

Speaking the Language of Mathematics

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Grades 2-5

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“Language is not only a tool for communicating, but also a tool for thinking. Every mathematics teacher is a language teacher — particularly the academic language used to formulate and communicate mathematics learning.”

NCSM Position Statement on Addressing the Needs of English Language Learners

Tips for Strengthening Math Vocabulary

- Define words using familiar language
- Model word meanings using examples, synonyms, and visuals
- Provide multiple exposures to key words
- Give opportunities to interact with words

Classroom Activities to Strengthen Math Vocabulary

Word Webs

Ask students to web words that are connected to a math concept (e.g., probability, measurement, polygons, or bar graphs). Have them share their words and do an informal review of word meanings.

Sort and Label

Provide students with a set of words (e.g., yard, foot, quart, ounce, scale, mile, ruler, pounds, measuring cup, pint, thermometer, degree, inch, ton). Have them think about the math meanings of the words and then work in teams to sort the words into groups based on their meanings in math. Ask students to title or label each group to show why the words belong together. Have them share their sorting with the class.

Highlight and Discuss

Explain how you can tell whether two fractions are equivalent?

Before beginning a task have students highlight some words that they think are important and talk about them.

Writing Math Riddles

Have students work with partners to write riddles about important math vocabulary.

I am a polygon.

I have 4 sides.

Only one pair of my opposite sides is parallel.

What am I? _____

What's My Word?

- Select a word card.
- Talk about the word (without using the word) until your partner gets it.

Mystery Word

Tape a mystery word on each student's back.

Students walk around the room and listen to clues from classmates to try to figure out their mystery word.

Math Talk Charts

As words are introduced record the word and a picture, talking about its meaning. Make connections between words on the Math Talk Chart or refer to it during class discussions.

Vocabulary Logs

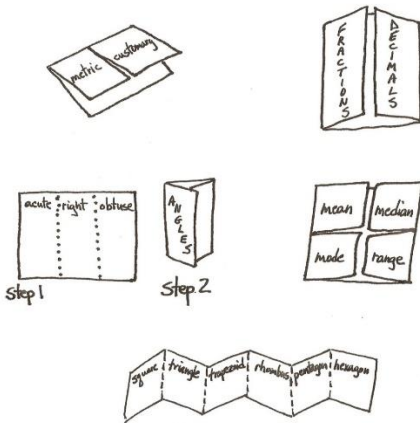
Have students record new words in a vocabulary log including the meaning of the word (in their own words) and a picture or example whenever possible.

Build a Math Word Wall

Archive math words on a word wall in your classroom. Play class word games to provide students with opportunities to use the words from the wall (ie. Find 2 words that go together and tell why. Find the word that matches my clue.).

Create Folded Books

Have students show what they know about words/concepts through folded books. Encourage them to show what they know using words, pictures, numbers, and/or examples.



Word Boxes

Have students fold a paper in fourths and record a math word/term (e.g. cone, denominator, or tenth) in the center. Ask students to share their understanding of the word by following different prompts for each of the four boxes that might include: a definition, an illustration, an example, and related words.

Math Vocabulary Bingo

Give each student a blank bingo card. Provide students with a list of words and ask students to write a word in each square (wherever they want on their bingo card). After students have completed their bingo cards, it's time to play! Read a definition and have students place a chip on the correct word on their card. Students call bingo when they have a row horizontally, diagonally, or vertically.

Speaking About Cards

Display five playing cards. Ask students to answer questions like the following:

- What *fraction* of the cards are red?
- What is the *product* of the cards that are *odd* numbers?
- What is the *sum* of cards that are *prime* numbers?

- What is the *difference* between the cards with the *greatest* and *least values*?

For more on Math Vocabulary, see the following resources:

Math in Practice (Heinemann, 2016)

This series is filled with lesson ideas, instructional strategies, sample teacher questions, practice tasks, and many online printable resources to make teaching K-5 math more meaningful and more fun. There is a book for each grade level K-5 that contains a wealth of grade-specific activities, including a list of math vocabulary related to each module's math topic. The *Guide for Teachers* is filled with instructional strategies including many vocabulary tasks in Chapter 4 (Talk About It - Write About It). The series includes an *Administrator's Guide* for math coaches and district math leaders. Visit the website at www.mathinpractice.com to view the materials. *Math in Practice* is PD in a book - like having a math coach for every teacher!

The Math Process Standards Series

Each book in this series is a practical guide for helping students refine their skills in the highlighted math process (problem solving, communication, reasoning, representations, connections). You will find specific teaching strategies and tips to help all students strengthen their skills. Included with each book is a CD filled with teacher tools and customizable student activities to allow you to change names, data, or spacing for a quick way to differentiate instruction within your classroom. *Introduction to Communication* contains specific vocabulary and writing tasks.

Introduction to Problem Solving

Introduction to Communication

Introduction to Representation

Introduction to Reasoning and Proof

Introduction to Connections

All books in this series are available for Grades PK-2, Grades 3-5, and Grades 6-8.

Putting the Practices into Action - Implementing the Common Core Standards for Mathematical Practice K-8 with John SanGiovanni (Heinemann)

The Standards for Math Practice are the heart and soul of the Common Core State Standards. This book explains each standard in teacher-friendly terms and highlights practical activities to make the standards come alive in classrooms. It explores math vocabulary as it discusses SMP6 – communicating with precision. The book contains PLC study group questions and online resources.

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For information on resources or workshops by Sue O'Connell, visit her website at www.qualityteacherdevelopment.com.

For more information on the Math in Practice series, visit www.mathinpractice.com.