

WORD WALL IDEAS

MATHEMATICS

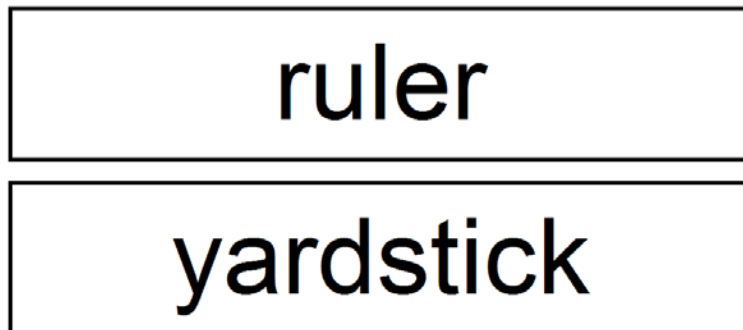
BY DR. DEBORAH WAHLSTROM

I had the pleasure of working with some elementary school teachers last week and one of the things they were interested in learning more about was word walls, specifically additional ways of how to use them with mathematics. The teachers were familiar with basic word wall strategies including the use of a flashlight (to put the light on words) and a fly swatter (to highlight words). These teachers were also familiar with tested favorites like bingo, I Have Who Has, and Mind Reader, but they really wanted other ideas. Thus, the purpose of this post is to identify additional ways to use word walls with mathematics content.

As you are thinking about using word walls remember that those for the content area are the vocabulary words you use to help students understand important concepts. That means your word walls can be the basis for vocabulary games and activities – the more the better.

IDEAS TO GET YOU STARTED

1. **Create content-area word walls.** Choose words that go with the specific concepts you are teaching. There are [websites](#) that have easy tools for making word wall cards such as the two shown below.



Here is one [website](#) that gives you a very quick way to make basic word wall words. Go to this website and do one of two things: (1) Type the words for which you want cards or (2) Copy and paste a list of words into the form box. Click SUBMIT – and presto – the cards are DONE. Did I mention that this is a fast way to get a set of word wall words?

If you need ideas for words related to a concept, you may want to check the math.com website. This site has many [math lists](#) that provide lists related to a significant number of mathematics concepts. You'll find lists for such things [number notation](#), [polygon properties](#), [addition tables](#), and more.

2. **When developing word walls for the content areas, cluster words that go together.** For example, instead of just listing words for a mathematics unit you might cluster words putting all those related to addition together, all those related to subtraction together, all those related to multiplication together, and all those related to division together. The visual below shows how I clustered words that go together. I also like using different colors for word clusters.

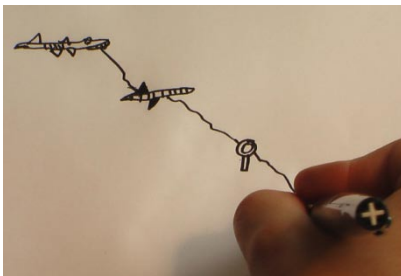
MATH OPERATIONS

Addition		Subtraction		Multiplication	
+	Increased by	-	minus	X	factor
add	more than	left	greater than	product	product
together	combined	less than	less than	times	*
total	together	total	more than	multiply	Multiplied by
In all	total of	In all	how many less	<div style="text-align: center;">Division</div> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">\div</div> <div style="border: 1px solid black; padding: 2px;">out of</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">quotient</div> <div style="border: 1px solid black; padding: 2px;">ratio of</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">per</div> <div style="border: 1px solid black; padding: 2px;">percent</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">Divide equally</div> <div style="border: 1px solid black; padding: 2px;">divide</div> </div>	
altogether	added to	altogether	decreased by		
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<div style="text-align: center;">Equal</div> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">=</div> <div style="border: 1px solid black; padding: 2px;">same</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">same as</div> <div style="border: 1px solid black; padding: 2px;">the same as</div> </div> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">Is equal to</div> <div style="border: 1px solid black; padding: 2px;">equals</div> </div>		from	fewer than		

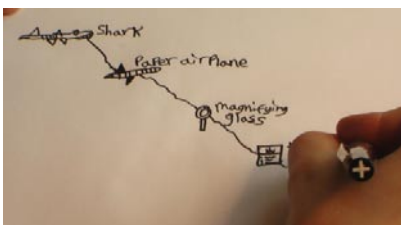
Here is what is good about having words clustered like this. When the information is on the wall, you can readily see it and consistently use the different words with students. For example, there are so many words to use when you're working with addition. The wall words remind you that you can say, "How many total?" "How many in all?" "How many altogether?" "If I combine these, how many will I have?"

3. **Play forced-association games with the content-area words.** Here's how to do it with the word wall. Get two students. Ask each to pick a word from the word wall. Then, as a class or in pairs, have students tell how the two words go together. Have students share their answers. This is a terrific way to have students think about the relationships and connections between words.

4. **Give students many chances to say the words.** Don't be shy about pointing to words on the word walls and have students pronounce them with you. Point to the words in any order and have students say them aloud.
5. **Have students create a vocabulary card for each content word.** I recommend an adaptation of Frayer's model; I've included an example for a [scattergram](#) in my blog. Check it out to see how powerful this type of vocabulary card can be. You can also use a simpler version of a vocabulary card. For those of you who know me, you also know that I prefer vocabulary cards to words being written in a notebook. The reason for this is that when students have a set of their own cards, they also have their own word wall set with which you can use for activities and games with words. There is more flexibility in using cards than pages in a notebook.
6. **Have students write sentences.** Call out a word from the content-area word wall and have students write a sentence using the word. This could be a very quick exit slip or warm-up activity.
7. **Give students a definition or description of a word.** Have students provide the word from the word wall.
8. **Have students do a quick visual representation of the words.** I call this one **link doodles**. Here's what you do. Before doing this activity with students, simply determine the words you want the students to learn from the unit. The words can represent definitions, concepts, characters in a story, an object from a story, an item that represents a key event – anything goes. Depending on the grade level of the students, you can use anywhere from seven to fifteen words.



To use link doodles with students simply call out words related to concepts and have the students sketch, doodle, or draw their picture of the word until you call out the next word. Students connect each of their doodles with a line, making a simple link – thus the name Link Doodles. (Give students 30 seconds or so to sketch a word before you call the next one.)



After you've called all the words, have students label their doodles. They should do this on their own without trying to look at the word wall.

Then, ask students, in unison, to call out the words in their chain. Once that is done, have them double check the spelling of their words to make sure they are accurate.

Students can go back to the Word Wall to check their spellings.



Now, give students time to talk, with a partner, about what the words mean. You can have them talk about the words in relation to the book or concept (e.g., math concept) students are studying.

Have the students use the doodles to write a summary or a sentence or two about the concept or topic.

This activity is good for a warm up or a quick review. If students have trouble making a doodle of a concept, it's likely because they don't yet have the concept in their mind. This will help build those concepts. I used words from the book, *Miss Nelson is Missing*, for this example, but this works so well with math words. Think of the possibilities: shapes, angles, equations, math operations, fractions, etc. Students enjoy this technique – and so will you.

9. **Have students “redo” the word wall.** Once you have a number of words from the word wall, take them all down, mix them all up, and ask students to put them back up in an organized manner. Students will have to think about how the words were clustered together. Students can also do this with their vocabulary cards of the same words.
10. **Assess group progress toward learning your content words with five-star words.** Choose a word you want to test. Point to the word on the word wall.



Now, have pairs of students tell each other what they think the word means. If ALL students get the word right, the word on the word wall gets a star – as shown below. (Simply use a magic marker to give the star.)



You know how important it is to revisit words again and again during a unit of study. Then next time you work with words, give students a chance again to show if they know the meaning of the word. If the whole class knows the word again, another star goes onto the word wall card. At some point, you'll reach five stars on a word wall card. That means your entire group of students is doing well with the meaning of the word – and you and your students can have a level of confidence that they know the word and its meaning.



High fives all around for the words we know. There will likely be words that do not have five stars. Those are words that need additional reinforcement for the content area. When you're playing games and working with the words, focus on words for which your class of students need the most help. This technique will help you focus your efforts on helping students learn the terms they struggle with.

11. **Create a concept map with the word.** This goes beyond just putting the words on a bulletin board. With this technique, you actually build a concept map in which you use yarn or string to show connections between words.
12. **Make other huge graphic organizers.** In mathematics, you could sort the words on the wall into two categories on a T Chart – whole number words/fraction words, money amounts under five dollars/money amounts over five dollars, regular polygons/irregular polygons, etc.

EXAMPLES ABOUND

It's also good to see some of the terrific things other teachers have done in relation to using mathematics word walls in the classroom. I've compiled the following list – just to get the ideas rolling. You'll see actual examples of Mathematics Word Walls for most of these links.

<http://susanmuir.blogspot.com/2009/09/math-word-walls.html>

http://susanmuir.blogspot.com/2009_10_01_archive.html

Illustrative Word Walls

<http://schools.nyc.gov/documents/elementarymath/Differentiation/Environment/vocabulary.htm>

Word Wall Cards – Shapes

<http://www.abcteach.com/free/members/14748.pdf>

Word Wall Cards – Opposites

<http://www.abcteach.com/free/members/13590.pdf>

Word Wall Cards – Geometry

<http://www.abcteach.com/free/members/14155.pdf>

Word Wall Cards – Telling Time

<http://www.abcteach.com/free/members/14375.pdf>

Math Words That Talk – Can be used with SmartBoards

http://membres.distributel.net/~redeemed7/wordwall/wordwall_main.htm

Five Ideas for Using Word Walls. Try these ideas for using word walls in your own classroom.

http://www.educationworld.com/a_lesson/lesson/lesson328.shtml

Jordan School District makes math vocabulary words readily available for its teachers. Click the link to see an example.

<http://departments.jordandistrict.org/curriculum/mathematics/elementary/jordan/wordwalls/grade3.pdf>

Elementary Resource Page for Math – Jordan School District. Click this link for their lists of vocabulary words by content area and grade level. (Don't forget to check their list against the one you need for your own mathematics program.)

<http://departments.jordandistrict.org/curriculum/mathematics/elementary/vocabularyhome.html>

Word Wall Words – Numbers Zero to Trillion

<http://www.havefunteaching.com/tools/word-walls/number-words.pdf>

Northern Lights School Division – Math Word Wall Words by Grade Level. (Go to the NUMERACY tab. Check the math section at the bottom of the page for the grade-level words.) As always, check the words against your own mathematics program.

<http://www.nlsd113.com/teacherresources/>

Word Wall Words – Words and Numbers Zero to Trillion – can also be cut and used as a sort.
<http://www.havefunteaching.com/tools/word-walls/numbers.pdf>

Word Wall Words – Plane Geometric Shapes
<http://www.havefunteaching.com/tools/word-walls/plane-shapes.pdf>

Word Wall Words – Solid Geometric Figures
<http://www.havefunteaching.com/tools/word-walls/solid-figures.pdf>

Word Wall Words – Colors (and nicely done, I might add)
<http://www.havefunteaching.com/tools/word-walls/colors.pdf>

Word Wall Words – From Weapons of Math Instruction Blog – an example of a high-school word wall
<http://mrfollett.wordpress.com/tag/word-wall/>

FREQUENTLY ASKED QUESTIONS

Now you've seen some examples and you might still have some questions. In this section I'll answer a few questions related to the use of word walls in the mathematics classroom.

1. **Why bother with word walls when teaching mathematics?** Word walls provide a visual reference to students – the words related to the concepts they are learning are always in front of them.
2. **Should I alphabetize the words on the wall for math?** Don't even start alphabetizing these words. It's much better to organize the words by clustering things that go together. The purpose of a word wall in the content area is to help build concepts – and that is not easily done when the words are alphabetized. (Of course if you want students to alphabetize the words as an activity, that is always appropriate.)
3. **Who should create all of the words?** Don't leave students out of the mix. You can make some of the words, but students can also make some. Have students create visual designs to go with the words – then post the words on the wall and refer to them often. Students can also add words that aren't part of the core vocabulary list to the wall.
4. **Do you put all of the words on the wall at once?** Don't feel a need to get all of the words done before a unit. It's fine to put the words up at the time you introduce them to students.
5. **How do you know which words to put on the word wall?** Use your professional judgment and choose words that students need in order to understand important concepts. Check your district curriculum to see if there is an aligned vocabulary list for the standards your students are learning. [Check words from released test items](#) to refine your vocabulary list.

6. **How do you make a word wall interactive?** Just think of things for the students to do with the cards. The idea is for students to interact with the words in some way. Have students resort the word wall words. Have them pull a word that they will illustrate and then return to the wall. Have students pull two or more words at random and then explain the connection between the words. Have students identify which words are hard/easy for them to learn. Use the words to play popular games like Jeopardy, Who Wants to be a Millionaire, Hangman, and Bingo.
7. **Aren't word walls really for elementary students?** Word walls are certainly used with elementary students, but they are also effective with secondary school students. That is because word walls are a tool for learning core content vocabulary – and every subject at every grade level has a core vocabulary that students must learn in order to understand concepts.
8. **Do I really need to deal with vocabulary?** Only if you want students to learn the concepts you want them to learn.