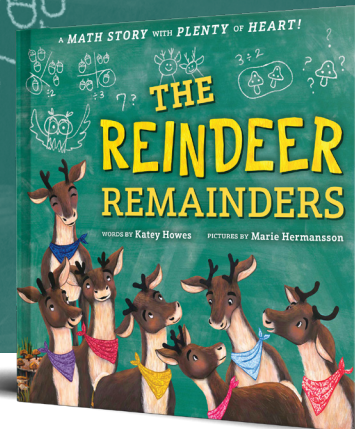# AN EDUCATOR'S GUIDE TO
THE REINDEER REMAINDERS

WORDS BY **Katey Howes**, PICTURES BY **Marie Hermansson**
Discussion & Activity Guide for Ages 4 and up

ABOUT *THE REINDEER REMAINDERS*

A class of a dozen reindeer is preparing for the big Showcase Night event when a new student arrives. This isn't a big deal until it's time to divide in groups, and there's a leftover reindeer every single time. How will the class make sure everyone feels included? And what will they learn in the process?

A delightful rhyming picture book about working together and including others, the book includes facts about division and prime numbers, as well as practical tips for what to do when you or someone else is left out of the group.

ABOUT KATEY HOWES

KATEY HOWES is an author and poet who loves math and science and finding fun ways to bring those things together! Katey's books are often inspired by the natural world around her, although she has yet to see thirteen reindeer visit the small Pennsylvania mountain she calls home. You can find Katey online at kateyhowes.com or on Instagram @kidlitlove.
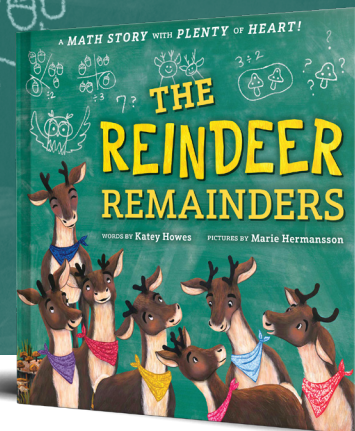
ABOUT MARIE HERMANSSON

MARIE HERMANSSON is an illustrator who lives in North Carolina with her husband, daughter, and son. She loves how children's books have the ability to teach kids about complex topics in a simple and fun way. She believes that picture books are not just for children, either. While conducting research for the books she illustrates, Marie always learns a thing or two as well. Find her online at www.mariehermanssonillustration.com

Pre-Reading Questions & Activities

This book talks about some math concepts that might be new to students. The back matter in this book contains a great introduction to remainders and prime numbers. Review this section with students before reading the book so they are more familiar with the concepts featured in this book.

In this book, there is a classful of reindeer who are divided into groups. In every case, someone is left out. Have students ever been left out of a group? How did it make them feel? If students see someone left out, what could they do to make them feel included?

Before reading the book, examine the cover and review the title. What do students think it means? Then, do a picture walk through the book. Examine the illustrations as a class. What could be happening in each picture? What do students think the story will be about?

Vocabulary

The Reindeer Remainders talks about math and about feeling left out. As a class, review the following words that appear in the book, and try to derive their meaning from context. Then look up the dictionary definition of the word. How close did the students get to the exact meaning? How does knowing the meaning help them to understand the story?

These words might be new to students:

- dozen
- showcase
- partner
- remainder
- focus
- masterpiece
- divide
- supervise
- prime numbers
- unanimous
- awe
- eroded
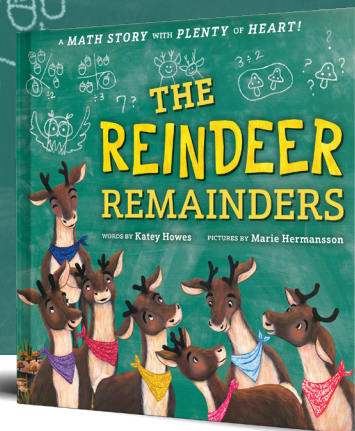- sculptures
- fossils

Special Word
remain-deer

This is not a word students will find in the dictionary, but it is important to this story! Discuss with the class what this word means in the context of the book. This word is an example of a figure of speech called a pun. Do students know what a pun is? As a class, use the internet or other resources to explore the world of puns.

Post-Reading Discussion Questions and Activities

Retell the Story/Look for Themes

Break students into pairs and have them retell the events of the story to each other, identifying the beginning, the middle, and the end. This story has a few different "big ideas" or themes. Some deal with math concepts, and some deal with feelings of being left out and how to help when that happens. Come together as a class and talk about the following questions: What are the big ideas in this story? How do the characters respond to these big issues?

Words and Pictures

This book identifies the author and illustrator by saying, "words by Katey Howes, pictures by Marie Hermansson." This is a great way to think about how a picture book works. The words and the pictures work together to communicate the story. What does the text of *The Reindeer Remainders* tell us? What do the pictures show us?

Details, Details

Break the class into groups (not necessarily equal!) and assign each a picture or spread for closer study. Have students examine their picture. What is going on in this illustration? How does it convey the "big ideas" of the story, such as prime numbers, creating sets, working together, and making sure no one feels left out? Have each group present their illustration to the class and explain what they discovered.

Same but Different

The thirteen reindeer are never given names, and they look similar. However, have students noticed that each one is unique? What features or details set the reindeer apart from each other? Choose two reindeer to follow through the book and see what parts they play in the story.

Endpaper Examination

The end papers display mathematical symbols for division and also show objects divided into sets. How do the pictures of objects divided into groups illustrate the meaning of the division symbols? What other things do students notice on the endpapers?
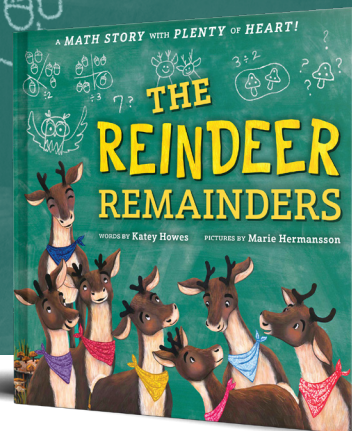
Remain-deer Solutions

The first couple of times the reindeer find themselves with a "remain-deer," they take different approaches to resolving the situation. What solutions do they come up with? Why do they feel they need to solve the "remain-deer" problem before Showcase Night? Where do they go for help with a solution? What solution do they come up with? Brainstorm as a class to come up with other solutions to this problem.

When Someone is Left Out

The scenes where the reindeer break into groups only to find one "remain-deer" communicate how the reindeer feel—both those in groups and the one left out. Look at the pictures and read the text. How do the reindeer who are left out feel? How does the rest of the class feel? How does the story communicate that? How would students feel if they were in a similar situation?

(Be sure to review "When Someone is Left Out" in the back matter for more information and discussion points.)

Prime Showcase

The reindeer are preparing projects for Showcase Night. What do students think Showcase Night is? How do the reindeer feel about it? Drawing on the text and illustrations, identify what different subjects the reindeer study. Showcase Night was originally going to have a separate display for each subject. How does the book show and tell that to the reader? How and why do the reindeer change their Showcase Night presentation by the end of the book? How are prime numbers included in their presentation?

Twelve vs. Thirteen

In this book the reindeer discover how hard it is to divide thirteen items into equally-sized groups, and in the process learn about prime numbers. Break students into groups and have them practice grouping twelve items into equally-sized sets. How many different groupings can they create? What happens when there are thirteen items instead? Have students ever heard of prime numbers? What do all prime numbers have in common?

Dividing Objects into Sets

Come together as a class and use paper clips, marbles, or other small objects to practice breaking different numbers of items into sets of different sizes. Starting with one item and working up to twenty objects, rearrange the items to discover which numbers are prime—that is, ones that can't be divided into equal groups. After the class understands a little bit more about prime numbers, assign each student a prime number to illustrate. Have students create an illustration showing a collection of objects representing their number divided into sets, with a remainder. Create a classroom gallery to showcase their posters!