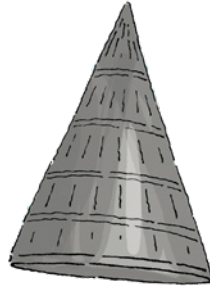


# I Spy Awesome Buildings

Teacher's Guide



Jennifer Dwyer

## Line Masters

This Teacher's Guide includes access to modifiable and PDF line masters.

To access these Mathology Little Book Line Masters, please log in at Pearson Places, [www.pearsonplaces.com.au](http://www.pearsonplaces.com.au) and select the Mathology Little Books icon. The Line Masters can be found in the 'Explore Resources' section.

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# Mathology Little Books

This series recognizes that children’s understanding of maths concepts develops over time, and so the series allows you to choose the book that best matches a child’s or group’s level of mathematical understanding. The books engage children at just the right level in a wide range of mathematical ideas, thinking, and activities in a variety of real world and imaginary contexts.

*I Spy Awesome Buildings* engages children in conversations, investigations, and activities that help to develop their understanding of the big maths idea that “Shapes and solids can be explored and compared based on attributes.”

## Big Idea: Shapes and solids can be explored and compared based on attributes (2-D shapes and 3-D solids)

TITLE	KEY MATHS FOCUS	MATHS SKILLS	STRATEGIES	ADDITIONAL FOCUS
	Explore, describe, and compare shapes and solids  Create and describe 3-D structures	Recognise and describe shapes and solids using geometric attributes Make connections between shapes and solids and objects in the environment Follow directions to create structures	Describe and sort solids based on how they move Use understanding of attributes of solids when building Apply prior knowledge and experience when building and rebuilding	Count and compare quantity Compare measures Use positional language to describe location
	Find and describe shapes and solids  Explore and classify shapes and solids	Recognize 2-D shapes embedded in other images or objects and in the environment Analyse geometric attributes of 2-D shapes and 3-D solids	Classify and name 2-D shapes and 3-D solids based on attributes	Compare size and length
	Compare quantities to 100  Estimate and count to 100	Estimate and count in different ways Determine how many more/less	Use benchmarks to estimate Skip Count Doubles Use equal groupings	Compare height Explore increasing/decreasing patterns
	Identify, describe and compare 2-D shapes and 3-D solids  Compose and decompose 2-D shapes and 3-D solids	Classify, name construct and compare 2-D shapes and 3-D solids Compose 2-D shapes by combining or partitioning 2-D shapes Construct 3-D solids from nets	Use geometric properties to classify and compare 2-D shapes and 3-D solids	Estimate measurements Explore perimeter Collecting data

Today, Peggy is meeting her grandpa at his workshop. They will finish up a project that they have been working on.

“Hi, Peggy! I’m glad you’re here,” says Pa. “Look what I’ve just found.”

Pa hands Peggy a photo album.

“You found the photo album!” says Peggy. “I was afraid it had been thrown out.” Peggy sits beside her grandpa and opens the album.



## Finding and classifying 2-D shapes in 3-D objects

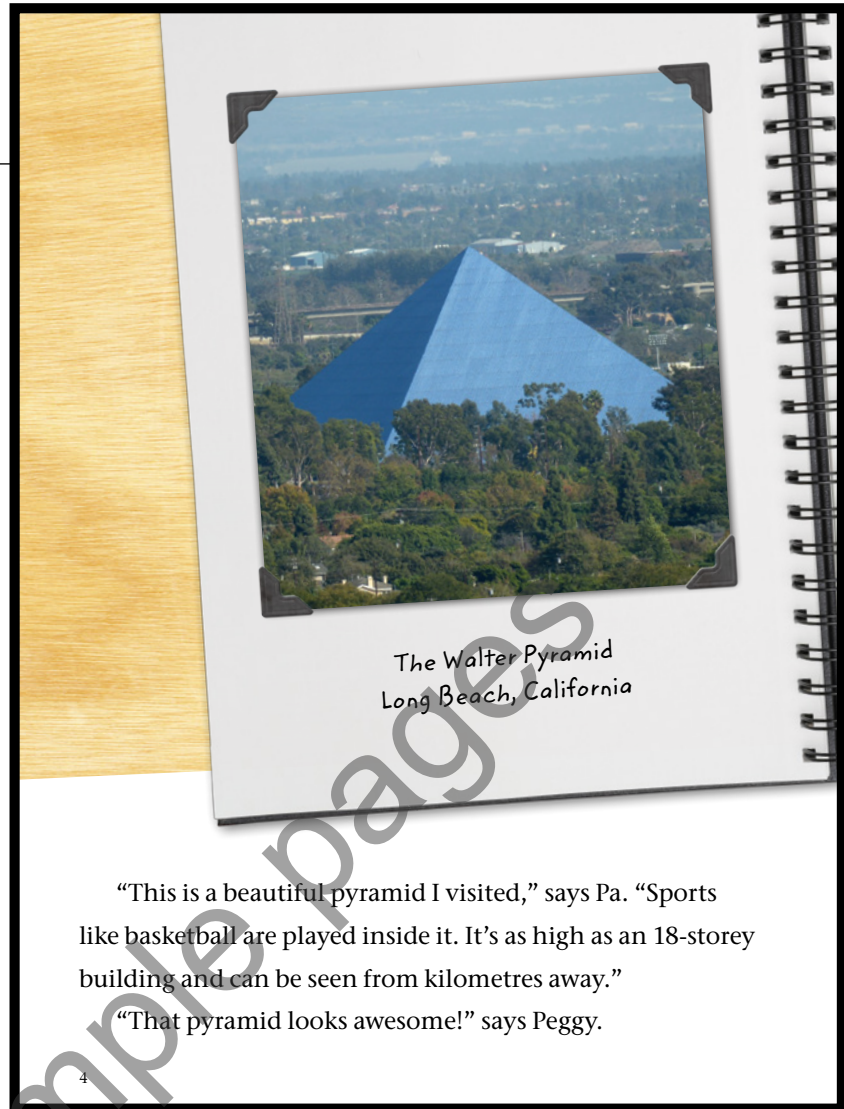
- What 2-D shapes can you find on Pa’s workbench? (e.g., rectangle on the cover of the album) How do you know it’s a (rectangle)? (e.g., it has 4 sides and opposite sides are the same length)
- What maths words can you use to describe the (pencil holder, mallet head)? (e.g., the top and bottom of the pencil holder are hexagons; the mallet head is a cylinder)

### WATCH FOR...

- What terms do children use to name and/or describe attributes of 2-D shapes and 3-D solids? Children often will not use mathematical language, using words such as *crooked* or *wavy* instead. This is perfectly acceptable at this stage. As they progress in their understanding, children will use mathematical terms and focus on the properties of shapes and solids more often. Encourage this by consistently modelling mathematical language.

## Finding and classifying 2-D shapes in 3-D objects

- What shape are the faces of the Walter Pyramid? (*triangles*)  
How do you know? (*they all have 3 sides and 3 vertices*)
- What do you know about the attributes of pyramids? (*e.g., the faces are triangles that meet at the apex*)
- How many faces do you think the Walter Pyramid has? Explain. (*accept any answer the child can justify*)



### CONNECTING TO MEASUREMENT

Comparing Units: Share with children that the height of 1 storey of a building is usually about 3 metres. Ask: **How many metres are in 1 kilometre? (1000) Do you think 18 storeys would be more than or less than 1 kilometre? (much less than; 18 storeys would be about 54 metres)**

# Large Group Options

If you read *I Spy Awesome Buildings* to a large group or whole class, you might project the book to facilitate reading aloud and better engage children in classifying and naming 2-D shapes and 3-D objects. These activities engage children in exploring and communicating their understanding of the attributes and properties of 2-D shapes and 3-D solids, and in constructing 2-D shapes; choose the activities that best address your children's learning needs.

## DESCRIBE A SHAPE

### ENGAGE

Before class, copy and cut out 2-D Shape Cards (LM 4). To begin, draw attention to page 3 of *I Spy Awesome Buildings* and ask:

- **What 2-D shapes can you find in the objects on the workbench?** (e.g., a rectangle on the tissue box, a circle on the end of the mallet)

As children answer, invite them to come to the front and hold up the appropriate card. Record responses on a chart, adding and labelling a column each time a new shape is named (i.e., Triangle, Circle, Square, and Rectangle). If children name other 2-D shapes, such as hexagons or octagons, add them to a column entitled "Other." If children remain interested, continue by asking them to find 2-D shapes in the classroom.

### WORK ON IT

Provide rulers, pencils, and paper. You might also provide Grid Paper (LM 5) or geoboards and elastics. Draw a shape card at random and ask:

- **Can you create a (triangle) that is different from this one? What attributes can you change and still make a (triangle)?** (e.g., the size) **What attributes must you keep the same?** (the number of sides)

Invite children to create a (triangle). When shapes are completed, ask:

- **How can you describe your (triangle) using words and numbers?**
- **How is your (triangle) different from the (triangle) on the card? How is it the same?**

Children who use geoboards can use Dot Paper (LM 6) for recording. Invite children to choose another shape card and repeat.

### SHARE AND REFLECT

Post drawings. Encourage discussion of similarities and differences both within and among the shapes. Ask:

- **What attributes are the same in all the (rectangles)? In the (triangles)?**
- **What differences do you notice between a (rectangle) and a (triangle)? Does anyone have any other ideas?**

**MATHS FOCUS:** construct and compare 2-D shapes; describe and compare 2-D shapes; identify 2-D shapes as part of 3-D objects; classify and name 2-D shapes based on shared attributes

**MATERIALS:** *I Spy Awesome Buildings*, p. 3; 2-D Shape Cards (LM 4) copied onto cardstock; rulers; pencils; paper; Grid Paper (LM 5—optional); geoboards and elastics (optional); Dot Paper (LM 6—optional)

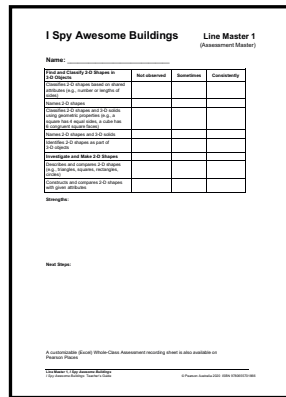
### WATCH FOR...

- Does the child draw different examples of a 2-D shape by changing attributes of its geometry (e.g., lengths of sides), or does he/she change more familiar attributes only (e.g., colour)?
- Does the child notice changes in angles among different examples of triangles? Although they are not expected to discuss angles, some may offer descriptions of this attribute using terms such as *pointier corners*.

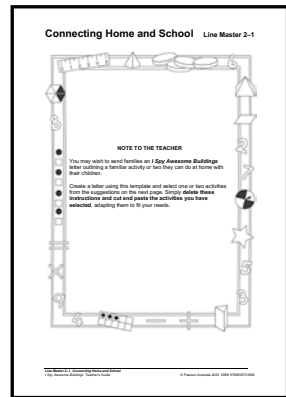
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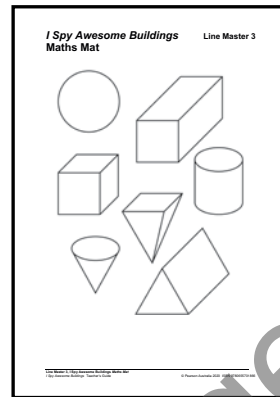
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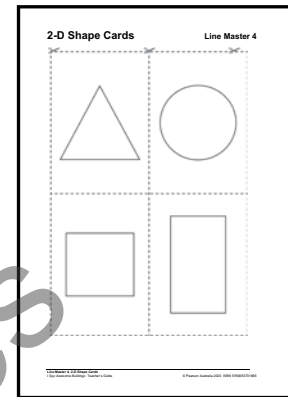
**Line Master 1**  
Assessment Master



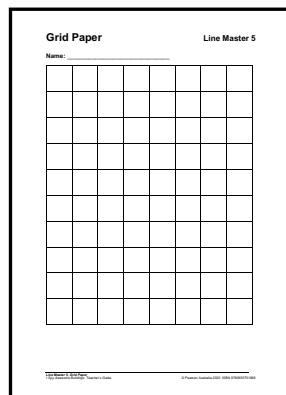
**Line Master 2**  
Connecting Home and School  
Letter Template



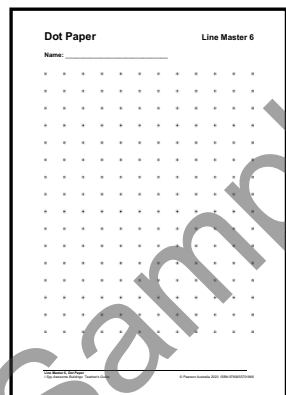
**Line Master 3**  
I Spy Awesome Buildings  
Maths Mat



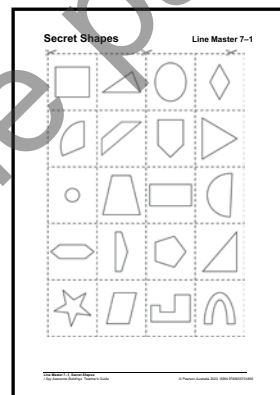
**Line Master 4**  
2-D Shape Cards



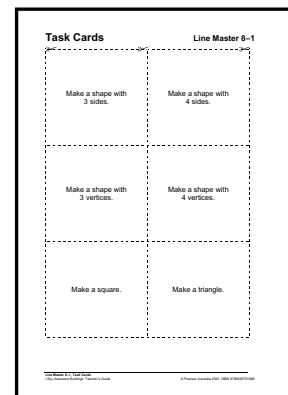
**Line Master 5**  
Grid Paper



**Line Master 6**  
Dot Paper



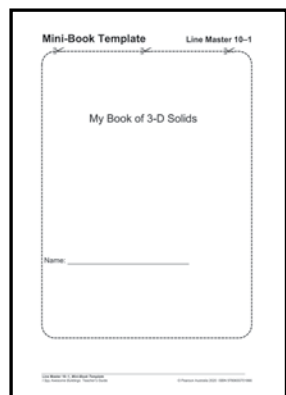
**Line Master 7**  
Secret Shapes



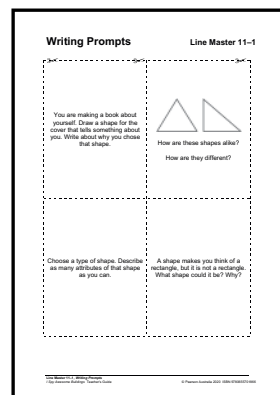
**Line Master 8**  
Task Cards



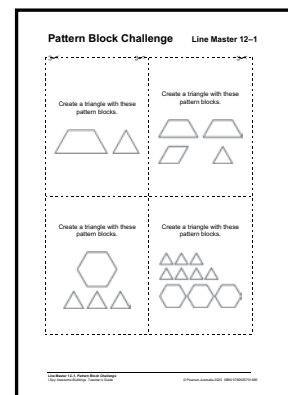
**Line Master 9**  
Solids Spinner



**Line Master 10**  
Mini-Book Template



**Line Master 11**  
Writing Prompts



**Line Master 12**  
Pattern Block Challenge