



TO DO! TO GO! Playing with Math!

Young children are natural mathematicians!

Mathematicians:

- Are brave and bold. They take risks and discover.
- Make mistakes, repeat, tinker, and change their thinking.
- Ask questions, share ideas and consider other perspectives.
- Are playful, notice and wonder.

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Perspective Taking

The books and activities in this booklet focus on exploring and playing with the mathematical **practice** of perspective taking.

Mathematicians **know**: counting, size, shapes and numbers.

Practices are what mathematicians **do**: make sense of problems, persevere in solving them, engage with others perspectives, take risks, make mistakes, and ask questions.

Math is much more than memorizing!

Young mathematicians today will solve problems of tomorrow.

What does perspective taking look like in math? Mathematicians:

- Share ideas
- Listen
- Consider and think within another's ideas and perspective
- Grow in shared understanding

When talking with a young child, perspective taking might sound like:

- I think...because...
- I hear you saying...
- I wonder if....

Reading Together

Any story is an opportunity to think as a mathematician. When you read together, one of the best ways to deepen your reading time together is to pause and ask questions. Here are some great questions to ask to boost literacy and math during read-aloud time.

Literacy Questions:

- What do you think will happen in this story, and why do you think so?
- What will happen next? How do you know?
- What connections can you make between this story and another story, or something else you know?

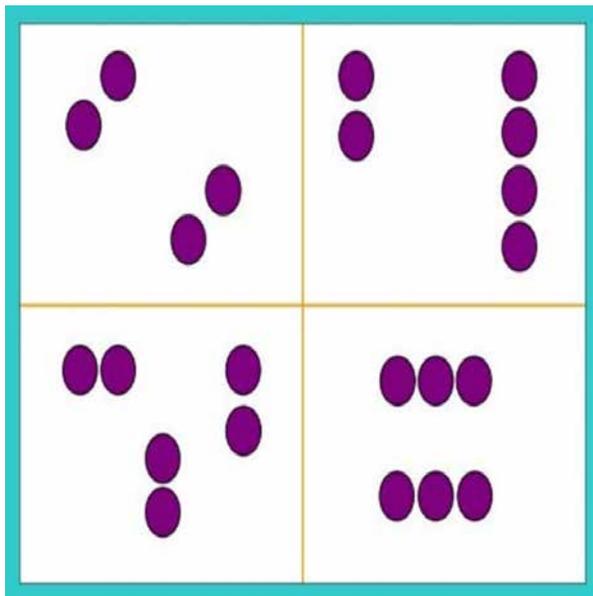
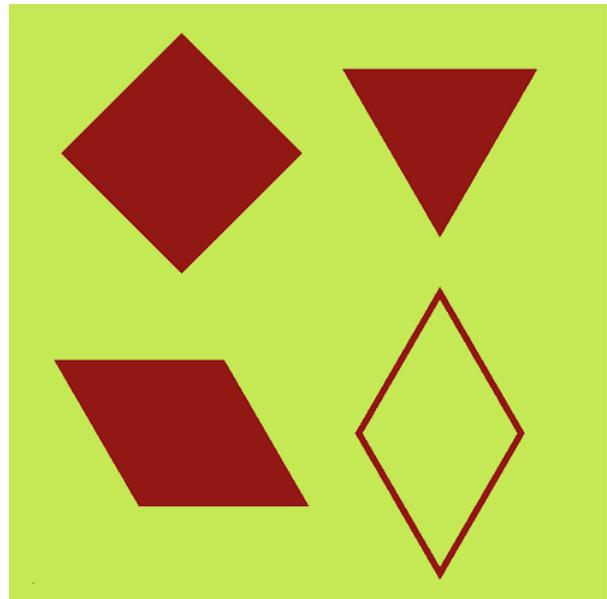
Math Questions:

- What do you see, notice, or wonder about?
- What (numbers, combinations, patterns, shapes or other math concepts) do you see?
- How might you use the illustrations to show your thinking?



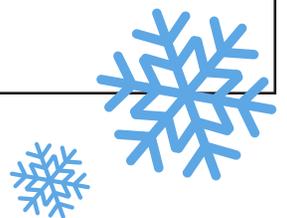
Which Belong Together?

Look at these groups of four things. Each snowflake, for instance, has things in common with the other snowflakes and things about it that are different from the other snowflakes. In each group of four things, which belong together? Why? There are only correct answers.

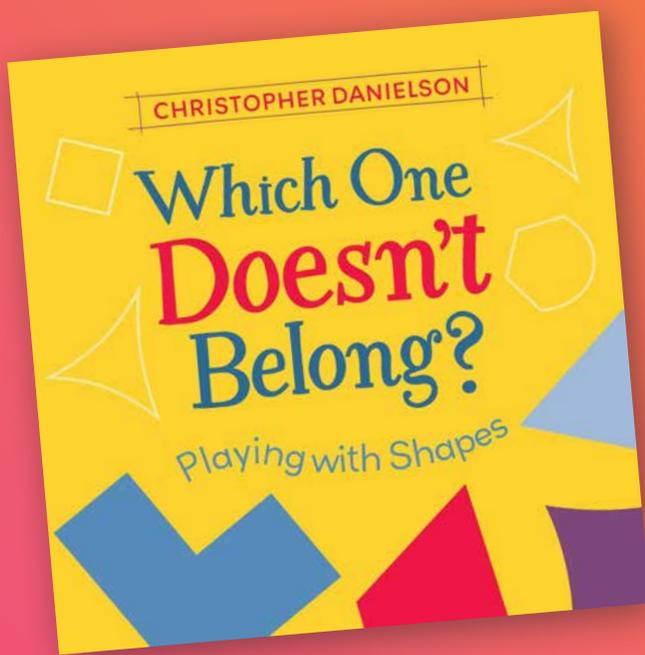


Which Belong Together?

Draw your own group of four things here, and have a friend or family member guess which ones belong together!

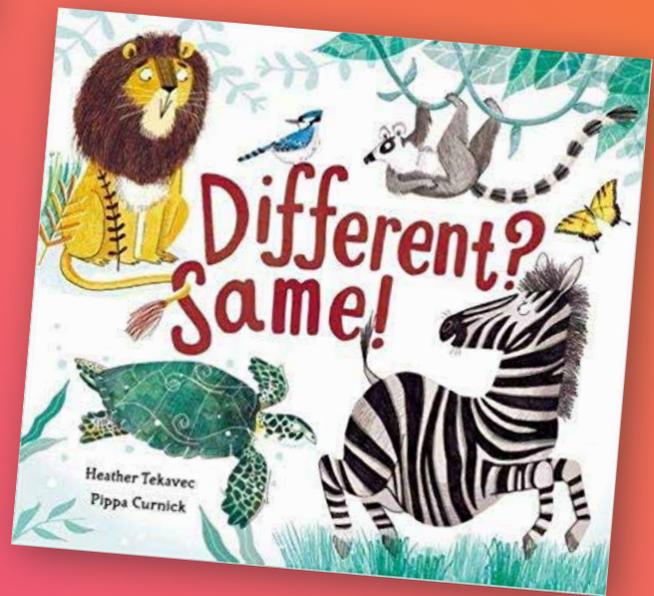


Books that encourage young mathematicians to categorize



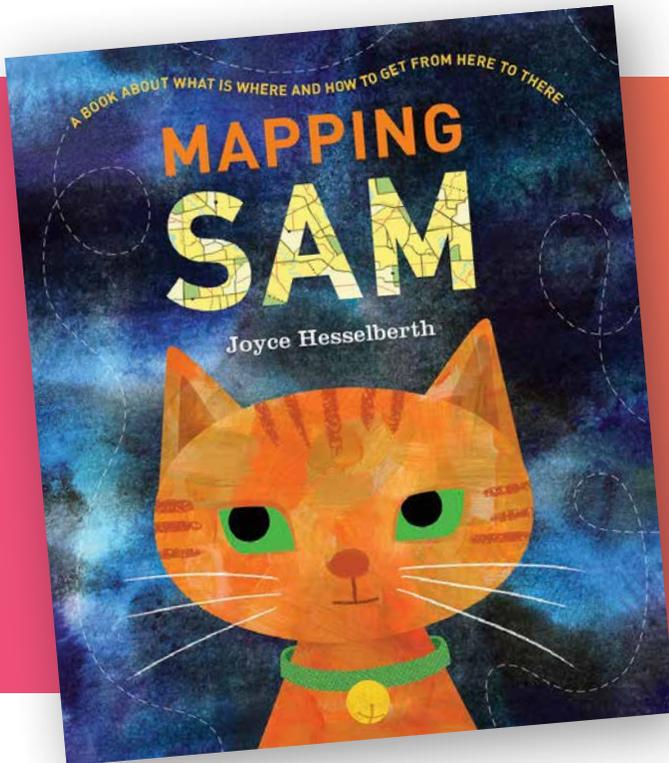
*Which One Doesn't Belong?
Playing with Shapes*
by: Christopher Danielson

Different? Same!
by: Heather Tekavec and Pippa Curnick



Mapping Sam

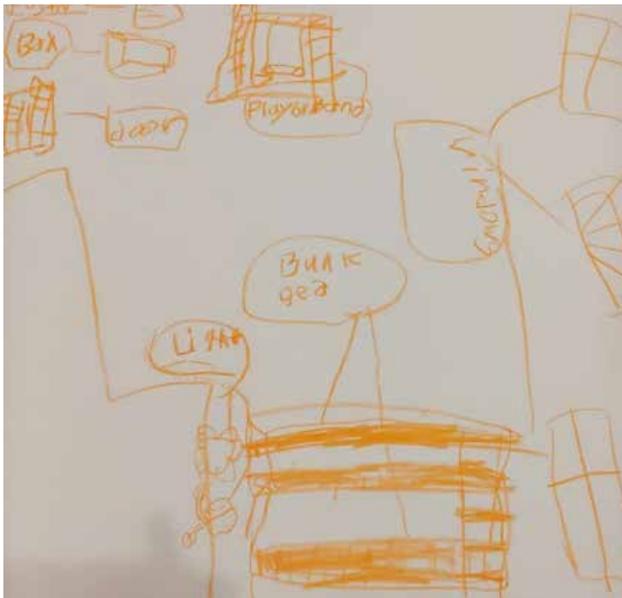
by Joyce Hesselberth



Sam the cat puts her family to bed, and then—when all is quiet—heads out to explore her neighborhood. As Sam follows her customary path, wandering farther and farther away from home, readers encounter different kinds of maps illuminating different points of view and the various spots Sam visits.

Drawing maps with children can be a fun way to develop spatial and mathematical thinking!

Maps help children visualize where objects, places, cities, and counties are in relation to one another. Quite literally, maps help them figure out their place in the world.



Here is a map created by a young child and grown-up working together

Books that encourage young mathematicians to explore maps

Cece Loves Science and Adventure

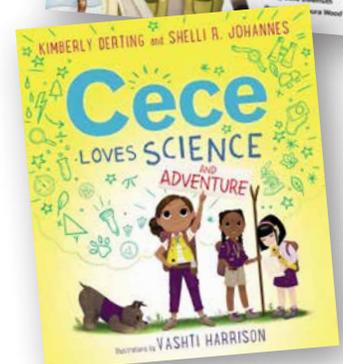
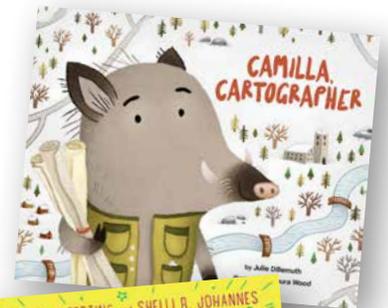
by Vashti Harrison

Henry's Map

by David Elliot

Camilla, Cartographer

by Julie Dillemath



Draw Your Own Map

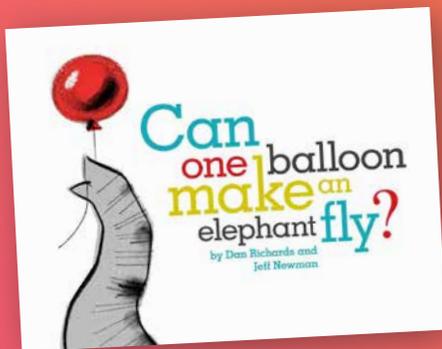
- Grab some crayons and work with your child to draw maps of places you both know well.
- Start with rooms in your home and then expand to favorite places like a local park. Use simple shapes to draw and label objects such as furniture or playground equipment.
- Take a walk around the block together, looking for landmarks to include in a neighborhood map. As kids get more proficient, encourage them to create maps of imaginary worlds or of places in their favorite books or movies.
- When your map is ready, invite Sam to visit the place on your map! Cut out the figure of Sam and put her on your map!



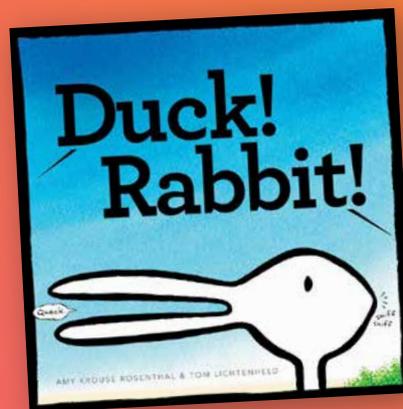
Read-aloud Suggestions

Here are a few books that invite children to think and act like mathematicians. These books focus on the importance of perspective taking.

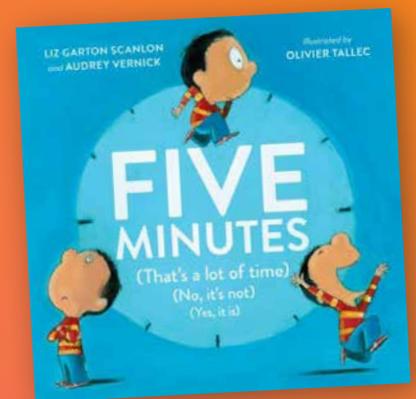
Pick these up at your local library!



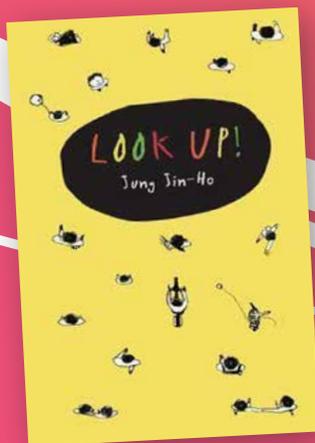
Can One Balloon Make an Elephant Fly?
by: Dan Richards



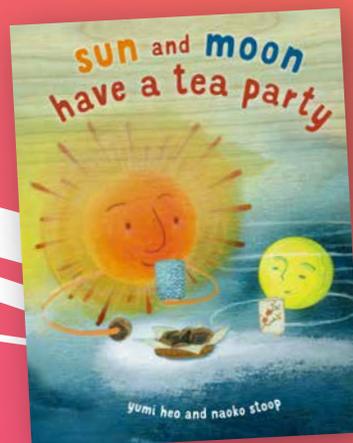
Duck! Rabbit!
by: Amy Krouse Rosenthal



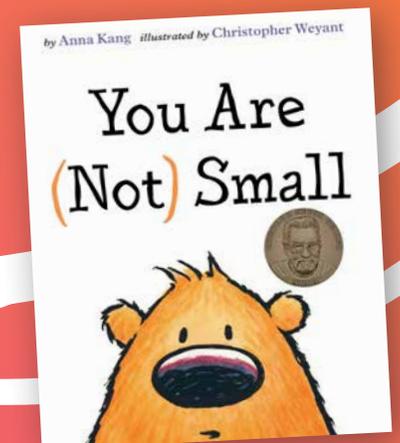
Five Minutes (That's a lot of time) (No, it isn't) (Yes, it is)
by: Elizabeth Scanlon



Look Up!
by: Jung Jin-Ho



Sun and Moon Have A Tea Party
by: Yumi Heo



You Are (Not) Small
by: Anna King