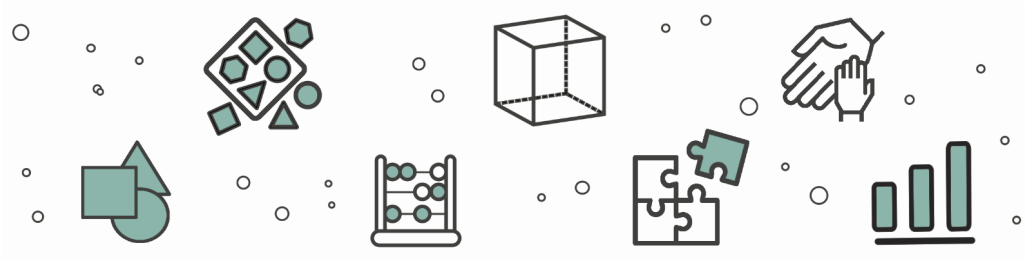
Washington Office of Superintendent of
PUBLIC INSTRUCTION
Mathematics



Mathematics Newsletter at home

December 2020

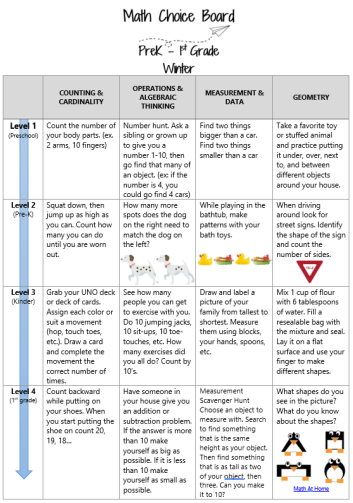
Welcome to Mathematics at Home!

We are excited to share our Winter **Mathematics at Home Newsletter.** As we say goodbye to a year that was one of a kind, with many challenges, we hope that you are able to slow down and take some time to reflect on the good moments this year had. Hopefully you can take some time during the break to have some family time. This newsletter has lots of activities that you can do to keep kids engaged over the winter break and during the cold winter months.

We hope that you enjoy connecting with and engaging your kids in math. We welcome your feedback and suggestions. Reach out to us anytime at Mathematics@k12.wa.us

Math Resources

Math Choice Boards – Winter Edition


Math Choice Board
PreK – 1st Grade
Winter

	COUNTING & CARDINALITY	OPERATIONS & ALGEBRAIC THINKING	MEASUREMENT & DATA	GEOMETRY
Level 1 (Preschool)	Count the number of your body parts. (ex. 2 arms, 10 fingers)	Number hunt. Ask a sibling or grown up to give you a number 1-10, then go find that many of an object. (ex: if the number is 4, you could go find 4 cars)	Find two things bigger than a car. Find two things smaller than a car	Take a favorite toy or stuffed animal and practice putting it under, over, next to, and between different objects around your house.
Level 2 (Pre-K)	Squat down, then jump up as high as you can. Count how many you can do until you are worn out.	How many more spots does the dog on the right need to match the dog on the left?	While playing in the bathtub, make patterns with your bath toys.	When driving around look for street signs. Identify the shape of the sign and count the number of sides.
Level 3 (Kinder)	Grab your UNO deck or deck of cards. Assign each color or suit a movement (hop, touch toes, etc.). Draw a card and complete the movement the correct number of times.	See how many people you can get to exercise with you. Do 10 jumping jacks, 10 sit-ups, 10 toe-touches, etc. How many exercises did you all do? Count by 10's.	Draw and label a picture of your family from tallest to shortest. Measure them using blocks, your hands, spoons, etc.	Mix 1 cup of flour with 6 tablespoons of water. Fill a resealable bag with the mixture and seal. Lay it on a flat surface and use your finger to make different shapes.
Level 4 (1st grade)	Count backward while putting on your shoes. When you start putting the shoe on count 20, 19, 18...	Have someone in your house give you an addition or subtraction problem. If the answer is more than 10 make yourself as big as possible. If it is less than 10 make yourself as small as possible.	Measurement Scavenger Hunt Choose an object to measure with. Search to find something that is the same height as your object. Then find something that is as tall as two of your object, then three. Can you make it to 10?	What shapes do you see in the picture? What do you know about the shapes?

Math At Home

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 choice while still setting specific parameters designed to encourage developmentally appropriate math skills.

We have set up the choice boards by grade bands. Each column focuses on a different math concept, and the activities dive deeper into the skill as you work your way down the board. This gives you the freedom to enter the board at a place that best suits your child, and provides additional activities to continue working on the skill.

Download the PDF choice boards:

- Pre-k through 1st grade
- 1st 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 to life the wonder of math in our lives.

ONE BIG PAIR OF UNDERWEAR *(2015 AWARD WINNER)*

Written by Laura Gehl • Illustrated by Tom Lichtenheld

Kindergarten through 2nd grade

KEY MATH CONCEPTS

- Comparing numbers by size
- Noticing problems by counting and comparing
- Using math as a tool to solve problems fairly

Reading Guide

Want to enjoy Mathical books with the children around you? Feeling uncertain

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about guiding them through the math-related parts of the book?

This reading guide includes activities for before, during, and after reading. It also includes both math-centric and narrative activities to start discussions and activities.

Click here to see the reading guide for *One Big Pair of Underwear*

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PBS TV Learning Opportunities

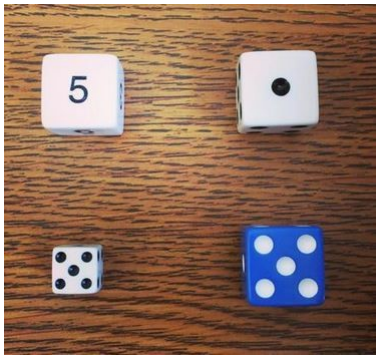
PBS member stations throughout Washington are partnering with the OSPI to support educators as they continue to provide distance learning for students. We are also working to connect parents and children with resources to help them cope with continuing school closures.

If you have ever had questions about the strategies or tools teachers are using to teach kids math, PBS has compiled some short videos designed for parents. These videos model some of the common strategies being used in the classroom.

Good To Know *is a digital video series for adults that introduces the methods, vocabulary, and processes their child learns at school. These short, clear and fun videos will help to explain math topics that are taught in Pre-Kindergarten, Kindergarten and Grades 1-4 Common Core curricula. The videos will help develop a conceptual understanding of how math practices build on previous knowledge and empower parents and caregivers to help their children learn foundational math skills!*

We encourage you to check them out, and as always don't hesitate to contact your child's teachers to learn more.

Which One Doesn't Belong



In our teacher newsletter we featured a routine called Which One Doesn't Belong (WODB). We wanted to share this activity with parents as well because it is easy to use at home and is a catalyst for great conversations. You may remember that Sesame Street has a game called One of these things (is not like the other), which this activity is very similar to.

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Which One Doesn't Belong (WODB) gives kids the opportunity to explain their thinking and justify their reasoning. Each WODB set is designed to be interpreted in a variety of different ways, and because all answers are correct,

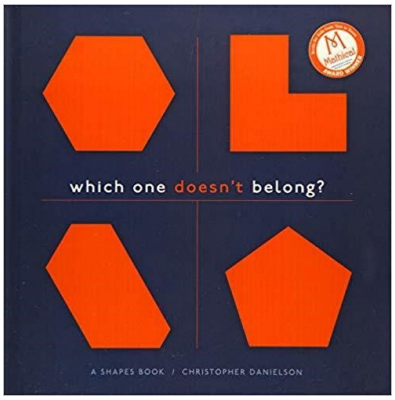
kids focus on justifications that spark deep mathematical thinking and discussion.

You can read more about Which One Doesn't Belong at Math Anywhere.

On their site you can find:

- How-to videos (also available in Spanish)
- Printables
- Additional ideas

Follow MathAnywhere on Twitter @mathanywhere



Which One Doesn't Belong? A Shapes Book

Written by Christopher Danielson

All ages

Every colorful page of Christopher Danielson's children's picture book, Which One Doesn't Belong?, contains a thoughtfully designed set of four shapes. Each of the shapes can be a correct answer to the question "Which one doesn't belong?" Because all their answers are right answers, students naturally shift their focus to justifications based on the shapes' properties and attributes. They construct arguments supporting their choices, and strive to understand their classmates' reasoning. They learn to look deeply at shapes and experience how creativity, beauty, argumentation, and conversation are all integral to mathematics. From kindergarten through calculus, students and their teachers gather around Which One Doesn't Belong? to have rich, open-ended discussions about:

Key Math Concepts

- Construct viable arguments
- Develop understanding of attributes of shapes
- Use precise language to make quantitative observations

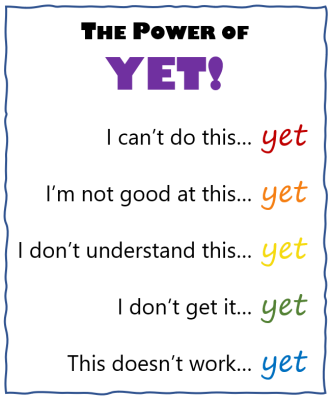
Mindset

The idea of a growth mindset was founded 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 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.

Growth Mindset video (for Parents)

Should you tell your kids they are smart or talented? Professor Carol Dweck answers this question and more, as she talks about her groundbreaking work on developing mindsets. She emphasizes the power of "yet" in helping students succeed in and out of the classroom.

Watch Carol Dweck speak (9:37) about the power of yet versus the tyranny of now and her research on growth mindset. (Stanford Alumni, 2014)

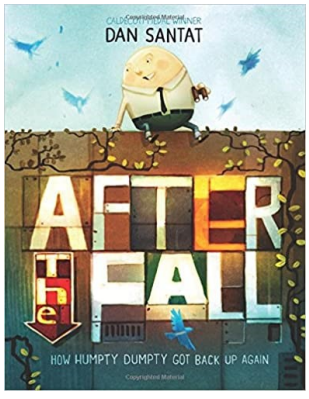


The Power of Yet

Do you want to grow up to be an author, an astronaut, a scientist, or a doctor? That's great! But maybe you don't know how many bones are in an arm or even how to spell...yet. Believe in yourself, work hard, stay focused, and one day you'll get to where you want to be. That's the power of yet.

Even your preschoolers can get into the idea. Janelle Monáe brings Dweck's concept to life in the song "The Power of Yet" on *Sesame Street*. *(Best for: preschool and early elementary school students.)*

A story of Growth Mindset



AFTER THE FALL

by Dan Santat

Everyone knows that when Humpty Dumpty sat on a wall, Humpty Dumpty had a great fall. But what happened *after*?

Caldecott Medalist Dan Santat's poignant tale follows Humpty Dumpty, an avid bird watcher whose favorite place to be is high up on the city

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wall—that is, until *after* his famous fall. Now terrified of heights, Humpty can longer do many of the things he loves most.

Will he summon the courage to face his fear?

After the Fall (How Humpty Dumpty Got Back Up Again) is a masterful picture book that will remind readers of all ages that *Life begins when you get back up*.

You can also find read aloud versions online such as this one.

Newsletter Sign-up

Did you know you can get this newsletter sent straight to your email? Sign-up is easy. Just use the link below or use the camera on your phone to scan the QR code, and then follow the directions.

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.