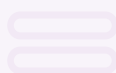


Grade 8

MINNESOTA STANDARDS FAMILY GUIDE

What Your Child Should Know
Activities & Examples of ELA & Math
Tips for Talking with Teachers



great
MN
SCHOOLS



About This Guide

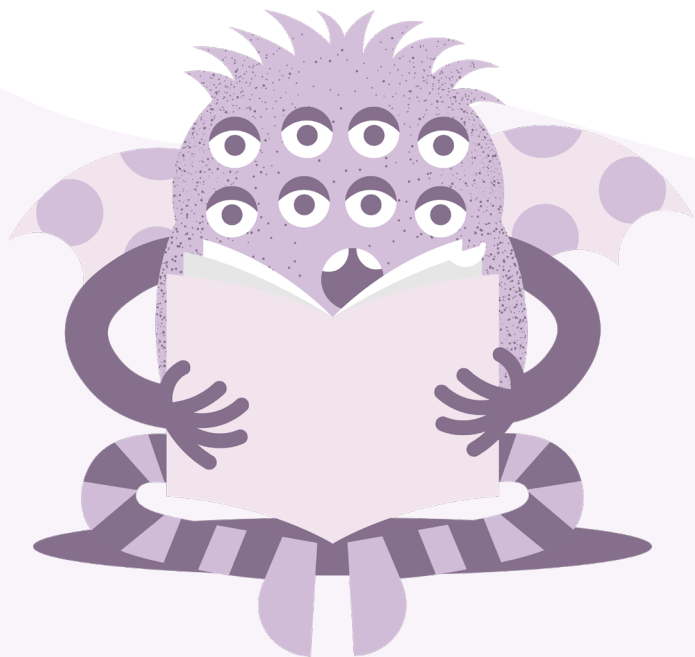


Families want to know what their child is learning in school. They want to advocate for their child and help them succeed in school.

The Minnesota Department of Education decides what every child will learn in school in all subjects. This guide helps you understand those standards in English Language Arts (ELA) & Math. This will help you partner with your child's teachers to support learning during 8th grade.

BEFORE YOU START

Before reviewing this guide, we encourage you to check your student's current grade level at www.bealearninghero.org/readiness-check-mn.





This Guide Includes



**What your child should know & be able to do—
PAGE 4 FOR ELA & PAGE 16 FOR MATH**

The most important content (knowledge & skills) for students to learn by the end of 8th grade



**Examples of ELA & Math—
PAGE 7 FOR ELA & PAGE 18 FOR MATH**

Example work your child should be able to write by the end of 8th grade



**Everyday activities to support learning—
PAGE 14 FOR ELA & PAGE 20 FOR MATH**

Ways you can support your child in learning important content & skills in English Language Arts (ELA) & Math



**Tips for talking with teachers—
PAGE 15 FOR ELA & PAGE 21 FOR MATH**

How you & your child's teacher can work together to help your child grow



**Education words glossary—
PAGE 22**

Definitions of common education words relevant to 8th grade



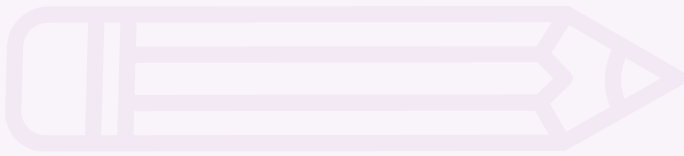
English Language Arts

WHAT YOUR CHILD SHOULD KNOW & BE ABLE TO DO

In 8th grade, students read different detailed texts on the same topic & look at what the writers are saying & how they are saying it. Students ask themselves where the writers agree & disagree. 8th graders check if what the writers say is true. They'll quote parts of the text & summarize proof from the texts to support their ideas. They'll read to learn new words & to learn more about the world. Students should read about half fiction & half nonfiction. Books should have a range of text complexity & teach them about new people, places, & ideas, including the voices of past & present Dakota & Anishinaabe people.

8th graders should write often. They will write short assignments & longer assignments that take many days. Students should know most spelling, grammar, & punctuation rules, & how to use them. They should type easily. They will practice researching, thinking, & rewriting based on feedback from their teacher & classmates. They will write about many topics for different reasons.

To see all 8th grade state standards for ELA see here: education.mn.gov/mde/dse/stds/ela



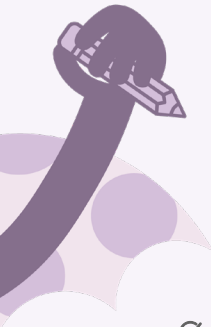
8th graders need to know how to do the things below by the end of the year:

APPLYING LITERACY SKILLS

- ✓ Read texts at a 8th grade level, which is a **Lexile** level 925-1185
- ✓ Read 8th grade texts smoothly, which is 180 words per minute
- ✓ Read with expression which shows they understand the text as they read it
- ✓ Write & rewrite complete essays with correct spelling, grammar, & punctuation. They will avoid using too many words to express their ideas & check for unneeded repetition
- ✓ Use technology to write & work with others & research a topic using trusted sources with different viewpoints
- ✓ **Paraphrase** information in addition to quoting & summarizing
- ✓ Never copy work that is not theirs, which is called **plagiarism**
- ✓ Understand their **digital footprint**, which is the trail of data we each leave on the internet
- ✓ Type about 40 words in one minute. Type at least three pages in one hour



LEARNING ABOUT THE WORLD THROUGH TEXT


- 
- ✔ Ask & answer questions about texts they have read. Compare multiple texts & re-read closely to find specific information to support their understanding. Be able to do the following:
 - Summarize texts without inserting their own opinion
 - Find themes, key points, & main ideas
 - Study how a key person, event, or concept is introduced & how they change
 - Explain how different parts of texts affect the meaning
 - Describe how stories move & how characters respond
 - Study how authors & their viewpoints affect texts
 - Compare fictional stories with historical accounts
 - Question what an author assumes & if there is enough proof that their ideas are true
 - ✔ Find the meaning of new words & **figurative language**, using clues in the text, context, dictionaries, or the root word
 - ✔ Figure out where texts on the same topic disagree in terms of facts, opinions, or points of view
 - ✔ Make & justify a claim or an argument in writing or discussion. Support claims with precise & relevant proof from trusted sources. Show that they understand the topic or the text
 - ✔ Write about a text after reading it. Include an introduction with a simple **thesis statement**, examples in order, & a conclusion
 - ✔ Explain something using their writing. Organize their writing clearly & use specific words that relate to the topic. Use facts & examples from texts to show understanding
 - ✔ Write convincing ideas. Use different ways to convince the reader. Be able to respond to disagreement
 - ✔ Write to create & express themselves (poetry, stories, biographies, myths, & plays). Include conversations that match character viewpoint & context. Use the right structure (e.g., chapters, stanzas, scenes), complex plots, pacing, rhythm, & rhyme to develop mood



8TH GRADE ENGLISH LANGUAGE ARTS EXAMPLES

Below is an example of an 8th grade level text.¹ This text is at a Lexile level of 1100. 8th graders should be able to read this text smoothly & with expression. Afterward, they should be able to tell you what happened in the text & answer the questions below.

IS JURASSIC PARK POSSIBLE? by T.J. Resler



In the Jurassic Park/Jurassic World movies, scientists bring back dinosaurs that have been extinct for at least 65 million years. (Spoiler alert: Bad idea.) Is this purely fiction, or could we actually see a Brachiosaurus, Triceratops or T. rex stomping around a theme park someday? To clone, which means to recreate, an extinct dino, you need some of its DNA. DNA is a special material inside every living thing that carries all the instructions for what it'll be like, including how it will look and what it can do (DNA is shaped kind of like a teeny-tiny spiral staircase, but it takes a very powerful, very specialized microscope to see it.)

In the movies, scientists find fragments of dinosaur DNA in the blood of an ancient mosquito. The mosquito had gotten stuck in goopy tree resin, which fossilized into hard amber. The scientists extract the DNA fragments, fill in gaps with other animals' DNA to get a full strand of DNA, and tinker a bit along the way. Then they clone lots of darling baby dinos... which grow up to be not-so-darling adult dinos. The main challenge in creating a real-life Jurassic Park is finding dinosaur DNA. Is it locked away in amber, Jurassic Park-style? Amber does a great job of preserving all kinds of cool things, like fossilized flowers, insects and even tiny lizards. But DNA? Nope. A team of researchers tried to extract DNA from a couple of bees caught in tree resin that wasn't even hardened into amber yet — and they couldn't do it. It turns out that amber (and resins in general) aren't great at preserving DNA.

But that isn't the biggest problem. As soon as something dies, its DNA begins to decay. Water, sunlight, microbes in soil, even other gunk in the creature's own body, all cause chemical reactions that mess up the DNA. "All of these things will break down the DNA into smaller and more degraded pieces until, eventually, there is nothing left," biologist Beth Shapiro, an expert on ancient DNA, told Live

¹ "Is Jurassic Park Possible?" by T.J. Resler. Copyright © 2022 by CommonLit, Inc. This text is licensed under CC BY-NC-SA 4.

Science. It takes a long time for DNA to degrade completely. Scientists think DNA can last 1.2 million years, maybe even 3 million (some say 6 million) under certain conditions. They've identified DNA from a 70,000-year-old Neanderthal fossil, a 700,000-year-old ancient horse bone, and even a one million-year-old woolly mammoth tooth. But a dinosaur from 65 million to 245 million years ago?

Researchers recently discovered something that looks kind of like DNA in a really well-preserved 125 million year-old fossil of a peacock-sized dinosaur called Caudipteryx and in a 76 million-year-old duck-billed dinosaur called Hypacrosaurus. But they have no idea if it's really from the dinosaurs; it could be from a microbe or something like a worm that crawled by more recently. And even if it really is dinosaur DNA, it may be seriously messed up. So a real-life Jurassic Park may not be possible (sorry, dino fans). But Woolly Mammoth Park? Maybe! Woolly mammoths — the shaggy, long-tusked relatives of today's elephants and the best-known of all the mammoths — first appeared about 300,000 years ago during the Pleistocene epoch, which included the Ice Age. That means their DNA is not anywhere near as old as dino DNA. And, yes, scientists have successfully extracted DNA fragments from the teeth of multiple mammoths, which lived in a frigid area that is now Siberia. Some of the DNA, from an ancestor of the woolly mammoth, was 1.1 million to 1.2 million years old! The cold environment of northern Siberia, where there are large areas of permafrost (permanently frozen ground), helped preserve the mammoth DNA. The mammoth DNA survived because it was more deep-frozen than fossilized, the science and tech website Gizmodo reported. Teams of scientists from nine countries pieced together the mammoth DNA fragments to learn about mammoths and how they evolved. Now a group of scientists wants to see herds of woolly mammoths wandering across the Arctic tundra again.

They are working on bringing them back — a process they call “de-extinction.” They plan to insert traits from a woolly mammoth into the DNA of an Asian elephant, the mammoth's closest living relative. They'd pick the most mammoth-like traits, like its shaggy coat and ability to withstand the cold. Then they would clone the animals. To be honest, it wouldn't create a true woolly mammoth, but more of a hybrid woolly mammoth-Asian elephant or a “mammophant.” But, if everything goes according to plan, the animal will look and act like a woolly mammoth. Just like in the Jurassic Park movies, not everyone is enthusiastic

¹ “Is Jurassic Park Possible?” by T.J. Resler. Copyright © 2022 by CommonLit, Inc. This text is licensed under CC BY-NC-SA 4.

about the idea of bringing extinct animals back to life. Even if scientists can bring back woolly mammoths, should they? The idea raises a lot of questions about right and wrong. What if the environment has changed too much for woolly mammoths to thrive now? What if the plants they used to eat no longer exist? Or what if the elephants who would raise the first mammothants don't accept them? And then there's the question of people. Many more people live in the Arctic now than when woolly mammoths roamed the earth. Other scientists think it would be better to use the process to keep currently endangered animals from going extinct. Scientists could insert traits into animals to make them healthier or to help them adapt faster to climate change, which threatens the habitats of many animals. The scientists working to de-extinct woolly mammoths point out that the animals could help restore aspects of the tundra ecosystem that have suffered since the animals went extinct. Eventually, the scientists would like to see herds of woolly mammothants wandering freely through the tundra. But the first few would be safeguarded in a nature reserve in Siberia. And what would they call this reserve? Pleistocene Park!



¹ "Is Jurassic Park Possible?" by T.J. Resler. Copyright © 2022 by CommonLit, Inc. This text is licensed under CC BY-NC-SA 4.

COMPREHENSION QUESTIONS

Answer the following questions, use evidence from the text to support your answers.

1. Why can't scientists find dinosaur DNA?
2. Why is a real-life Jurassic Park not realistic?
3. How do scientists think they can bring back the woolly mammoth?
4. The author explains how technology could be used to de-extinct animals. What are the benefits & concerns of bringing back animals like dinosaurs or the woolly mammoth?



Below is an example of writing at an 8th grade level.² The student was asked “How is a cell like a familiar building or city?” The student answered by comparing a cell to Mount Olympus & wrote as if they were a Greek god.

How Mount Olympus is Like a Cell

Have you ever looked at your own cells? No, of course not. You’re a mortal and you don’t have the power or technology to do that. Maybe some day in the future we shall grant humans the power of microscopic vision. Who knows? That’s up to Zeus. Cells are amazing things. Each one is individually different. When I first looked at my own cells I thought, “WOW there is nothing like this in the whole world.” I was wrong. Recently, I came to the realization that my own dear Mount Olympus is very much like a cell itself. There are many components in a cells that can also, in a way, be found on Mount Olympus. The structure of a cell and the components within are very like Mount Olympus.

Shares the main idea of the essay clearly, showing the reader what comes next

Organizes ideas in a clear structure – a tour through Mount Olympus – to show how parts of a cell are like the different parts of Mount Olympus

What? You don’t believe me? Well fine! Come on. I’ll show you.

Oh, and by the way my name is Eos and I’m the Greek goddess of dawn. I’m responsible for the rising of the sun. Be careful and follow me. Don’t let anyone else see you. Mortals aren’t allowed up her. Let’s go.

In an animal cell, the cell membrane controls what enters and leaves the cell. There are small pores that allow things of different sizes through. Up her, on Olympus what keeps the mortals from entering, or leaving (if they are to be kept here) is an instilled fear of us. Mortals dare not enter unless told to by one of the gods or goddesses. They dare not leave either.

Uses specific & relevant words to explain the topic

Now, all of you stand still. No, it’s okay. This is just a powder that will make you invisible. Nobody move or make a sound. Got it? If you do, it will be your life

²Writing sample obtained with permission from Student Partners. “Student Writing Samples.” Achieve the Core, <https://achievethecore.org/category/330/student-writing-samples>

wasted. I just have to check to make sure that neither Zeus or Hera are in their throne room...Okay, we can go in. Just go silently and quickly! This is Zeus and Hera's throne room, which is very similar to the nucleus of a cell. In a cell, the nucleus is the control center of activity on a cellular level. It's from here that Zeus and Hera control the happenings of immortals and mortals alike. It's like the control center for the world.

Uses specific & relevant words to explain the topic

Holy Zeus! Someone's coming in. It's Zeus himself! Quick into here. No noise, no movement, no nothing! Those of you who can peer through the window, do so. You'll be able to see the head god himself! Zeus and his wife, Hera, control the gods, goddesses, and mortals. They are like the chromosomes in a cell. In a cell, the chromosomes determine what kind of cell it will be and how it acts. That is what Zeus and Hera do in the world.

In a cell, the ribosomes turn amino acids into proteins. On Mount Olympus we make many things like laws, rules, and the weather. However, the most material thing that we make are lightning bolts. Of course, only Zeus can actually make them. Although others can use them if they have his permission. See how Zeus only uses his left hand for tasks? That is because his right hand is used to make lightening. Like the ribosomes, his hand takes raw materials (the abundant plasma and energy up here) and creates a whole new product (lightning.) His hand is like a the ribosomes in a cell.

Uses correct & different transition words to create flow & show how ideas connect to one another

Good, Zeus is leaving. This closet is starting to get stuffy. We should go quickly out into the hall. Now take a right, then a left into here. This is the courtyard. Immortals don't have to eat, but we do it for the pleasure of it. Also, eating helps keep us healthy and happy. The fountains flow with sweet juices and wines. The trees have the best fruits possible. That table over there is always supplied with the most delectable food imaginable. Those

³Writing sample obtained with permission from Student Partners. "Student Writing Samples." Achieve the Core, <https://achievethecore.org/category/330/student-writing-samples>

chests that are spread around are filled with gold and jewels for our taking. Wearing these helps enhance our godly image. This courtyard represents the vacuoles in a cell. In the vacuoles, large amounts of what the cell needs are stored. Here large amounts of what immortals thrive on is stored.

Don't be alarmed. Those are our mortal slaves. They won't tell on us because I have ordered them not to. In an animal cell, mitochondria store energy and release it when necessary. They power the cell. Here on Mount Olympus, we could not get by with out thee slaves. They perform almost every task that can even slight be considered laborious. The energy they get from food is stored in their bodies and released in order to do tasks.

In a cell, the ER, or endoplasmic reticulum, help to move substances around the cell. The halls and paths we've been following are very similar to the ER, they are like the roads that contain all movement.

Quick, into this room here. That was Hermes the messenger god. Now that I think of it, he is very much like the golgi bodies in a cell. The golgi bodies package and ship substances from place to place in a cell. Hermes, similarly wraps items up in goat skin and takes them from one person, immortal, or Titan to another.

Now, let's go back to the entrance. You should go. Soon every god, goddess, demi-god, and demi-goddess will be coming. There is a big meeting tonight. So they were all summoned here. By now, I'm sure you can see how Mount Olympus is structured like a cell. Just follow that path down there until you get home. Wait, the day is almost over and it'll get dark. Each of you swallow some of this powder. There, this enables you to fly, which is much faster than walking. If you promise not to tell anyone about this and you can go. You swear? Okay, good bye.

Provides a conclusion that retells the main point of the essay

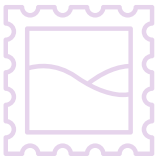
³Writing sample obtained with permission from Student Partners. "Student Writing Samples." Achieve the Core, <https://achievethecore.org/category/330/student-writing-samples>



EVERYDAY ACTIVITIES TO SUPPORT LEARNING

★ If your 8th grader gets stuck on words often, or if they sound choppy when reading, talk with their teacher about their fluency. Also, have your child practice reading short texts to get better, such as poems or short stories

- Ask your 8th grader to choose a book they want to read on their own each day. Reading many books over time is important. Let your child pick, so they will be excited to read
- Go to the Hennepin County library together often-it's free! Anyone can get a free library card, regardless of immigration status
- 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 share with you, with friends, or with other family members
- Ask your child to practice their writing. They can keep a journal, write letters or emails, or take notes about what they are learning
- Listen to podcasts together & talk or write about what you learned
- Show your 8th grader how they can use what they learn at school later in life:



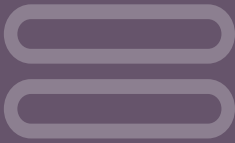
- Ask friends & family to show your 8th grader how they can use the things they are learning at school
- Attend a writing class at the community center
- Ask your child to volunteer at community events & activities
- Talk about college with your 8th grader. Look at what you need to apply to go to college. Show your middle schooler how the classes they are taking now will prepare them for high school & college
- Give your child weekly chores that make them read like cooking, shopping, & sorting mail
- Make a homework schedule & stick to it. Make sure your child has finished their homework every day



TIPS

TIPS FOR TALKING TO TEACHERS

1. Can you show me the results of my child's most recent reading assessment?
2. What is my 8th grade student good at, & how do you use these skills in class?
3. How do you choose what the class reads? Will my 8th grader see faces & places they know in the books? Will they learn about new people & places?
4. What are the 8th graders learning when they read? What should my 8th grader be able to understand & talk about based on what they read? What topics do they read about in history & science?
5. Does my 8th grader get to choose to read books that are interesting to them? Are they only allowed to read books you have chosen? Are they only allowed to choose books at a specific reading level? Can they read things that help them in class & that are interesting to them?
6. Can my 8th grader write in a way that shows you they know what they are reading & learning? Do they use examples from the text & enough details? Do they use the right spelling, grammar, & punctuation? If they are not, how can I help them?
7. How much can my child write in a single class period? How do they get feedback & revise their writing?
8. Do you have any examples of my child's writing? Has my child rewritten anything?
9. Can my 8th grader speak & listen in class that shows they understand what they are learning? Do they use proof from the text, present their answers in detail, & speak with enough depth to show they understand? If not, what challenges are they facing?
10. What can I do to support my 8th grader in class? How can they build a strong relationship with you & take responsibility for their learning?



Mathematics

WHAT YOUR CHILD SHOULD KNOW & BE ABLE TO DO

In 8th grade, students focus on solving problems with **functions & linear** equations. Students should work together in class, talk about how they solve problems, & learn from each other. They should use technology to look at & graph equations & data. 8th graders should make mathematical arguments & try different ways to solve problems. They should solve both number & word problems, including real world problems. Lastly, they should estimate solutions before solving & know if their estimate is reasonable.

To see all 8th grade state standards for Math see here: education.mn.gov/MDE/dse/stds/Math

LEARNING 8TH GRADE MATHEMATICS

- ☑ Describe the value of numbers that are not rational by using **rational** numbers

$\sqrt{7}$ is not rational because it cannot be represented by a fraction. The value of $\sqrt{7}$ is between 2.6 and 2.7



- ☑ Solve problems with complicated **exponents** including exponents that are negative numbers & fractions
- ☑ Apply properties of integer exponents to generate equivalent **expressions**. Use **square roots** to show solutions to equations

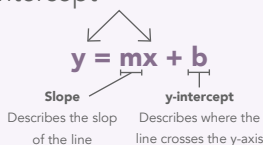
$$27^{\frac{1}{3}} = \sqrt[3]{27^2} = \sqrt[3]{729} = 9$$

- ☑ Write large & small numbers using **scientific notation**; multiply & divide with numbers in scientific notation

$$86,000 \rightarrow 8.6 \times 10^4$$

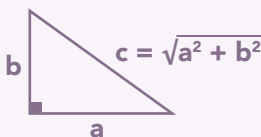
$$4.2 \times 10^{-4} \rightarrow 0.00042$$

- ☑ Solve problems with linear equations in one variable & systems of linear equations. Represent & graph relationships from real-world & math problems using linear equations
- ☑ Use linear equations to show proportional situations. Find the slope & y-intercept



- ☑ Look closely at patterns & relationships in data involving two variables. Use **functions** to model relationships between two variables. Create & interpret linear functions with tables, graphs, & equations
- ☑ Justify & use the **Pythagorean Theorem** to solve problem

For a right triangle (a triangle with a 90° angle), $a^2 + b^2 = c^2$





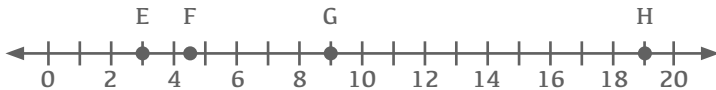
8TH GRADE MATH EXAMPLES

Below are examples of math problems at a eighth grade level.³

1. Which of the following are irrational expressions?

- a) $4\sqrt{18}$ d) $4 + \sqrt{16}$
b) $\sqrt{16} + \sqrt{25}$ e) $10\sqrt{9}$
c) $12\sqrt{4}$ f) $3 + \sqrt{15}$

2. Four points are shown on the number line, which point represents $\sqrt{9}$?



3. Simplify each of the following expressions:

$$10y^8 \cdot 2y^2 = \qquad \qquad \frac{4x^3}{3x^6} =$$
$$\frac{x^{20}}{x^5} = \qquad \qquad \frac{2x^2 \cdot 3x^3}{2x^5} =$$

4. The total land area of China is approximately 9.326×10^6 square kilometers. Write the land area of China in standard form.

5. A dust particle weighs 0.00000000753 kilograms. What is this number written in scientific notation?

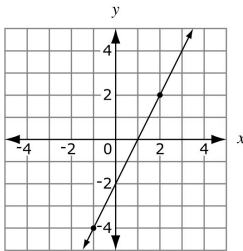
6. Which represents a nonlinear function?

- a) $\frac{1}{2}x + y = 11$ c) $xy = \frac{1}{2}$
b) $x - y = 1$ d) $x = \frac{1}{2}y$

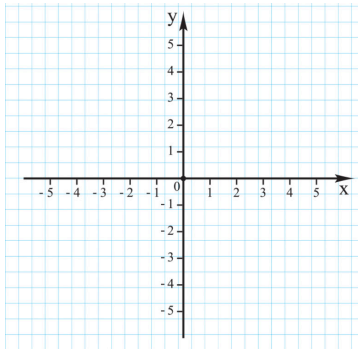
7. The total cost of a book order, c , is dependent upon the number of books in the order, b . Write an equation to show the cost as a function of the number of books.

³Released items from Minnesota Comprehensive Assessment. Copyright MDE <https://education.mn.gov/MDE/dse/test/items/>

8. The graph of a line is shown below. What is the slope of the line?



9. Graph the line that passes through the point (1, 2) & has a slope of $(-\frac{3}{4})$



10. What is the value of $4j - |j - 6|$ when $j = -3$?

11. The school band is selling candy bars to earn money for a trip that will cost \$1,625. For each candy bar they sell, they earn \$0.75. They have already earned \$967. Write an equation that can be used to find the minimum number of candy bars, n , that they must sell to earn the rest of the money for the trip.

12. Points $Q(2, 2)$, $R(4, 4)$, and $S(8, 4)$ are vertices of parallelogram $QRST$. What is the equation of the line that includes ST ?

13. Graph the solution to the inequality $-4x + 3 > 21$ on the number line below.



Answer key on page 20.

³Released items from Minnesota Comprehensive Assessment. Copyright MDE <https://education.mn.gov/MDE/dse/test/items/>



EVERYDAY ACTIVITIES TO SUPPORT LEARNING

★ **Talk to your 8th grader about the math they can do. What new things are they learning? Are they having any trouble? Can you help them?**

- When your 8th grader needs help with homework, ask them questions that help them learn how to solve the problem. Don't solve the problem for them
- Help your 8th graders find things that will help them learn. Ask your student to talk to their teachers about things that can help, such as practice activities, extensions, or more resources
- Have your child talk about the things they are learning & where they see these things in the world around them. For example, where do they see negative numbers outside of math class?
- Take your child shopping. Ask them to compare prices to find the best deal. Ask them to estimate the tax
- Ask your 8th grader about math problems they want to solve. Can they use this math when they are older at their jobs?
- Ask your 8th grader to do statistical research in categories that interest them. For example, have them find the top 30 songs they've listened to this month. Find range, mean, & mode song duration
- Show them where you use math in your everyday life

ANSWER KEY

1: and ; **2:** E; **3:** 20; ; ; 3; **4:** 9,326,000 square kilometers; **5:** $7.53 \times$ kilograms; **6:** c $xy =$; **7:** $c = f(b)$; **8:** 2; **9:** They should draw a line connecting the number 6 on the y axis (vertical axis) and 7 on the x axis (horizontal axis); **10:** -21; **11:** $0.75n = \$658$; **12:** $y = x - 4$; **13:** x is less than or equal to -4

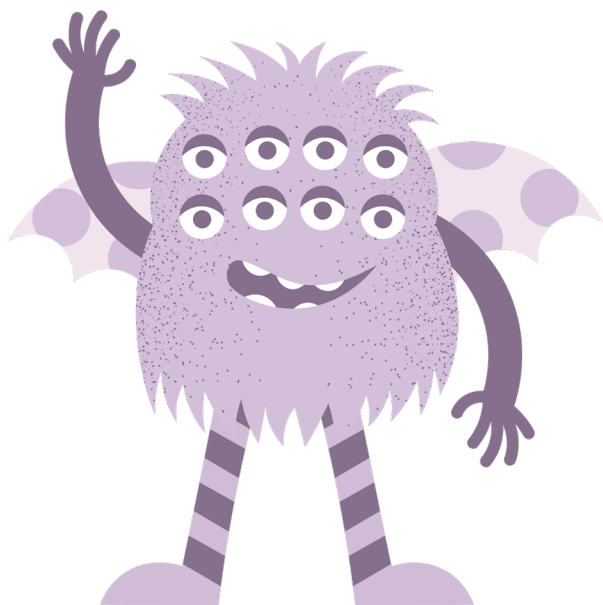


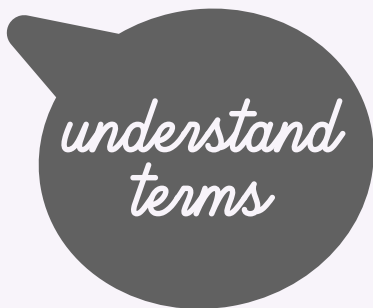


TIPS

TIPS FOR TALKING TO TEACHERS

1. Can you show me my child's most recent math test?
2. What are the most important topics 8th graders are learning about in math? Is my child understanding the materials? Can you share specific examples?
3. How does my child approach hard math tasks? How can I help them face challenging problems?
4. What should my child understand & talk about from what they have learned?
5. Can my child show you that they understand what they learned? If not, what challenges them? How can I help?
6. How can I support & encourage my 8th grader to take charge of their learning?





Education words glossary

Educators use words that have a specific meaning in schools. Understanding those terms will help you talk to the teacher.



DIGITAL FOOTPRINT



The information about a person that exists on the internet as a result of their online activity. This includes posts on social media, photos, online purchases & reviews, passwords, subscriptions, & many other types.

EQUATION



A statement in which two things are equal. Equations often have unknown numbers (called variables) that are shown as a letter. For example: $3b + 5 = 14$

EXPONENT



An exponent refers to the number of times the base number is multiplied by itself.

$$\text{base } -7^{\text{exponent}} = 7 \times 7 \times 7$$

EXPRESSION



Numbers, symbols, & operations (such as + and \div) grouped together that show the value of something. For example, $y + 4$ is an expression, & $3 - x/z$ is also an expression.



FIGURATIVE LANGUAGE

Figurative language uses figures of speech to be more interesting, effective, & impactful. For example: “My dog’s coat is as black as coal.” “She is feeling blue.” “He fought with the strength of a lion.” 8th graders should use context to find the meaning of figurative language & know it is different from the actual meaning of the words.

FUNCTION

An expression that defines a relationship between one variable (the independent variable) & another variable (the dependent variable). If the function is linear, then when it is graphed on a coordinate plane, it will create a straight line with a constant slope.

LEXILE

A popular leveling system used by students, teachers, & parents to show two things:

- 1) A student’s individual reading level
- 2) The difficulty of the text

You can often find the Lexile number on the back of the book or by searching the title on www.lexile.com.

Grade-appropriate Lexile levels:

Grade 6-8 level 925–1185

LINEAR EQUATION

An equation between two variables that makes a straight line when plotted on a graph

Linear Equation	System of Linear Equations
You rent a bike for \$10 for the 1st hour, & each additional hour is \$5.50. What is the cost (y) of renting the bike for 6 hours?"	You are working at the concession stand at your school’s basketball game. You are selling hot dogs & chips. Each hot dog costs \$1.50 & each bag of chips costs \$0.50. At the end of the night you made a total of \$78.50. You sold a total of 87 hot dogs & chips combined. How many hot dogs were sold & how many chips were sold?
Let y = the total cost Let x = the number of hours	Let x = the number of hot dogs sold Let y = the number of chips sold
$y = 10 + (x-1)5.50$	$1.50x + 0.50y = 78.50$ (Equation related to cost) $x + y = 87$ (Equation related to total number sold)

PARAPHRASE



Rewording a sentence or paragraph in your own words.

PLAGIARISM



Claiming someone else's work or ideas as your own.

PROPORTIONAL RELATIONSHIPS

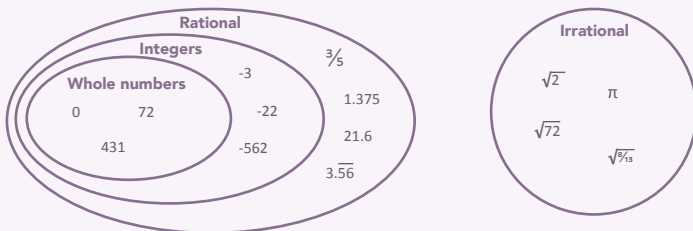


After ordering the data set from lowest to highest, the median is the value in the middle of the data set.

RATIONAL NUMBERS



A rational number is any number that can be shown as a fraction of two integers. An irrational number cannot be shown as a fraction. A decimal is irrational if it never ends & it has no repeating pattern.



READING LEVEL



Teachers often measure a student's reading level, usually marked by a letter or number. This helps teachers know what students need to learn. But sometimes, children are only allowed to read texts at that level. Be wary of this practice. Children should not be limited to reading only texts that are at or below their grade level goal.

REFERENCES

Minnesota Department of Education Academic Standards <https://education.mn.gov/mde/dse/stds/>

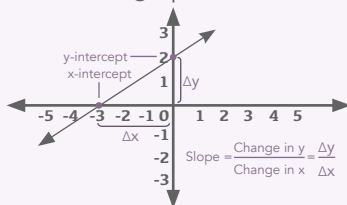
Seek Common Ground Family Guides <https://seekcommonground.org/family-guides>

Math Milestone Grade Level Grids <https://www.mathmilestones.org/gradelevel-grids>

SLOPE



The slope of the line describes the direction & steepness of the line. It is found by dividing the change in y over the change in x between any two points on the graph.



SQUARE ROOT



The square root is a factor of a number that, when multiplied by itself, gives the original number. For example, both 5 and -5 are square roots of 25.

SCIENTIFIC NOTATION



Scientific notation is a way of showing numbers that are too large or too small to be easily written. For example the number 0.00000000000073 can be written more easily as **7.3×10^{-12}**

TEXT COMPLEXITY



Properties of algebra describe the different ways that numbers can be combined. In 6th grade students use the associative, commutative & distributive properties of algebra.

THESIS STATEMENT



A thesis statement is one or two sentences that summarize the essay's main idea.

VARIABLE



A variable is an unknown numerical value in an equation or a math expression. Variables are shown with a symbol (usually a letter).

$$2x + 1 = 9$$

└ variable

Y-INTERCEPT



The y-intercept is the point at which the graph of a line passes the y axis. You can see an example of this in the definition for slope.



NOTES

Handwriting practice lines consisting of a solid top line, a dashed middle line, and a solid bottom line. There are ten sets of these lines provided for writing notes.



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