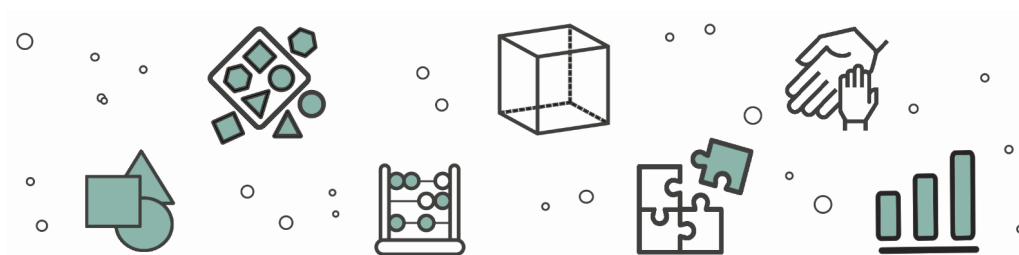




Washington Office of Superintendent of
PUBLIC INSTRUCTION
Mathematics



Mathematics **Newsletter** *at home*

June 2021

Welcome to Mathematics at Home!

We are excited to share our
Summer **Mathematics at Home
Newsletter**.

Summer brings long sunny days and kids who are looking for things to keep them busy within a few weeks of school getting out. School may not be in session, but we still want our kids exploring their environment, investigating how things work, and learning about the world around them. In this newsletter we have choice boards filled with ideas involving water and chalk, we offer some investigations that combine math and science, and we share some reading ideas for those moments of downtime.

We hope that you enjoy the slower place of summer to connect with and engage your kids in math. We welcome your feedback and suggestions. Reach out to us anytime at Mathematics@k12.wa.us



Math Choice Boards – Summer Edition



| | COUNTING & CARDINALITY | OPERATIONS & ALGEBRAIC THINKING | MEASUREMENT & DATA | GEOMETRY |
|----------------------------------|---|--|--|--|
| Level 1 (Preschool) | Count the petals on flowers. Do all the flowers have the same number of petals? | Write the numbers 1-10 in chalk. Have someone call out a number and then run to stand on that number. Hold up the corresponding value on your fingers. Where is number 4? Can you show me 4 on your fingers? | While outside, or on a walk find 4 things that are heavier than you and 4 things that are lighter than you. | Using chalk, create a maze with shapes by drawing different shapes (triangle, square, circle, etc.) close together. Name a shape and follow it out of the maze, make sure to only step on the shape that has been named. |
| Level 2 (Pre-K) | Ask a grown up to write numbers in chalk. Trace over numbers written in chalk with water using a paintbrush. | With chalk write the numbers 1-6 in a line, but in random order. Across from that draw the six different sides to a die, also in random order. Using chalk connect the number with its corresponding die. | Playing outside, compare volume and the capacity of different size containers by filling and emptying them. Which container holds the most liquid? How can you find out? | Make chalk paint by mixing 2 tablespoons of cornstarch, 4 tablespoons of water, and a couple drops of food coloring. Using a paint brush, practice drawing different shapes outside. |
| Level 3 (Kindergarten) | Find several of two different objects (ex: flowers and pinecones) Draw a ten frame on the ground. Play around with different combinations that equal 10. | Find ten rocks. Ask someone to use a leaf or other outdoor object to cover some of the rocks. Guess how many rocks are covered. | While on a walk collect stuff that you find on the ground. Sort your findings into categories (ex: shape, color, size, etc.) Make a table of your finds. | Go on a photo shape hunt. See how many 2-dimensional (square, triangle, circle, etc.) and 3-dimensional (cubes, spheres, cones, etc.) shapes you can find. Take pictures of them and share with a friend or sibling. |
| Level 4 (1st grade) | Using chalk, draw "puzzles" jumping distance apart. Choose a series of numbers (2, 12, 22, 32, 42, 52, 62, etc.) Write one in each puzzle in any order. Choose a starting number. Have someone then tell you if the next number is 10 less or 10 more. Jump to that puzzle. Repeat. | Draw 21 carrots (or other plants) with chalk and write a number, 0-20 on each carrot. Pick two carrots to create a math equation (addition or subtraction), then using a watering can or jug "water" the carrot with the correct answer. | Go on a bug hunt recording the different types and amounts of bugs you see, then make a bar chart. | Draw a square with chalk. Can you turn the square into 2 equal triangles? How about 4 equal triangles? Draw a triangle with chalk. Can you turn the big triangle into 4 equal triangles? Try with other shapes. |

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So often we get locked into the idea that math has to be taught by sitting down at a table and completing worksheets. We want to challenge that idea by providing you with some **choice boards**. These grids are filled with fun activities you can do at home or out in the community while playing with your kids. We like choice boards because they give children a choice while still setting specific parameters designed to encourage developmentally appropriate math skills.

We have set up the choice boards by grade bands, but don't feel limited. Enter the board at a place that best suits your child. Each column focuses on a different math concept, and the activities dive deeper into the skill as you work your way down the board.

Between school being out, the hot weather, and energetic kids; the goal is to get kids outside as much as possible. Use the activities in these boards to continue the learning over the summer while enjoying the sun and burning energy.

Download the PDF choice boards:

- [Preschool through 1st grade](#)
- [2nd grade through 4th grade](#)

Exploring Math Through Stories

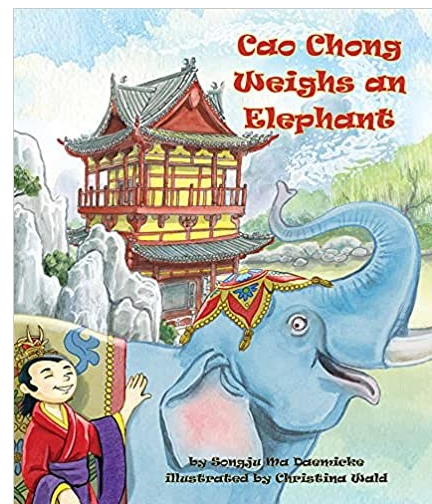
Great stories are a wonderful way to get young people of all ages excited and interested in mathematics. The annual book prize, [Mathical: Books for Kids from Tots to Teens](#), recognizes the most inspiring math-related fiction and nonfiction books that bring the wonder of math to life.

CAO CHONG WEIGHS AN ELEPHANT (MATHICAL HONOR BOOK)

Written by Songju Ma Daemicke • Illustrated by Christina Wald

Ages 5-8

How much does an elephant weigh? How do you know? How would you know if



(Continued on page 3)

you didn't have a modern scale? Six-year-old Cao Chong, the most famous child prodigy in Chinese history, faced just this problem! Chong watches as the prime minister's most trusted and learned advisors debate different methods. The principle of buoyancy and a little bit of creative thinking help this boy come up with a solution.

KEY MATH CONCEPTS

- Math-Life connection
- Problem Solving

RESOURCES

Want to enjoy Mathical books with the children around you? Feeling uncertain about guiding them through the book?

[Cao Chong Weighs an Elephant DREME Storybook Guide](#) (PDF, © Stanford University, DREME Network)

[For Creative Minds – Activity & Resource Guide](#) (English PDF)

[Para las mentes creativas – Activity & Resource Guide](#) (Spanish PDF)

[Teaching Activity Guide](#) (PDF)

Online quizzes: [Reading](#) / [For Creative Minds](#) / [Math](#)

[Author interview](#) (PDF)

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Summertime STEM

With summertime here, it means that it's time to get outside and learn while playing with Summer STEM activities. The fresh air and freedom to investigate it makes it a great opportunity to explore based on kids interests.



Math is everywhere in the world around you. So are other content areas, and they work wonderfully together. In this issue, we offer an activity that blends math and science in several ways.

How Do Plants Grow?

Choose 3 or 4 plants that you can see regularly. They can be in your yard, in pots on your balcony or deck, or in your neighborhood. Look at them closely...([see more](#))

Mindset

The idea of a *growth mindset* was initially developed by Stanford Professor Carol Dweck, Ph.D., and since then a great deal of research has gone into its study and the implications it has on children and their learning. Whether you are new or experienced in the idea of a growth mindset, in each newsletter we will provide resources to help deepen your understanding and give you tools to use with your kids in developing their belief in themselves as capable doers of math.



Parent's Beliefs about Math Change Their Children's Achievement

We now know that the messages we give students can change their performance dramatically, and that students need to know that the adults in their lives

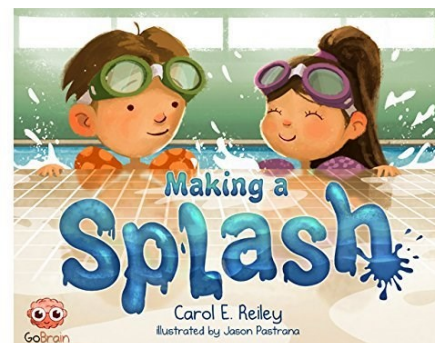
believe in them. Researchers are learning that students' ideas about their ability and potential are extremely important, much more than previously understood. As well as the messages we give students about their potential, brain research is now showing that messages students pick up from their parents about math and their parents' relationships with math can also change students' math learning and achievement. [Read the article in its entirety to learn more.](#)

A Story of Growth Mindset

Making a Splash – Growth Mindset for Kids

Written by Carol E. Reiley • Illustrated by Jason Pastrana

Siblings Lisa and Johnny are both learning to swim. For Johnny it comes naturally and he doesn't have to work at it. Lisa has a more difficult time and becomes negative - *Swimming is too hard, I CAN'T do this*. Her coach teaches her the power of yet. *You can't do this YET. When you practice hard, things get easier. That's how we learn*. The illustrated pages tell the story of the two siblings and how they differ in their attitudes toward learning.



This book advocates the growth mindset philosophy that says intelligence is malleable and can be developed through dedication and hard work, as opposed to the belief you're born with a fixed amount of smarts. The takeaway: It's not how smart you are; it's how smart you can become if you push yourself.

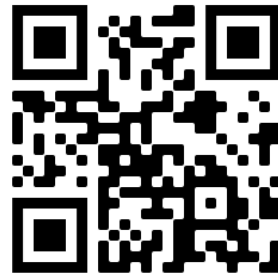
The book has a fun story for kids and a nonfiction part for parents.

Check out your local library.

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Sign up: bit.ly/OSPIMathAtHome



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ALL STUDENTS PREPARED FOR POST-SECONDARY PATHWAYS, CAREERS, AND CIVIC ENGAGEMENT.

Led by State Superintendent Chris Reykdal, OSPI oversees K-12 public education in Washington state. Our mission is to provide funding, resources, tools, data and technical assistance that enable educators to ensure students succeed in our public schools, are prepared to access post-secondary training and education, and are equipped to thrive in their careers and lives.

