

Zoom In, Zoom Out

Teacher's Guide



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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 and select the Mathology Little Books icon. The Line Masters can be found in the 'Explore Resources' section.

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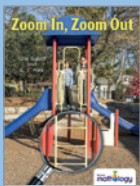



Mathology Little Books

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.

Zoom In, Zoom Out 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: Many things in our world have attributes that can be measured and compared

(Compare length, mass, volume and capacity)

TITLE	KEY MATHS FOCUS	MATHS SKILLS	STRATEGIES	ADDITIONAL FOCUS
	Identify shapes Locate objects	Describe, name and create 2-D shapes Sort and re-sort 2-D shapes Relate 2-D shapes to 3-D objects Describe location of objects using positional language Follow and give directions Locate and describe location on a grid		Comparing quantities Comparing height
	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
	Investigate and make 2-D shapes Find and classify 2-D shapes in 3-D objects	Name 2-D shapes and 3-D solids Classifies 2-D shapes and 3-D solids using geometric properties Identify 2-D shapes as part of 3-D objects Describe, construct and compare 2-D shapes with given attributes	Classify 2-D shapes based on shared attributes	Compare height Explore increasing/decreasing patterns

* This book can also be used to address the big idea that “Objects can be located in space and looked at from different perspectives.”

Step up close.

Come even closer!



We zoom in here.



We zoom in there.

You see these on sidewalks everywhere.
What are we looking at?

3

Identifying shapes

- What do you think the large black circle is? (*a wheel*) Let's count the circles we can find on this wheel. How many are there? (Children will likely identify 3 or 4, and if you project the image, they can trace them.)
- What other shapes do you see when the kids zoom in? (*e.g., a triangle*) What do you think they are looking at?
- Suppose you were to zoom in on something in our classroom. Where might you find a (circle)?

WATCH FOR...

- Note the language children use. Are they ready to integrate terms such as *right* and *left* into their descriptions? When appropriate, scaffold terms onto their natural language.
- When asked to think of other objects with similar shapes, do children make the connection between the 2-D shape and 3-D objects?

Locating objects

- What view of the recycling bin are children looking at when they zoom out? (*side view*) If they zoomed down from a tree, what view would that be? (*top view or a bird's-eye view*)
- Is the boy standing on the left or the right side of the recycling bin? (*on the left side*) Where is the girl standing? (*on the right side*)



Large Group Options

If you read *Zoom In, Zoom Out* to a large group or whole class, you might project the book to facilitate reading aloud and better engage children in predicting what they will see as pages turn. These activities engage children in exploring, describing, and manipulating 2-D shapes and 3-D objects, as well as offering opportunity to use positional and directional language to describe location and movement. Choose the activities that best address your children's developing geometric and spatial thinking.

LET'S ZOOM IN!

ENGAGE

Together, create a list of the different objects the children observed on their walk in *Zoom In, Zoom Out*. Ask:

- **When was it easy to know what the children were looking at? When was it hard to know?**
- **When did they see a circle? A square (rectangle, triangle)?**
- **Suppose we were to go on a walk. Where might we observe (circles)? What different shapes do you think we might find?**

Explain that the group will be going on a walk to “zoom in” on different objects. Distribute magnifying glasses or paper towel rolls (single ones looking like a telescope and 2 adjoined like binoculars). Have children practise using them as a way to focus their observations.

WORK ON IT

Decide on a route for an indoor or outdoor walk. Plan the route, sketching it on the board. Take a camera (or more than one so children can use them as well) to photograph objects.

- **Let's find objects on our walk that we want to zoom in on. We'll take photographs and later use them to make our own *Zoom In, Zoom Out* book.**

Children use their viewers to focus on shapes in different objects. With their input, photograph more than one zoomed-in view for each object, in order to document a variety of shapes.

SHARE AND REFLECT

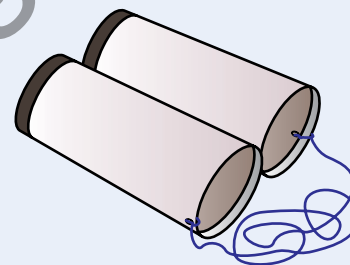
Back in class, project the photographs from your walk. Work together to select ones to print for a class *Zoom In, Zoom Out* book.

- **We need at least 2 different views for the (bike). Which photographs should we choose? What if we want to choose a circle? A triangle?**
- **How should we order the pages for our book? What should we start with? End with?**

Together, decide on appropriate text and other features describing the shapes. When complete, the book can circulate to children's homes.

MATHS FOCUS: identify and describe 2-D shapes; make 2-D representations of 3-D objects

MATERIALS: *Zoom In, Zoom Out*; magnifying glasses or paper towel rolls (or other viewer); camera(s)



WATCH FOR...

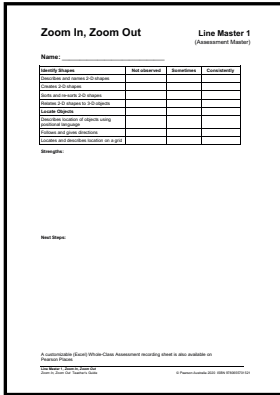
- Listen to the language children use to describe the shapes they find. Introduce new vocabulary to their natural language.
- Do children see and describe how shapes are similar and different?
- Do children find and describe different shapes as they view objects from different perspectives?

DIFFERENTIATE: On the walk, some children will benefit from tracing shapes in the air, as well as tracing directly on the object when possible. In class, offer magazines to interested children, and have them zoom in on images and trace shapes they find in them.

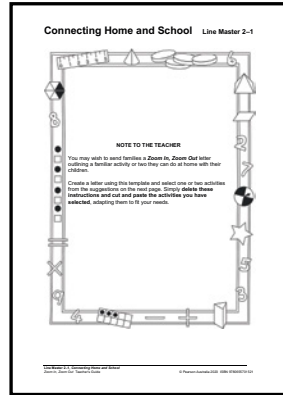
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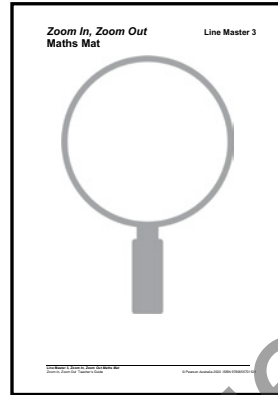
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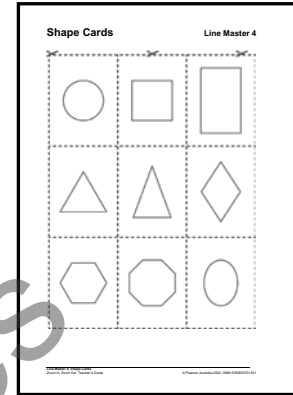
Line Master 1
Assessment Master



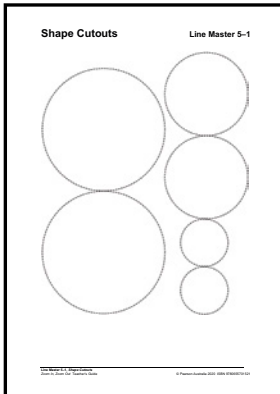
Line Master 2
Connecting Home and School
Letter Template



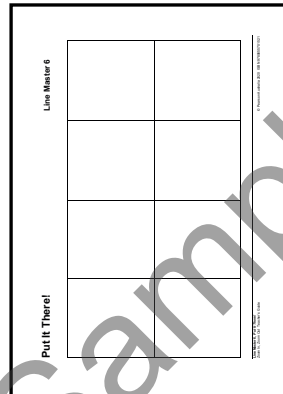
Line Master 3
Zoom In, Zoom Out Maths Mat



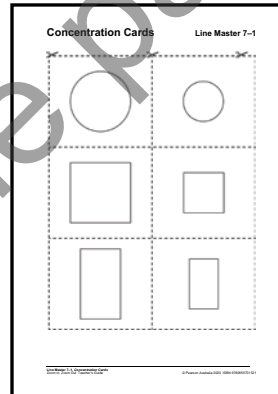
Line Master 4
Shape Cards



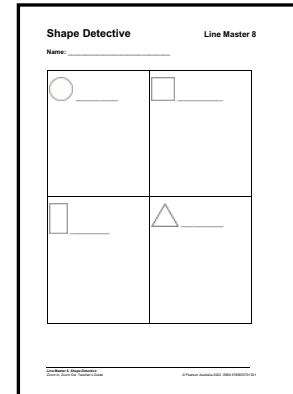
Line Master 5
Shape Cutouts



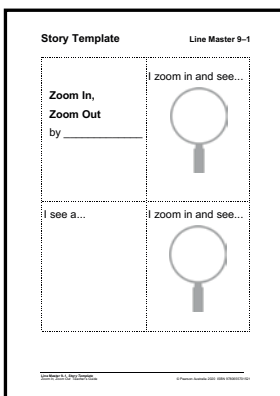
Line Master 6
Put It There!



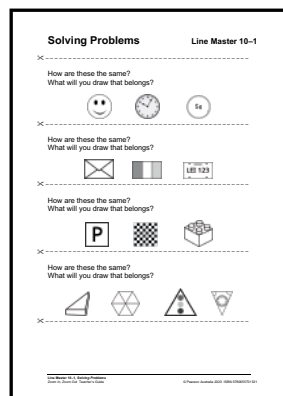
Line Master 7
Concentration Cards



Line Master 8
Shape Detective



Line Master 9
Story Template



Line Master 10
Solving Problems