



# The Sum

A MONTHLY NEWSLETTER  
OF MATH IN BOULDER  
VALLEY SCHOOL DISTRICT

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## Welcome to the new BVSD Math Newsletter!

— By: Jackie Weber, Director of Mathematics

When I began my role as math director in November 2010, I wanted to get to know the strengths, challenges and needs of the BVSD math community. I have been able to visit almost all of the 55 schools and have had great conversations with hundreds of our teachers, administrators, parents and students. It has been a wonderful learning experience.

One of the key elements of leading a talented and dedicated cadre of educators is communication. In a district the size of BVSD, it is important to me to communicate a clear, consistent and coherent

message through multiple avenues. From my conversations with you came the idea for this newsletter.

December 2011 is our inaugural issue. We are publishing the document electronically with links to our website (which is also being revamped to better serve our math community). We encourage you to read the newsletter electronically and follow the links to other resources. If you prefer a hard copy, the newsletter is also in a printable format for your convenience.

We hope that you will take the time to read page 2 about the new data collection system for the K-5 Math Screeners and the

professional development opportunities coming your way. On page 3 you will find information about instructional strategies that work as well as a look at one of our math instructional coaches, Lauren Rubini. Page 4 highlights an idea for an elementary seasonal lesson using glymphs and an article for parents with suggestions for how they can support their children at home.

I hope you enjoy reading our first edition!

## Mathematics Instructional Tip of the Month: Comparing and Contrasting to Work Out Common Confusions

— By: Jess Evans, Math Instructional Coach

We all know from research and experience that comparing and contrasting is a powerful teaching and learning strategy. This can be applied to math using the basic game of "Compare" or "War." Teachers can purposely "rig" a deck of cards so that students have to confront two numbers, pictures, or symbols that they frequently mix up. For example, many students read 12 as "21" or "20." Using a deck of cards with many 12s, 20s, and 21s ensure that they and their

partner will turn over these cards and will have to distinguish between them. Older students might have a deck with lots of commonly confused 3- or 4-digit numbers such as 605 and 650. Consider asking an upper-grade teacher if they might have students that could help writing the cards for the decks.

### Primary Examples:

Play Compare with dot cards from Investigations, cards with teen and -ty numbers (eg. 17

and 71), clock pictures, or basic shapes.

### Intermediate Examples:

Play Compare with 3-digit or great numbers that often cause problems such as those with zeros, decimals (e.g. 0.50 and 0.05), fractions, clock pictures, polygons (the question might be which shape has the most sides or vertices), dot arrays, grid arrays, or empty arrays.

Happy Math-ing!

## Online K-5 Universal Math Screener Data Collection Tool Unveiled

—By: David Woodward, Math Instructional Coach

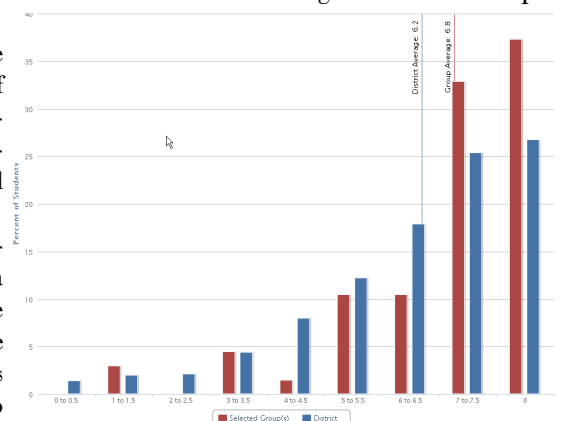
“Without universal screening there is no RtI” – Russell Gersten (2010)

Universal screening assessments are intended to immediately help identify students who are at risk of struggling, who are in need of further diagnostic assessment, and who might be in need of immediate proactive interventions. The BVSD K-5 Universal Math Screeners are also designed with the intention of informing schools of their programmatic strengths and weaknesses.

BVSD can now say that we have universal screeners in place for our elementary mathematics RtI program. The success of this project is due to the dedicated efforts of all of the elementary teachers who administered the assessments and were persistent in their efforts to enter the data into our newly developed data collection system housed at [www.bvsd.forefrontmath.com](http://www.bvsd.forefrontmath.com).

We want to send a huge thank you out to all of you who persisted through the project as we cleaned up the bugs in our data collection system. It was a trial by fire for the new site and we know that those who were the first to attempt to use the site experienced some major frustrations as we encountered issues that we had not anticipated. We hope that you will return to the site soon to view the reporting tools if you have not already.

Please feel free to send any questions, comments or suggestions to [david.woodward@bvsd.org](mailto:david.woodward@bvsd.org). We will be working hard to further improve the system for the administration of the screeners next fall.



## Mathematics Department Professional Development offerings!

**Sign Up NOW In AVATAR** Questions? Contact Cris Palmer @ [cris.palmer@bvsd.org](mailto:cris.palmer@bvsd.org).

<p><b>Galileo Level 2 Data Training: Getting started with Galileo Reports</b>                      Dates: 1/23, 4/11                      Time: 4:30 – 6:00,                      Location: Platt MS, Computer Lab Room #409                      CDE Contact Hours: 1.5</p>	<p><b>Galileo Level 3 Data Training: Keeping Up with Galileo Reports</b>                      Dates: 10/12, 2/23, 5/8                      Time: 4:30 – 6:00,                      Location: Platt MS, Computer Lab Room #409                      CDE Contact Hours 1.5</p>	<p><b>Elementary Math – Algebra and Patterning</b>                      Dates: 2/13, 3/5, 3/12, 3/19, 4/2, 4/9                      Times: 4:00 – 6:30,                      Location: Birch Elementary                      Salary Credit: 1,                      CDE Contact Hours: 20</p>
<p><b>I Have to Teach What? Fractions in the common core grades 3-5</b>                      Dates: 4/4, 4/11, 4/18                      Time: 4:00 - 6:30,                      Location: Pioneer Elementary                      Salary Credit: .5,                      CDE Contact Hours: 7.5</p>	<p><b>CMP 1</b>                      Dates: 1/9, 2/6, 3/12, 4/9,                      Time: 4:00-6:00                      Location Ed Center                      CDE Contact Hours: 8                      Salary Credit: 0.5  <b>CMP 2</b>                      Dates: 1/23, 2/27, 3/19, 4/23,                      Time: 4:00-6:00                      Location Ed Center                      CDE Contact Hours: 8                      Salary Credit: 0.5</p>	<p><b>Transitioning to the New Curriculum Essentials and Instructional Practices Training</b>  <b>Level 2:</b> Dates: 12/7, 4:30-6:30, 2/6, 4:00-6:00, 4/26, 4:00-6:00                      CDE Contact Hours: 2  <b>Level 3:</b> Dates: 12/13, 12:00-3:00 1/19, 8:00-11:00 4/13, 12:00-3:00 5/16, 9:00-12:00                      CDE Contact Hours: 3  <b>Level 3 Full Day:</b> 6/6, 8:00-3:00                      CDE Contact Hours 8</p>



# Instructional Strategies That Work

— By: Daniel Greenberg, Math Instructional Coach & Bertha Orona, Secondary Math Specialist

Think back to a time when you gave your students a test and were dismayed at the results. Other than a few exceptions, you expected better. “What went wrong?” we ask ourselves. We’ve all been there, but what do we do when we find ourselves in one of the most distressing moments in our profession?

This is what the teachers of the Academic Support Class asked themselves at a recent Professional Development. The conversation began with dismayed looks, heavy sighs and teachers shaking their heads at student results. Soon, everyone realized that they were all in the same boat, and a productive conversation about student work emerged.

Teachers asked each other, “What was Johnny thinking?” or “Why did Jasmin use that strategy?” As the PLC took hard looks at student work the answers became more apparent. Teachers could see slivers of understanding hidden within wildly incorrect responses. The discussions that followed prompted the cohort

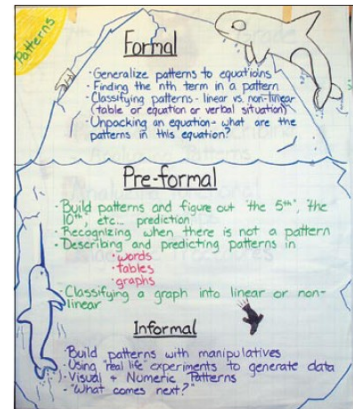
to look for clues about what their students did know and could do, and why students veered off in the wrong direction. Finally, student misconceptions turned into teachable moments and lesson plans.

The impact and value of looking at student work, not just for correct or incorrect responses, but for clues and insight into student thinking, was our greatest take away. These insights are what lead us to our next instructional steps. Teachers began considering where student misconceptions could lie and how far back they needed to take their students so they could provide strategies and tools that would result in, if not perfect, at least reasonable, solutions to a question such as “What is 60% of 30?”

No longer do we want to look at and think of student work as either “right or wrong,” but as “What happened here?” This question leads us to answering with responses, interventions and tools we can provide students so they can have new opportunities to learn. After we ask our-

selves, “What happened here?” we are more likely to consider the type of scaffolding our students need from us to be successful with a particular topic or skill. This can include various strategies such as double number lines, fraction strips or ratio tables that allow students to solve challenging problems in a variety of ways when the traditional algorithm does not resonate.

No longer is our lens focused on the answer, but rather the process. Diagnosing a student’s process or strategy gives light to their mathematical understanding and it is their understanding that we use to drive our next instructional steps. We can better understand where to begin, which misconceptions to debunk and how to reteach a student in a manner that will engage rather than simply repeat a lesson they did not grasp the first time.



For more information, visit the article “Beneath the Tip of the Iceberg: Using Representations to Support Student Understanding” from the September 2008 edition of *Teaching Mathematics in the Middle School*.

Find the article here:

<http://www.bvsvd.org/curriculum/math/educators/pages/default.aspx>

## Coach’s Corner—Get to know our Math Instructional Coaches!

### This month’s featured coach: Lauren Rubini

Lauren Rubini is in her 7<sup>th</sup> year as a math coach for BVSD. She is currently at Columbine and University Hill Elementaries. Lauren enjoys teaching the Add+Vantage Math Recovery (AVMR) classes. She believes that the

AVMR training she received 8 years ago was the most beneficial professional development she had ever received around math and transformed her instructional approach and ability to determine student understanding around math. She

truly enjoys hearing about the ways teachers are learning and teaching math in different ways than they ever thought possible.



## Seasonal Lesson: Gingerbread Glyphs!

— By: Chris Henriksen, Math Instructional Coach

Glyphs are pictorial forms of data, where alterations to the glyph are meant to indicate something about the creator of the glyph. Use glyphs to collect and organize data about students in the class. Use data analysis activities to analyze and graph class data results. You can create groups using the attributes from the glyph. Feel free to add more categories to your glyphs.

### Gingerbread Man Glyph

If you are a boy, color the gingerbread man's button blue.

If you have no pets, color the nose red.

If you have a cat or cats, color the nose green.

If you have a dog or dogs, color the nose purple.

If you have fish, color the nose yellow.

If you have some other type of pet, color the nose orange.

If your favorite dessert is ice-cream, color the mouth red.

If your favorite dessert is cake, color the mouth pink.

If your favorite dessert is something else, color the mouth blue.



[Www.mathwire.com/glyphs/glyphs.html](http://www.mathwire.com/glyphs/glyphs.html)

### Read more:

Education & First Day of School Activities | eHow.com [http://www.ehow.com/way\\_5488631\\_education-first-day-school-activities.html#ixzz1dVpmVW62](http://www.ehow.com/way_5488631_education-first-day-school-activities.html#ixzz1dVpmVW62)

Color your gingerbread man's eyes the same color as your eyes.

## Tips for Families: Help Your Child Succeed In and Enjoy Mathematics

— By: Anne Schwarz, Elementary Math Instructional Specialist

### Be positive!

Have a positive attitude about mathematics. Make mathematical interactions with your child enjoyable. Express confidence in your child's ability to succeed in math. Acknowledge the fact that mathematic can be challenging at times but encourage your child to persevere and work hard to be successful.

### Connect mathematics to your daily life!

Talk about ways you use mathematics daily in your life, job, and family. Point out math situations to your child and encourage your child's math curiosity. "Talk math", discover number relationships, search for patterns, and look for math in your environment.

### Make mathematics fun!

Solve puzzles, play board games, and ponder brain teasers with your child that involve math. Check out math literature and number concept books from the library. Point out the mathematics involved and discuss strategies your child uses.

### Support homework, don't do it!

Encourage your child to explain the math homework assignment. Ask questions to help your child to make sense of the mathematics. Encourage your child to explore and explain processes and solutions. If your child gets stuck, ask questions that promote problem solving. Help your child make connections and point out relationships.

### Stay informed!

Ask about math. Read your child's grade level mathematics curriculum. Attend math nights. Know about your child's homework. Talk to your child's teacher about the mathematics program at your child's school.

### Have high expectations!

Communicate high expectations. Make sure your child is getting the same opportunities in mathematics as everyone else. Your attitude and expectations are crucial to influencing the future mathematical opportunities for your child.