Back to School Family Guide

GRADE 8

ABOUT THIS GUIDE

Families want to know more about what their kids are learning in school, so they can support them at home. In the early grades, they are usually able to offer help if kids get stuck. As students get older, the content gets more challenging. Suddenly, parents and caregivers can feel like they don't have much help to offer. But that's not the case. Research confirms that families still have a big role to play in helping students learn. It's just a different role.

How can families be supportive? In addition to providing encouragement, a study of more than 50,000 students found that relating what middle and high school kids are learning in school to their future life goals is one of the most effective ways families can help.[i] What doesn't work? Trying to be directly involved with schoolwork. It can feel to middle and high school students like you're interfering or even confusing them. And this IS the time to encourage students to take more responsibility and be more independent; helping kids take charge of their learning is important.

This guide was developed so students and their families can understand the most important literacy and math content and skills students should learn at each grade level. Of course, students will be learning in other academic subjects too, but literacy and math are the important building blocks for everything else.

[i]Harvard Graduate School of Education (2009). Hill: Parents need to link schoolwork to future goals. http://www.gse.harvard.edu/news/09/05/hill-parents-need-link-schoolwork-future-goals.

THIS GUIDE INCLUDES

- **What 8th Graders Are Learning** – What experts say is the most important content (knowledge and skills) for students to learn in literacy and math by the end of eigth grade.
- **Talking About Literacy and Math with Your 8th Grader** – Ways families can talk with their 8th grader about what they are learning in school, find related resources, and connect learnings to the world around them.
- **Education Words** – Sometimes, you'll hear educators use a word that has a specific meaning in schools. Those words are bolded. Understanding those terms will help you speak the same language.
- **Tips for Talking with Teachers** – How you and your child's teachers can work together to help students grow.
- **Connecting Classrooms to Careers** – Helping your middle schooler see the connection between classroom learning and their future.
- **Tools and Resources to Help** – We've chosen a few internet resources that best match each grade's content.

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LITERACY

WHAT 8TH GRADERS ARE LEARNING

Throughout the school year, 8th grade students will spend the most time working on the following topics. They should understand them well by the end of the year.

Reading, writing, speaking, and listening:

- ◯ Reading grade level texts smoothly and with expression, at a fluency rate of around 175 words per minute by the end of the year.
- ◯ Asking and answering questions about stories and texts read independently. Summarizing what happened in what was read; analyzing how a text makes connections or distinctions between ideas, characters, or events; and citing specific evidence to show how they know. Questioning the author's or speaker's assumptions. Determining the accuracy of statements they have heard or read.
- ◯ Citing the evidence that most strongly supports an analysis of what is explicitly stated and/or implied from a book, article, poem, or play.
- ◯ Analyzing where materials on the same topic disagree on matters of fact, interpretation, or point of view.
- ◯ Determining or clarifying the meaning of unknown words, **synonyms**, **antonyms**, and **figures of speech** (irony, puns). Determining or clarifying the meaning of words with similar but not identical meaning (for example, "bullheaded," "willful," "firm," "persistent," "resolute") based on how they are used in context.
- ◯ Making and justifying a claim or argument in writing or discussion. Supporting claims with precise and relevant evidence from credible sources. Demonstrating a thorough understanding of the topic or text.
- ◯ Showing something new they have learned from a text or about a topic. This can be in any form – speaking and conversation, letters, journals, stories, diagrams, reports, or essays – and should include sufficient additional detail that fits the form they have chosen.
- ◯ Writing in response to text, including an introduction and **thesis statement**; examples that are linked, logically ordered, and grouped; a conclusion; and mostly accurate spelling, capitalization, and punctuation.

TALKING ABOUT LITERACY WITH YOUR 8TH GRADER

- Encourage your 8th grader to choose a book they want to read on their own each day. Reading lots of books over time is more important than the type of text. Let your 8th grader pick based on their interests and what makes them excited to read.
- Pick a topic to learn about together. Read books, look online, or do short research projects together. Ask what they learned in their reading. Have them present or share with you, with other friends, or with family members.
- Encourage regular writing: keeping a journal, writing letters or emails, and/or taking notes on what they are learning. Encourage your 8th grader to write to you, and then write back to them.
- Listen to podcasts together, or encourage your 8th grader to listen to podcasts of their choice and tell you about what they cover. There is a wide range of podcasts available. Consider the following sampling for a range of topics and types: "But Why: A Podcast for Curious Kids;" "Code Switch;" and "The Unexplainable Disappearance of Mars Patel."

MATHEMATICS

WHAT 8TH GRADERS ARE LEARNING

Throughout the school year, 8th grade students will spend the most time working on the following topics. They should understand them well by the end of the year.

- Applying properties of **integer exponents** to generate equivalent expressions. Using **square roots** to represent solutions to equations.
- Solving **linear equations** in one variable. For example, $(-x + 5(x + 1⁄3) = 2x - 8)$ and in word problems like, "You rent a bike for $10 for the 1st hour, and each additional hour is $5.50. What is the cost of renting the bike for 6 hours?"
- Analyzing and solving systems of **linear equations** ($x + 6y = -1$ and $2x - 2y = 12$), emphasizing the real-world reasons these equations were created.
- Understanding **functions** (rules that assign to each input exactly one output); analyzing **functions** represented in different ways (for example, table, graph, verbal description, equation); interpreting equations for linear and nonlinear **functions** by graphing; and using **functions** to solve real-world problems. (For example, analyze and graph a company's profit over a set number of months. If in one month a company profited $1,200, what is the slope or change when, after five months, the company profits $5,800?)
- Applying the **Pythagorean Theorem** to solve real-world problems.

TALKING ABOUT MATH WITH YOUR 8TH GRADER

- Encourage your 8th grader to talk to you about the math they feel they can successfully do. What new concepts are they are learning? Where do they feel they need additional challenge and/or support?
- Help your 8th grader find resources that they feel are relevant and helpful. Ask them to talk to their teachers about the resources, extensions, and practice activities that they find.
- Have your child name topics of study that are directly relevant to their world. For example, from Grade 8 math, can they describe the relationship between quantities in the world around them (such as comparing water levels in a collection of cylinders to the number of pebbles placed in each cylinder)?
- Encourage your 8th grader to think about jobs they might like to have when they are an adult. Help them learn about how math is a part of these jobs.

EDUCATION WORDS

Sometimes, you'll hear educators use a word that has a specific meaning in schools. Understanding those terms will help you speak the same language!

Antonyms
Antonyms are words that mean the opposite. "Big" and "little" are antonyms.

Exponent
The exponent of a number indicates how many times to use that number in multiplication. It is written as a small number to the right and above the base number. In this example, $82 = 8 \times 8 = 64$, the exponent "2" says to use the 8 two times in multiplication.

Figures of speech
A figure of speech is a word or phrase meant to create meaning that is separate from the literal definition. A figure of speech might be used to describe, compare, exaggerate, or emphasize something to convey meaning.

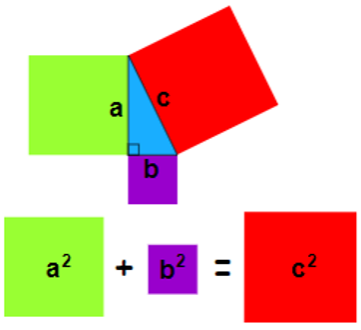
Function
A relationship where each input has a single output.

x (input)	y (output)
3	5
1	1
-2	-5
-3	-7

Integer
An **integer** is a number with no fractional part (no decimals). This would include the positive and negative counting numbers and zero (-3,-2, -1, 0, 1, 2, 3).

Linear equation
An equation that makes a straight line when it is graphed.

Pythagorean Theorem
The Pythagorean Theorem is a2 + b2 = c2, as illustrated below.



EDUCATION WORDS (continued)

Square root
A square root of a number is a value that, when multiplied by itself, gives the number. The square root symbol is √, which always means the positive square root. For example, 4 × 4 = 16, so a square root of 16 is 4; and √36 = 6 because 6 x 6 = 36.

Reading level
Teachers often determine the grade level at which a student is reading. But sometimes, students are then limited to reading texts at that level (typically a letter or number). This practice is one to be wary of, particularly if students are limited to reading only texts that are below the grade level goals.

Synonyms
Synonyms are words that mean the same thing. "Big" and "enormous" are synonyms.

Thesis statement
A thesis statement is one or two sentences that summarize the paper's main point, main idea, or main message.

TIPS FOR TALKING WITH TEACHERS

Literacy
- What are my 8th grader's strengths, and how do you use them in instruction?
- How do you select texts? Will my 8th grader see characters and topics that represent them, their background, and their identity? Will they learn new perspectives and about new and diverse characters through the texts you use in the classroom?
- What topics are 8th graders learning about through reading? What should my 8th grader be able to understand, write, and talk about as a result of what they have read? Topics in history? Topics in science?
- What opportunities does my 8th grader have to choose books that interest them? Are they limited to a specific **reading level**? Do they have any reading challenges, either with grade level text or with texts that they read on their own?
- Is my 8th grader able to write in ways that show you they understand what they are reading and learning? Are they able to use evidence from the text, present their responses in detail, and write with sufficient depth? Do they use conventions (spelling, punctuation, capitalization) and grammar rules appropriately? If not, what challenges are they facing? How can I help?
- Is my 8th grader able to speak and listen in class discussions and conversations in ways that show you they understand what they are reading and learning? Do they use evidence from the text, present their responses in detail, and speak with sufficient depth? If not, what challenges are they facing?
- How can I support and encourage my 8th grader to build a strong relationship with you and take age-appropriate responsibility for their own learning?

TIPS FOR TALKING WITH TEACHERS (continued)

Math

- Encourage your 8th grader to talk to you about the math they feel they can successfully do. What new concepts are they are learning? Where do they feel they need additional challenge and/or support?
- Help your 8th grader find resources that they feel are relevant and helpful. Ask them to talk to their teachers about the resources, extensions, and practice activities that they find.
- Have your child name topics of study that are directly relevant to their world. For example, from Grade 8 math, can they describe the relationship between quantities in the world around them (such as comparing water levels in a collection of cylinders to the number of flowers placed in each cylinder)?
- Encourage your 8th grader to think about jobs they might like to have when they are an adult. Help them learn about how math is a part of these jobs.

CONNECTING CLASSROOMS TO CAREERS

Helping middle schoolers see how what they are learning in school connects to their future is one of the best ways that families can support their kids. In addition to seeking out resources at school and in your community (community colleges are a great place to look), here are a few more ways to get started:

- Help your middle schooler think about what jobs they might like to have, and then learn more about the education and training they need for a career in that field.
  https://www.careerzone.ny.gov/views/careerzone/stem/index.jsf
- Does your middle schooler like building and fixing things? Helping people? Learn more about how interests could lead to a career.
  https://www.bls.gov/k12/students/careers/career-exploration.htm
- Have your middle schooler visit/"shadow" someone who works in a career in which they are interested. Here are some virtual site visits to get started.
  https://www.nebraskacareerclusters.com/
- Has your middle schooler expressed interest in a career in the military? Explore military careers here.
  https://www.asvabprogram.com/
- Find a pathway to success: A guide to help students learn how to translate their interests into one of 16 career clusters.
  https://ed.sc.gov/instruction/career-and-technical-education/career-guidance/career-cluster-guides/
- Learn the importance of math for careers and jobs: What teens need to know and how parents can help.
  https://www.niu.edu/mathmatters/careers-jobs/index.shtml
- Are there colleges your middle schooler has expressed interest in attending? Together, check out their admissions requirements, including their course-taking requirements. Make sure your student is prepared for (mostly in middle school) and taking (mostly in high school) the classes they need not just to graduate from high school but to be eligible for college admission.

TOOLS AND RESOURCES TO HELP

Literacy

Sources of fiction text for reading and writing:

- 36 Great Short Stories to Teach in Middle School
  https://www.weareteachers.com/best-short-stories-for-middle-schoolers/
- 24 Must Share Poems for Middle and High School
  https://www.weareteachers.com/24-must-share-poems-for-middle-school-and-high-school/

Sources of non-fiction text for reading, writing, and research:

- *The New York Times* Learning Network
  https://www.nytimes.com/section/learning
- Dogo News
  https://www.dogonews.com/grade/grades-6-8
- *PBS NewsHour* Extra: Student Voices
  https://www.pbs.org/newshour/extra/student-voices/

More tools:

- Text sets to learn about any subject
  https://achievethecore.org/content/upload/Text%20Set%20Guidance.pdf
- Passages to help build fluency
  https://achievethecore.org/page/887/fluency-packet-for-the-6-8-grade-band

Math

- Parent roadmap: What should children be learning in 8th Grade? How can families support their learning?
  https://www.cgcs.org/Page/244
- Videos and tutorials to help 8th graders understand and practice using **linear equations** and **functions**
  https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-linear-equations-functions
- Activities and games to help students practice linear **functions**, whole number **exponents**, and other topics in Grade 8 math
  https://teacher.desmos.com/collection/5e72d58a20ae4e061b73b546
- Two activities to engage students with linear **functions**, variables, and equations
  https://achievethecore.org/category/416/mathematics-tasks?&g%5B%5D=8&sort=name
- How much does that pizza really cost? Use slope, y-intercept, and **linear equations** to calculate.
  https://www.mathalicious.com/lessons/domino-effect
- A readiness check to find out how your 8th grader is doing
  https://bealearninghero.org/readiness-check/
- Tasks for real-world math problems, including the volume of cylinders, cones, and spheres and a variety of other math topics at the 8th grade level
  https://tasks.illustrativemathematics.org/