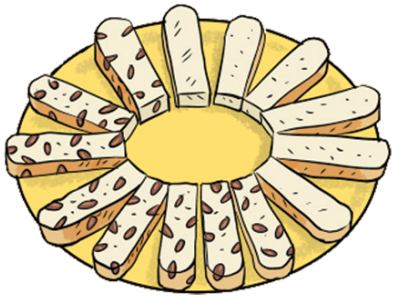
Gran's Damper

Teacher's Guide



Carly Bardikoff

Line Masters

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

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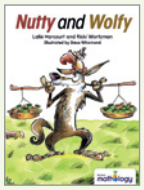
Mathology Little Books

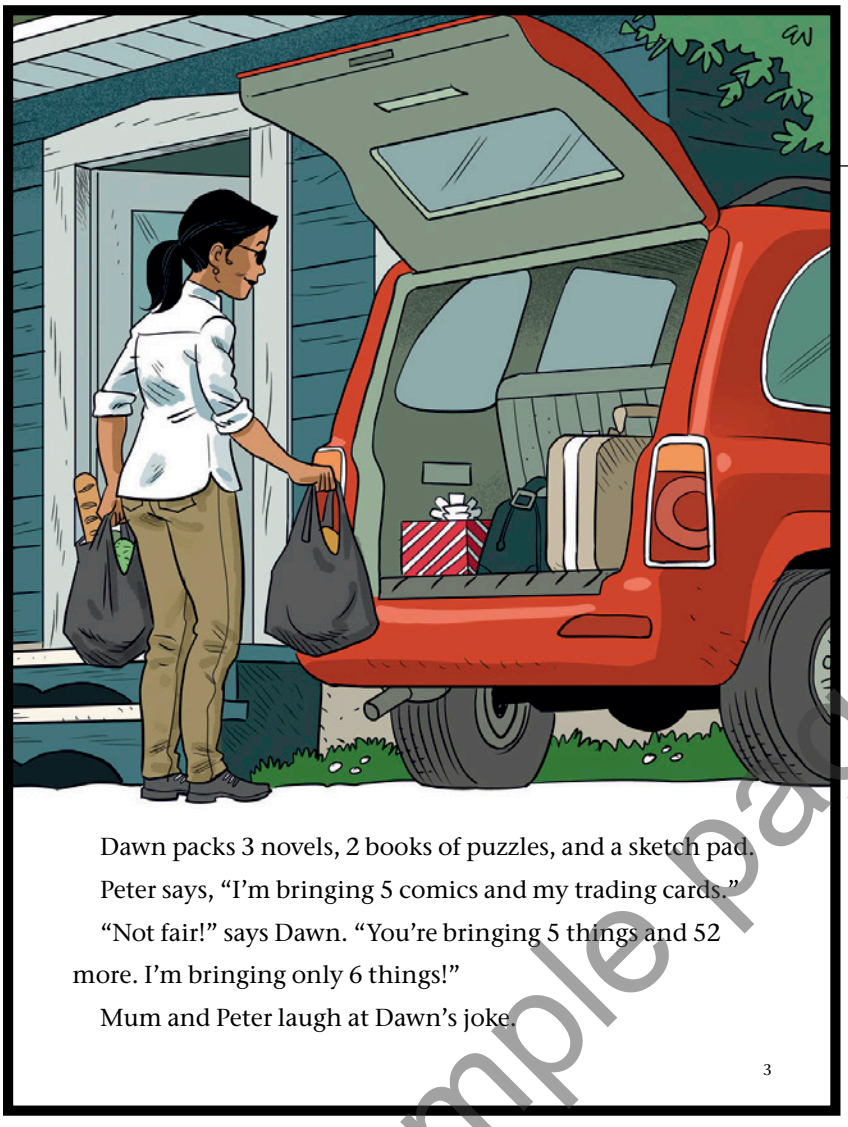
This series recognizes that children's understanding of maths concepts develops over time, and so the series allows you to choose the book that best matches a child's or group's level of mathematical understanding. The books engage children at just the right level in a wide range of mathematical ideas,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

Gran's Damper engages children in conversations, investigations, and activities that help to develop their understanding of the big maths idea that "Symbols and expressions can be used to represent mathematical relations."

Big Idea: Symbols and expressions can be used to represent mathematical relations
(Algebra and equality)

TITLE	KEY MATHS FOCUS	MATHS SKILLS	STRATEGIES	ADDITIONAL FOCUS
	Explore equality and inequality Compare quantities to 20	Create sets that are more than, less than, or equal to a given set Recognize equal and unequal sets Model and describe equality and inequality Make unequal sets equal by adding, subtracting, or rearranging Recognize and understand the = symbol	Compare using terms more/less/same, equal/balanced/not balanced Use a 'yoke' to check equality	Use positional language to describe location Compare mass
	Model and describe equality and inequality Explore properties of addition and subtraction	Model and describe equality (balance; the same as) and inequality (imbalance; not the same as) Recognize, use, and understand the equal (=) and not equal (≠) symbols Record different expressions of the same quantity as equalities Decompose and combine numbers to write addition and subtraction equations Investigate addition and subtraction as inverse operations Explore and solve for missing addends and subtrahends	Doubling and halving	Making change Compare mass using balance scales Identify 2-D and 3-D shapes Create tallies and graphs

  ISBN 9780655701859



Dawn packs 3 novels, 2 books of puzzles, and a sketch pad.

Peter says, "I'm bringing 5 comics and my trading cards."

"Not fair!" says Dawn. "You're bringing 5 things and 52 more. I'm bringing only 6 things!"

Mum and Peter laugh at Dawn's joke.

Modelling and describing equality and inequality

- Do Dawn and Peter bring an equal (the same) number of things in the car? *(yes)* Explain how you know. *(e.g., 3 + 2 + 1 = 5 + 1)*
- What other number sentence has an answer of 6? *(e.g., 4 + 2 = 6; 1 + 1 + 4 = 6; 3 + 3 = 6)*
- Suppose Peter brought 8 things in the car when he should only bring 6 things. How many things must he return to equal 6? *(2)* Explain how you know. *(e.g., 8 − 2 = 6)* What other subtraction sentence has an answer of 6? *(e.g., 9 − 3 = 6; 10 − 4 = 6)*

WATCH FOR...

- Does the child recognize and explain equal groups using appropriate vocabulary (*equal to, the same as, balanced*)?
- Does the child create different expressions for the same quantity?

Modelling and describing equality and inequality

- Peter saw 5 crows altogether. What do you see in our classroom that is equal to 5? *(accept any answers children can justify)*

Exploring properties of addition and subtraction

- Suppose there are 6 crows in total. If 2 of them are on the fence, how many are on the ground? *(4)* Suppose 4 of them are on the fence. Now how many are on the ground? *(2)*

The kids read, play games, and do puzzles on the drive. They watch for animals along the roads, too.

Suddenly, Peter says, "I see 4 big crows on the ground! And there's another one on the fence! That makes 5!"

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Large Group Options

If you read ***Gran's Damper*** to a large group or whole class, you might project the book to facilitate reading aloud and better engage children in using symbols and expressions to represent mathematical relations. These activities engage children in exploring and communicating their understanding of modelling, describing, and representing equality and inequality; choose the activities that best address your children's learning needs.

EQUAL OR NOT EQUAL

ENGAGE

Draw attention to page 6 of ***Gran's Damper*** and say:

- **Dawn sees 2 bison standing up and 6 lying down. How many bison does she see altogether?** *(8)* **How can you write that as a number sentence?** *(2 + 6 = 8)*

Introduce or review the equal sign (=) by pointing to it and explaining that it means "equal to" or "the same as." Say:

- **If you saw 6 bison standing up and 1 bison lying down, and wrote 6 + 1 = 8, would that be correct?** *(no)* **Why?**

Encourage children to share their thinking with a partner before discussing as a group. Replace the equal sign (=) with the not equal sign (≠) and explain that this sign means "not equal to" or "not the same as."

WORK ON IT

Provide pairs with 2 number cubes and a recording sheet (LM 4 is provided as an option). Roll 1 number cube and invite a volunteer to roll another number cube. Compare the numbers and decide if they are equal or unequal. Record the numbers using the appropriate sign (≠ or =). Invite children to do the same with a partner. When the process is clear and children are using the equal and unequal signs appropriately, introduce the next step. Say:

- **Now you are ready to roll 2 number cubes at a time. Taking turns, roll 2 number cubes, record your numbers, and add them up. Decide with your partner if you should record an equal sign or unequal sign to complete your number sentence.**

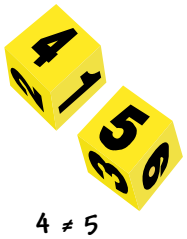
SHARE AND REFLECT

Meet to review the equal and not equal signs. Ask questions such as:

- **What strategy did you use to choose an equal sign or an unequal sign?**
- **Can you think of another situation in which you would use the equal or not equal signs?**
- **(Jen) rolled 4 and 3. (Sammi) rolled 5 and 4. Did they choose an equal or unequal sign? Do you agree with their choice? Why?**

MATHS FOCUS: recognize, use, and understand equal (=) and not equal (≠) symbols when comparing expressions

MATERIALS: ***Gran's Damper***, p. 6; Equal or Not Equal (LM 4); number cubes



4 ≠ 5

2 + 6 ≠ 4 + 5

WATCH FOR...

- Does the child understand the difference between the signs (= and ≠) and does the child explain when to use each?
- Can the child identify which numbers are equal and not equal?

DIFFERENTIATE: Some pairs might benefit from rolling 1 number cube each, while others might roll 2 or more number cubes each. Encourage children to subtract the numbers on their number cubes, if appropriate.

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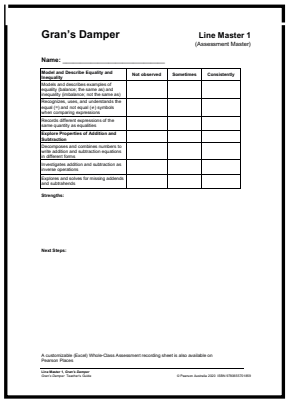
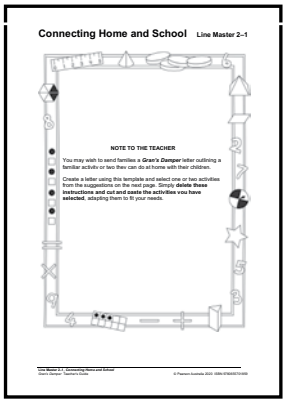
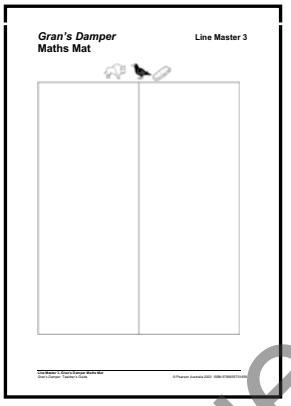


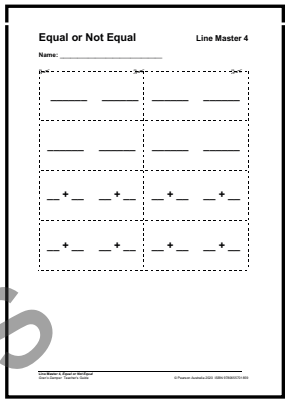
Line Master 1
Assessment Master



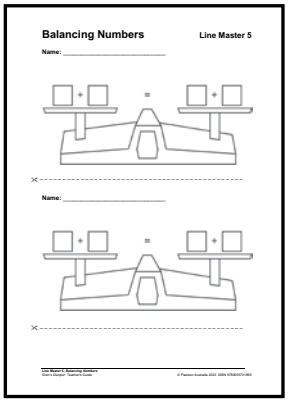
Line Master 2
Connecting Home and School Letter Template



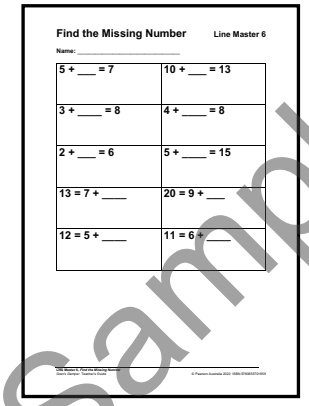
Line Master 3
Gran's Damper Maths Mat



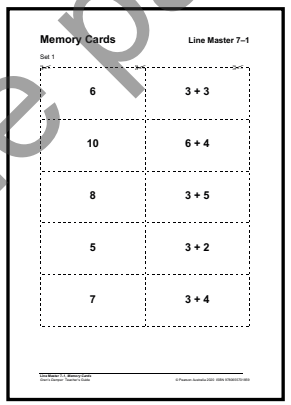
Line Master 4
Equal or Not Equal



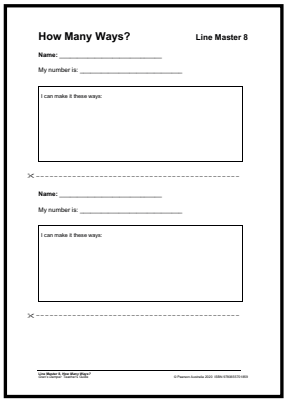
Line Master 5
Balancing Numbers



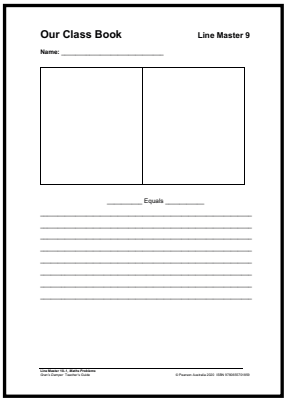
Line Master 6
Find the Missing Number



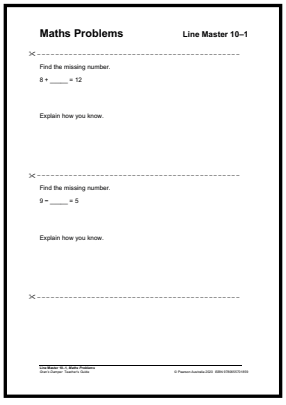
Line Master 7
Memory Cards



Line Master 8
How Many Ways?



Line Master 9
Our Class Book



Line Master 10
Maths Problems