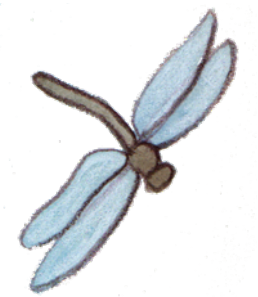
Marsh Watch

Teacher's Guide



Carly Bardikoff

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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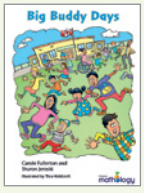
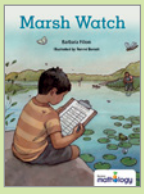
Pearson

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.

Marsh Watch engages children in conversations, investigations, and activities that help to develop their understanding of the big maths idea that "Collecting and displaying data can help us predict and interpret situations."

Big Idea: Collecting and displaying data can help us predict and interpret situations
(Data and Graphing)

TITLE	KEY MATHS FOCUS	MATHS SKILLS	STRATEGIES	ADDITIONAL FOCUS
	Collect and interpret data Sort a collection	Display data on a graph Interpret graphs Identify similarities and differences Sort and re-sort a collection	Pose a question to initiate data collection Predict based on displayed data Identify a sorting rule	Comparing quantities to 20 Use positional language to describe location
	Interpret concrete graphs and picture graphs Build concrete graphs and picture graphs	Collect and organize concrete data Use collected and displayed data to answer questions Use real objects and pictures to make graphs Read and interpret simple graphs Compare sets of objects to determine more/less	Compare perceptually Match and count	Construct number sentences to 20 Simple equations
	Build pictographs Interpret pictographs	Collect data by determining categories in advance Create simple pictographs Read and interpret information from data displays	Choose an appropriate method to collect and organize data	Estimate how many in a group (to 100) Make groups Make 2-D shapes with a given number of vertices
	Collect, organize and display data in graphs Read and ask questions about graphs	Collect data by determining categories Conduct a survey Construct and label pictographs and bar graphs Display data collected in more than one way and describe the differences Interpret displays Pose and answer questions about data collected and displayed	Choose a method to record collected data Use tally marks Formulate questions that can be addressed through observation	Identify 2-D shapes using geometrical attributes Create addition and subtraction story problems Make doubles

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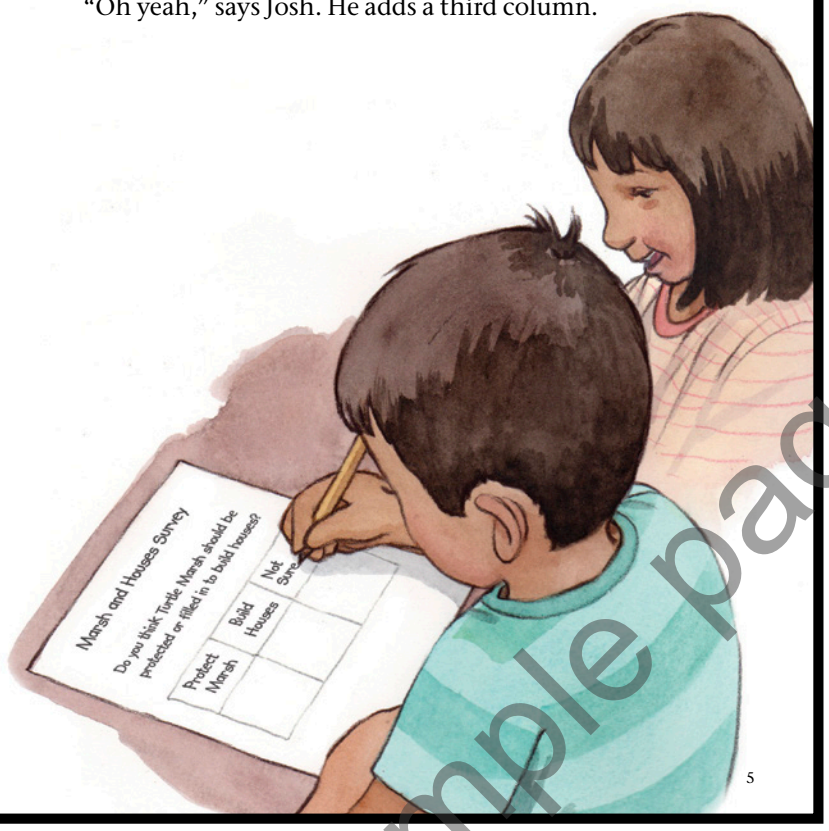
Josh writes some sample questions. With Mom's help, he decides on one. He draws a chart to record a tally of people who want to protect the marsh and a tally of people who think houses should be built there.

"What about people who aren't sure yet?" asks Mom.

"Oh yeah," says Josh. He adds a third column.



Reading graphs

Read the question and responses on Josh's survey sheet. Ask:

Do you think Josh's question is clear? Do you think his choices are clear? Would you make any changes? Why? *(accept any answers children can justify)*

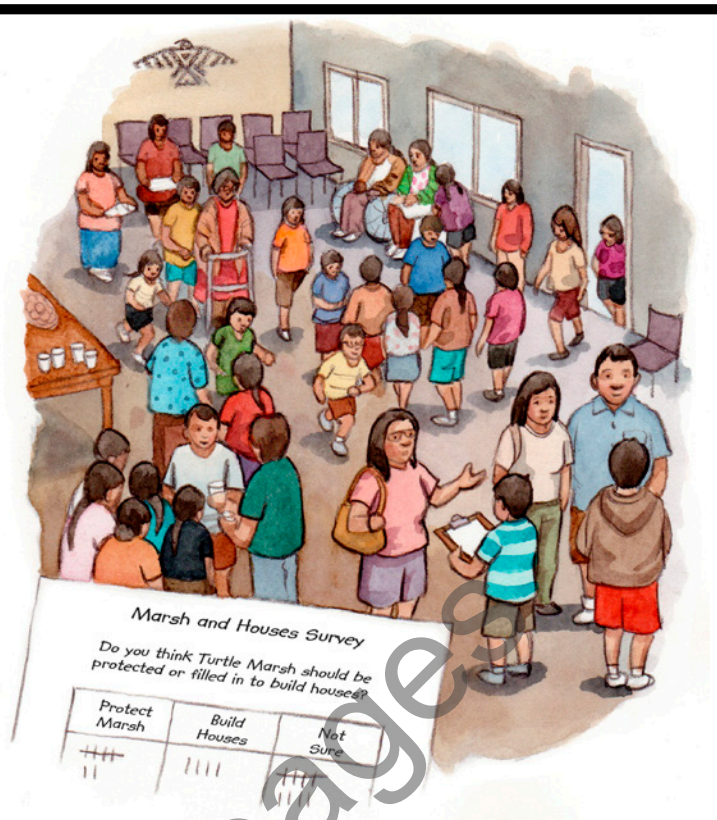
- How is Josh going to record responses on his chart? *(using tally marks)* How do tally marks help you read information? *(e.g., tally marks group items by 5, so skip-counting by 5 gives the total quickly)*

WATCH FOR...

- Does the child recognize that tally marks group items by 5 and facilitate skip-counting?
- Does the child recognize the importance of clear survey questions and responses?

Reading graphs

- Look at the results of Josh's survey. How many people wanted to protect the marsh? *(7)* How many wanted to build houses? *(4)* How many were not sure? *(9)*
- Were you surprised by Josh's data? Why or why not? *(accept any answers children can justify)*
- Do you think Josh has enough information to make a recommendation to his community? *(accept any answers children can justify)* Does he need to ask more questions?



That night is storytelling night at the community centre. Josh talks to people about his survey. He asks Aunty Nitu about it. She says, "We want to keep Turtle Marsh, but we also need more houses. Why can't we have both?"

Josh sees that he needs to think more about the problem.

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Large Group Options

If you read ***Marsh Watch*** to a large group or whole class, you might project the book to facilitate reading aloud and better engage children in collecting and interpreting data. These activities engage children in exploring and communicating their understanding of organizing and analyzing graphs; choose the activities that best address your children's learning needs.

FAVOURITE ANIMAL

ENGAGE

Draw attention to pages 4–5 of ***Marsh Watch*** and say:

- **Josh decided to create a survey to find out what his neighbours want to do with the marsh. What do you know about surveys? How can they help you collect information? What did you learn about the community and the marsh from Josh's survey?**

Encourage children to share their ideas with an elbow partner before discussing as a whole class. Record their responses. Explain that they will design and conduct their own surveys:

- **Surveys help us learn more about the people around us. We are going to figure out which animal our class likes the best.**

WORK ON IT

Provide each child with Animal Survey (LM 4) and review how to use tally marks. Invite children to come up with their own list of animals to write in, and give them time to survey their classmates. When they are finished, regroup and draw attention to pages 8–9. Say:

- **Josh's sister Miigwan helped him turn his data into a pictograph. Did this help him organize his information? What is something important to remember when making a pictograph? How do you represent each person's choice?**

Invite children to share their ideas, and introduce or review how to make a pictograph using the vertical and/or horizontal templates from Pictograph Templates (LM 5). Provide children with the appropriate template if they require support deciding where to place their icons. After discussing the steps as a class, encourage each child to use the survey data to create her/his own pictograph, complete with icons, titles, and labels.

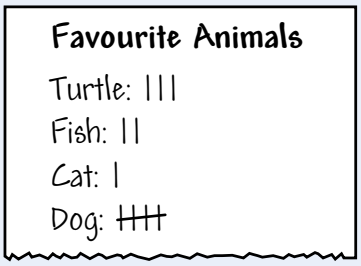
SHARE AND REFLECT

Meet and prompt reflection by asking questions such as:

- **How did you organize the data from your tally marks into a graph? Was this helpful? Why?**
- **Which animal did the people you surveyed like the best? How do you know?**
- **What other types of graphs could you use to show what animals people liked the best? Is there a type of graph that you prefer? Why?**

MATHS FOCUS: conduct a survey; use tally marks to record collected data; construct and label pictographs; collect data by determining (most) categories in advance

MATERIALS: ***Marsh Watch,*** pp. 4–5, pp. 8–9; Animal Survey (LM 4); Pictograph Templates (LM 5)



WATCH FOR...

- Does the child organize the survey data?
- Is the child able to explain and conduct a survey independently?
- Is the child able to use survey data to create a pictograph on her/his own?
- Does the child label pictographs appropriately?

DIFFERENTIATE: Some children might benefit from completing the activity over an extended period of time, splitting the survey and pictograph into different activities.

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Marsh Watch

Line Master 1
(Assessment Master)

Name: _____

Collect, Organize, and Display Data	Not observed	Sometimes	Consistently
Collects data by determining (most) categories in advance			
Conducts a survey			
Chooses a method to record collected data (e.g., tally marks)			
Constructs and labels pictographs and bar graphs			
Displays data collected in more than one way and describes the differences			
Read and Ask Questions About Graphs			
Formulates questions that can be addressed through observation			
Interprets displays by noting how many more/less than other categories			
Poses and answers questions about data collected and displayed			

Strengths:

Next Steps:

A customizable (Excel) Whole-Class Assessment recording sheet is also available on Pearson Places

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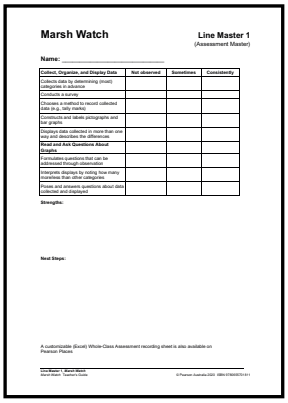
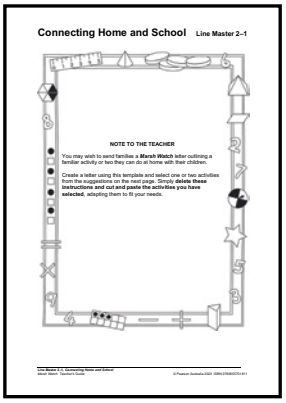
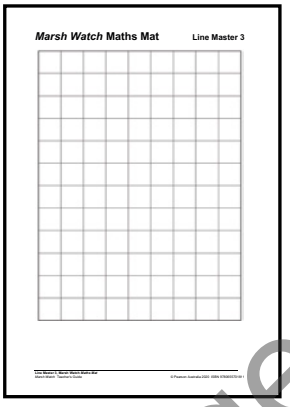


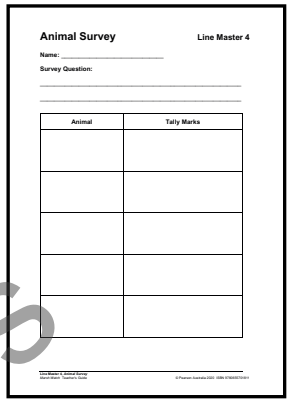
Line Master 1
Assessment Master



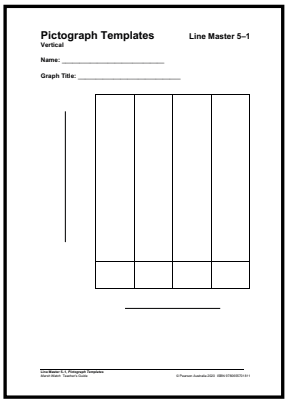
Line Master 2
Connecting Home and School Letter Template



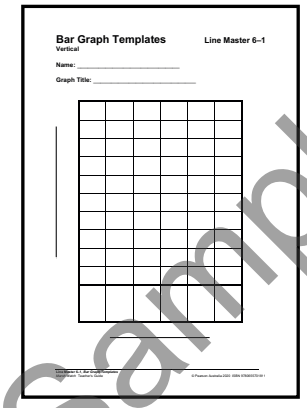
Line Master 3
Marsh Watch Maths Mat



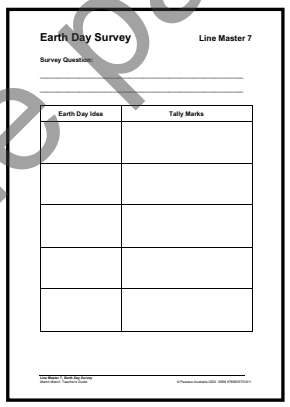
Line Master 4
Animal Survey



Line Master 5
Pictograph Templates

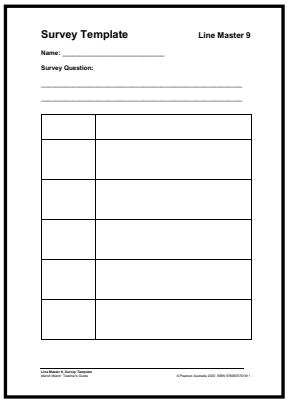


Line Master 6
Bar Graph Templates

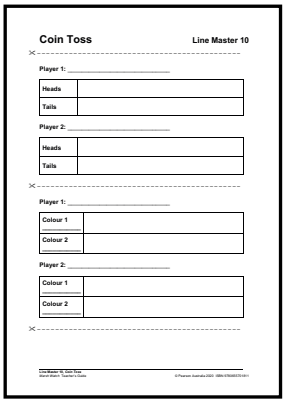


Line Master 7
Earth Day Survey

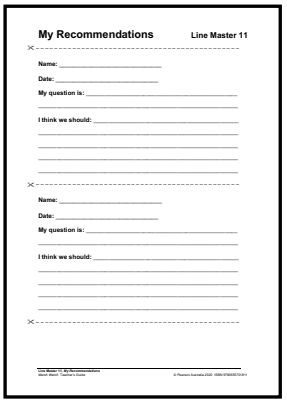
Line Master 8
Earth Day Recommendations



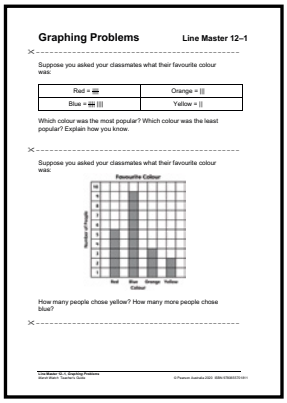
Line Master 9
Survey Template



Line Master 10
Coin Toss



Line Master 11
My Recommendations



Line Master 12
Graphing Problems