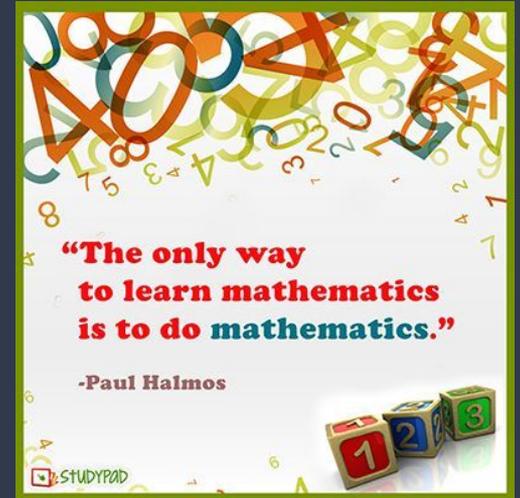
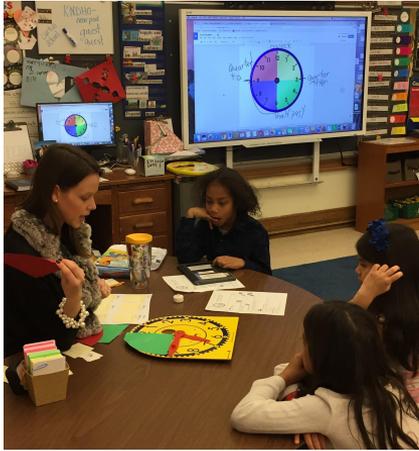


The Parents Guide to Math Workshop

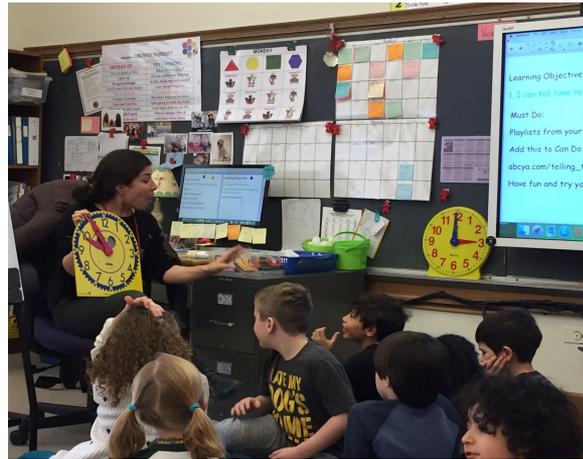
Julian Curtiss School
January 31, 2018



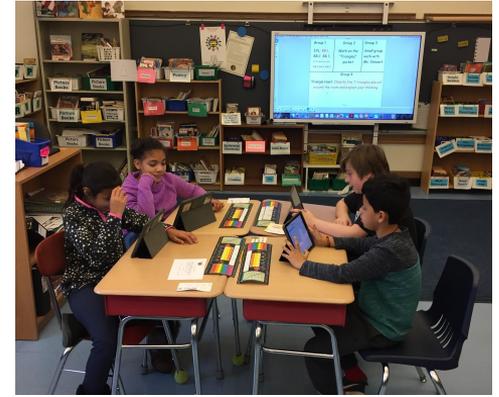
What happens in my child's class during math workshop?



Small Group Work



Mini Lesson



Independent Work



Conferences



Partner Work

Why Math Workshop?

- ★ Predictable structure to allow the focus to be on the “heavy lifting” of teaching and learning
- ★ Mini lessons to explicitly teach strategies students will use not only the day they are taught, but whenever they need them
- ★ Student-centered approach: based on strengths, needs, and interests
- ★ Allows for differentiation and personalization
- ★ Teacher models the work of skilled mathematicians



Why Math Workshop?

- ★ Students have choice in how they approach problems and how they present new knowledge (personalized learning)
- ★ Assessment-based learning provides opportunities for consistent, frequent, and meaningful feedback
- ★ Individual conferences allow for coaching, goal-setting, and reinforcement of teaching points
- ★ Partnerships and group work encourage accountable talk and use of math language



How can I help my mathematician at home?

- Be Aware and Informed
- Practice
- Develop a Healthy “Math Mindset”

Be Aware and Informed

- Learning math is like building a pyramid. Math skills such as counting, addition, subtraction etc are the foundation building blocks that make up the base. If one math skill doesn't quite sink in, it makes the foundations shaky and new skills become harder to learn.
- **Speak to your child regularly** - *What are you doing in math this week? Can you show me/teach me something you're working on?*
- **Speak to the teacher** - They will have a good grasp of how your child is doing compared to what is reasonably expected for their age. If you have particular concerns, don't wait. Teachers welcome the efforts of an engaged parent as a partner in learning!
- **Watch for communication** - Teachers send newsletters about the units they are working on in class, as well as letters with unit assessments to keep you informed about your child's progress. If you have questions, ask!

Develop a Healthy “Math Mindset”

- **Start with yourself** - Are you setting a good example? Throw away remarks like “I’m no good at math,” “I hated math in school.” They are easily picked up by children, influencing their attitude toward math. *Show enthusiasm toward math - even if you need to fake it!*
- **Build confidence** - If your child is struggling and has lost some confidence, go back a few steps to the skills that they feel comfortable doing and build from there.
- **Praise for effort, not performance** - It’s continued effort that is important. Making mistakes isn’t bad, it’s a necessary part of the journey for every learner. Change “I can’t do it,” to “I can’t do it yet.”
- **Keep your child motivated** - a key role (and challenge) for parents. Think more carrot, less stick. And consider getting other family members involved in the all-important encouragement.

Practice

Math, very much like sports or music, is a skill that needs practice. What a few experts have to say...

- **Professor Brian Cox:** *“I’m not a natural mathematician but few people are...you have to practice.”*
- **Professor Marcus du Sautoy:** *“Think of having a mathematical muscle in your mind that with practice gradually gets stronger.”*
- **Colin Hegarty:** (math teacher short-listed for the Global Teacher prize), *“Do some math every single day. Math is one of those things you need to practice regularly.”*

A combination of direct, targeted practice based on strengths and challenges with real-life practice and problem solving will produce the best outcome - and a well-rounded mathematician! Direct practice is guided by strengths and challenges revealed by assessments, and provided through multiple means such as mini lessons, classwork, homework, and online practice.

What are some “real-life” math activities?

- **Shopping** - Involve younger children in counting out items, talk about one more, one less, bigger smaller etc. Older children can practice money management, and comparing discounts are a great opportunity for some quite complex mental math.
- **Cooking** - Always a favorite! Perfect for understanding and practicing numbers, measuring, size, shape and time. Fractions can also be introduced in sharing out portions.
- **Gardening** - Kids love to help out in the garden so it makes a fun and memorable learning opportunity. Counting, measuring, reading temperature, and sorting are all easy mathematical activities for younger children. Older children may enjoy planning a gardening project - introducing scale, evenly spacing out seeds, checking temperatures and measuring plants as they grow.
- **Games and puzzles** - Math puzzles are great when they involve the whole family and younger members can be involved in working through and finding creative solutions.

Questions to ask your child to check in on their math learning...

- What did you learn in math today?
- Can you show/teach me something you learned?
- What is the problem asking you?
- What do you already know?
- Have you ever seen anything like this problem before?
- Can you think of another way to solve this problem?
- Can you make a guess? How would you know if you were right?
- What were you proud of in math today?
- What challenged you the most in math today?

Using Parent Letters to support your child at home

SCHOOL TO HOME FIRST GRADE MATH PARENT LETTER

Unit 1: Add and Subtract, Fluency to 10

Dear Families,

Based on feedback from our parent community, you have been asking for ways they can help support your learners at home. At the end of each unit of study in math, you will be receiving a one page document alerting you to the skills addressed during the unit. If your child could benefit from additional practice, these skills will be highlighted on the document with digital resources to support your efforts at home. Any work you choose to do at home is OPTIONAL as the teachers are dedicated to providing a personalized learning experience tailored to each child based on their individual strengths and challenges.

Below you will find a listing of the priority standards and skills that have been addressed in the unit we just completed. Your child would benefit from additional practice with the skills highlighted below. Please continue to review these skills at home using our online resources provided. We will continue to provide personalized experiences to support your child's learning with these concepts.

Sincerely,
The Grade 1 Team

Priority Standards and Skills Addressed during the Unit:

1.NBT.1:

- I can count to 100.
- I can count to 100 starting at any number.
- I can read any number up to 30.
- I can write any number up to 30.
- I can label a set of objects up to 30 with the written numeral.

1.OA.1:

- I can model addition and subtraction word problems using objects, drawings, and equations with unknown numbers in different positions.
- I can solve addition and subtraction word problems using objects, drawings, and equations.
- I can solve word problems with unknown numbers in different positions (e.g., $6 + __ = 8$, $6 + 2 = __$).

1.OA.3:

- I can show that adding zero to any number does not change the number (e.g., $4 + 0 = 4$).
- I can show that changing the order of the addends (numbers) does not change the sum.
- I can show when adding three number in any order, the sum does not change (e.g., $2 + 3 + 1 = 5 + 1$).
- I can use properties of operations to add and subtract.

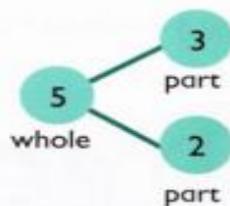
Based on parent feedback requesting more information about their child's performance, a group of administrators collaborated to develop a set of letters to be sent home with unit assessments. These letters will help parents better understand what priority standards and skills may need additional practice, along with online resources to support student learning.

What can I ask my child's teacher about my child as a mathematician?



- What type of growth have you seen this year so far?
- What is my child's math goal right now?
- What can I do at home to help my child at home?
- What kind of activities can we do to practice math at home?

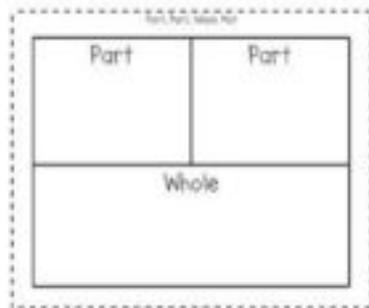
Number Bonds



A number bond is a mental picture of the relationship between a number and the parts that combine to make it. The concept of number bonds is very basic, an important foundation for understanding how numbers work. A whole thing is made up of parts. If you know the parts, you can put them together (add) to find the whole. If you know the whole and one of the parts, you take away the part you know (subtract) to find the other part. Number bonds let children see the inverse relationship between addition and subtraction. To subtract means to figure out how much more you would have to add to get the whole. They also help with addition and subtraction bridging 10. If you want to work out $16 - 8$, for example, you can use the following thought process:

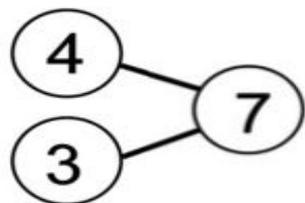
- 8 is made up of 6 and 2
 - $16 - 6$ is 10
- 10 is made of 8 and 2
 - $10 - 2$ is 8
- So $16 - 8 = 8$

Part-Part Whole Boxes



Part-part whole boxes are very similar to number bonds. The difference is in the visual representation. Children can see that the two (or more) parts actually equal the same amount as the whole. Part-part whole boxes are the first step to bar modeling which students learn in the upper grades.

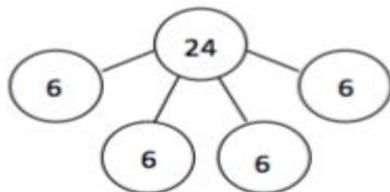
Number Bond Progression:



$$48 + 23 = \underline{71}$$

$$\begin{array}{r} 48 \\ + 23 \\ \hline 71 \end{array}$$

Handwritten decomposition of the addition: 48 is split into 40 and 8, and 23 is split into 20 and 3. The 40 and 20 are added to get 60, and the 8 and 3 are added to get 11. Then 60 + 11 = 71.



Using bar models to solve multiplication and division problems:

One-step

Multiplication

Chloe has 3 boxes of hairclips.
Each box has 12 hairclips.
How many hairclips does Chloe have in all?

12 hairclips

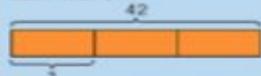


$$12 \times 3 = 36$$

Chloe has 36 hairclips in all.

Division

Tom has 42 toy soldiers.
He keeps them equally in 3 drawers.
How many toy soldiers are there in each drawer?

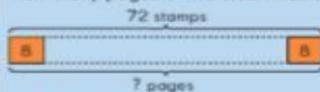


$$3 \text{ units} \longrightarrow 42$$

$$1 \text{ unit} \longrightarrow 42 \div 3 = 14$$

There are 14 toy soldiers in each drawer.

Clark divides 72 stamps equally among the pages of his album.
Each page has 8 stamps.
How many pages of the album has stamps?



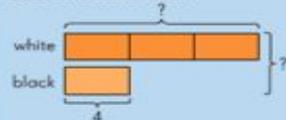
$$72 \div 8 = 9$$

9 pages of the album has stamps.

Two-step

Multiplication

Josie has 4 black T-shirts.
She has 3 times as many white as black T-shirts.
How many T-shirts does she have in all?



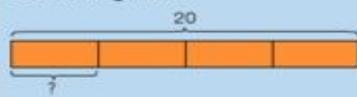
$$3 \times 4 = 12$$

$$12 + 4 = 16$$

Josie has 16 T-shirts in all.

Division

Elsie divides 20 paper clips equally among 4 girls.
She then gives each girl 2 more paper clips.
How many paper clips does each girl have?



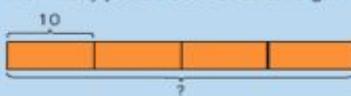
$$20 \div 4 = 5$$

$$5 + 2 = 7$$

Each girl has 7 paper clips.

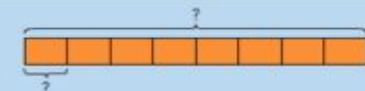
Multiplication and Division

Douglas has 4 boxes of pencils.
Each box has 10 pencils.
He gives the pencils to 8 children.
How many pencils does each child get?



$$4 \times 10 = 40$$

He has 40 pencils.



$$40 \div 8 = 5$$

Each child gets 5 pencils.

Break Out Sessions

Please feel free to explore some of the digital tools that we use to support math instruction here at JC.



GregTangMath



Break Out Sessions

Ms. Colleen Sexton

Mrs. Sandra Grandinetti

Mrs. Brenda Brush

Mrs. Trish McGuire

Resources for Parents

[Your Child's Mathematical Mind](#): How math, and its connections to everything, can help kids learn, understand, and think more deeply about the world. - Douglas Clements, PhD, and Julie Sarama, PhD (Scholastic)

[Instill a Love of Math](#) - Laura Lewis Brown (PBS)

[4 Effective Ways to Help Your Kid With Math](#) - James Daily (TODAY Parenting Team)