about it.
2. Put on your Llygaid Mathemateg to see what maths you can see.
3. Use the question prompts provided or ask your own questions.

Using Llygaid Mathemateg can deepen conceptual understanding, develop mathematical vocabulary and encourage making links between concepts.

There are 3 question prompts available for each photograph aligned to the Curriculum for Wales progression steps.

- P1** questions are suitable for learners working within progression step 1, broadly up to 5 years of age.
- P2** questions are suitable for learners working within progression step 2, broadly up to 8 years of age.
- P3** questions are suitable for learners working within progression step 3, broadly up to 11 years of age.

Check out Llygaid Mathemateg top tips and teaching ideas. to ensure impact.

[www.cullyeducation.co.uk/  
llygaidmathemategconcept](http://www.cullyeducation.co.uk/llygaidmathemategconcept)

For free Llygaid Mathemateg photos and questions visit [www.cullyeducation.co.uk/  
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Did You Know?  
Llygaid Mathemateg  
is Welsh for  
Maths Eyes.









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PI

What can you see?  
What do you notice?  
What do you like about this photograph?  
Is there anything that you don't like?

## Geometry

Can you find a square that is larger than the white circles?  
Can you find a square that is smaller than the white circles?  
Do you think the windows are cold, warm or hot?  
Describe where the candles are.  
What shapes can you see?  
What is the smallest shape that you see?  
What is the largest shape that you can see?  
Can you see any symmetrical shapes?  
Can you describe how the red squares and small blue squares fit together?

## Take it Deeper

Create your own stained glass window using squares, rectangles and circles.  
Can you create a repeating pattern?



## Number

How many candles can you see?  
How many windows do you think there are? Explain your reasoning.  
What is the first thing that you notice about the photograph?  
If there was one more/less window, how many would there be?

## Algebra

Can you see any recurring shape patterns?  
Describe how you would continue the pattern.

## Statistics

Can you sort the shapes on the window by one or more than one criterion?  
Use marks, pictures or numbers to record how many whole circles you can see on one window.





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P2

Geometry

What do we call these kinds of windows?  
Where might you see them?  
Have you ever been in a building that has them?  
What was it like?



Number

How many whole white circles can you see?  
Estimate how many small blue squares you can see on the window.  
What is your answer to the nearest 10?

Algebra

Can you see any recurring shape patterns?  
Describe how you would continue the pattern.

Statistics

Which is the most/least common shape?  
Record this in a table or graph.

Take it Deeper

How many candles tall do you think the window is? How many wide?  
What unit would you use to measure the window? How tall do you think they are? How wide?  
How many different-sized triangles can you see? What types of triangle are they?  
Can you see any irregular shapes? Can you name them?  
Can you find any reflective symmetry?  
Can you show me a line of symmetry on a circle? Square? Rectangle? Triangle?  
How many right angles can you find?  
Choose one of the white circles. Use mathematical language to describe where it is.  
How many shapes with different numbers of sides can you find? Are they regular or irregular?  
What properties of shapes can you show me? Can you show me...  
Choose an angle. Is it more or less than a right angle?  
Can you show me any parallel lines? Perpendicular lines?

Create a Venn or Carroll diagram. Place some of the shapes from the windows into the correct parts of the diagram.  
Can your partner work out how to label the diagram? Can they correctly place the rest of the shapes?





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P3

## Geometry

What do you think these are?  
Where might you see something like this?  
Can you find out why the coloured glass is used?



What unit would you use to measure the window? How tall do you think they are? How wide?

Record your estimates in 3 different ways.

How many different-sized triangles can you see? What types of triangle are they? Can you classify them using your own criteria?

Can you show me any congruent shapes? Justify whether two or more shapes are congruent.

Can you show me all the lines of symmetry on a square? Rectangle? Triangle?

Can you find an acute, obtuse and reflex angle? How many of each angle can you find?

Find a triangle on the window. Can you estimate the size of each angle in degrees?

Sketch each of the quadrilaterals that you can see in the photograph.

Can you show me the perimeter of a triangle? Square? Rectangle?

Can you show me the circumference of a circle?

Can you show me any parallel lines? Perpendicular lines?

What properties of shapes can you show me? Can you show me...

## Take it Deeper

Explore tessellating some of the shapes in the window.

Using a ratio of 1:3 red rectangles to small blue squares, create your own stained glass window pattern.

If you could cut out the squares in the window, could you create the net of a cube?

## Number

What fraction of the white shapes in the middle window are whole circles and what fraction are semicircles? What is this as a decimal?

What is the ratio of white circles to small blue squares?

## Algebra

Work out how many triangles, squares, rectangles, and quadrilaterals there are. Record the amount of each shape using  $< = >$  to show relationships between the numbers.

## Statistics

If a stone hit the window, what is the likelihood of it hitting a circle, or a triangle, or a quadrilateral?