

6TH

A FAMILY GUIDE FOR STUDENT SUCCESS

SIXTH GRADE
Concepts of Literacy and Mathematics



The Maryland State Department of Education would like to thank the Mississippi Department of Education for allowing the adaptation and incorporation of this guide to support Maryland families and children.

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Deaf and Hard of Hearing Use Relay

Dear Families,

Parents and guardians are their child's first teachers, and your insight is essential to helping your child succeed. When families and educators work closely together, students benefit.

The Family Guide for Student Success outlines the key literacy and math skills your child will learn from pre-kindergarten through eighth grade. These guides show what students should know by the end of each grade and support your child in meeting Maryland's learning expectations.

Your partnership with your child's teacher makes the biggest difference. Stay in communication, ask questions, and reach out for ideas or activities to support learning at home. If you have questions about curriculum or school programs, please contact your child's school.

This guide is here to help us set clear expectations, strengthen skills, and support every child's growth, together.



Carey M. Wright, Ed.D.,
State Superintendent of Schools

HOW TO USE THE FAMILY GUIDES

In the guide that follows, you will notice that some tips have special symbols next to them. These symbols show which children might find that tip most helpful, since every child learns differently.

Use the key below to help you choose the tips that are most helpful for your child:



CIRCLE: For Children Learning English

Look for this symbol if your child is learning English as another language. These tips are great for building language skills while working on building reading and math skills. All of the activities can be completed in your child's home language as well as English.



SQUARE: For Children Who Need a Little Extra Help

This symbol means the tip might be especially helpful for children who need more time or practice to really understand a skill. These ideas can help make learning feel easier and less frustrating.



TRIANGLE: For Children Who Are Ready for a Challenge

If your child already understands a skill and is ready for something more, look for this symbol. These tips offer fun ways to go deeper and keep learning exciting.

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LITERACY

In grade six, your child will continue reading and writing, but in addition to literature, they will read more texts that provide facts and build knowledge, while drawing on your child's background knowledge about other subjects, including science and social studies. Your child will read more challenging texts and be asked more questions that will require them to refer back to what they have read. There will be an increased emphasis on building a strong vocabulary so that your child can read and understand more challenging material. Your child will be expected to demonstrate their understanding of the material by answering questions and contributing to class discussions. They will also be expected to integrate information from different sources and respond to challenging content through written interpretation and analysis. Activities in these areas include:

LANGUAGE

- Demonstrating command of standard English when writing or speaking.
- Applying a range of strategies to interpret unfamiliar academic and content words at a grade 6 level, including using context as well as Greek and Latin roots across texts.

COMPREHENSION

- Reading and citing evidence, including reading challenging materials and using specific examples from the text to back up their understanding and explanations.



COMPREHENSION (CONTINUED)

- Finding the main idea and summarizing, including identifying the central message or lesson (theme) of a story or article and writing a summary of the text based on that message.
- Understanding story structure, including following the action and characters as the plot unfolds and seeing how all the pieces (like chapters or scenes) fit together to build the overall story and theme.
- Analyzing vocabulary and author's voice, including determining the meaning of difficult words—including words used in new or creative ways—and understanding how the author's choice of language and perspective impacts the overall meaning and feeling of the writing.
- Comparing different texts and media, including comparing and contrasting texts in different formats (like a book versus a movie, or a story versus a poem) to see how the same topics or events are presented.
- Analyzing arguments and claims (in nonfiction), including when reading articles or reports, identifying the author's main points and checking if those points are supported with facts and evidence, not just opinions.

SPEAKING AND LISTENING

- Participating in discussions by analyzing and responding to others' ideas and reasoning.

WRITING

- Planning and writing three main types of writing—essays that argue a viewpoint, reports that explain information, and effective stories—making sure the writing is right for the goal and the reader.

Your child can demonstrate command of standard English grammar and usage when writing or speaking.

- Use a variety of sentence structures (simple, compound, or complex) when writing.
- Use punctuation (periods, commas, dashes, parentheses) intentionally and appropriately.
- Spell grade-appropriate academic and content area words correctly.

HELP AT HOME

- Provide a wide variety of reading materials for your child (books, magazines, manuals, newspapers, etc.). Read some of these materials together and discuss interesting ways authors communicate, including through a variety of sentence structures.
- Encourage your child to read their writing aloud. This will help them notice when sentences end abruptly or go on for too long.



VOCABULARY

SIMPLE SENTENCE

Subject (Who or What) and verb (did what). Example: Carla ran.

COMPOUND SENTENCE

Two simple sentences joined by a conjunction such as and, but, or. Example: George ran the marathon, and Travis watched.

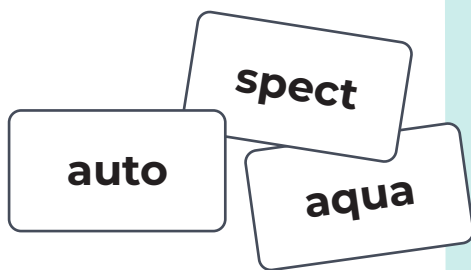
COMPLEX SENTENCE

Combine a clause (a mini sentence that cannot stand on its own) with a sentence. Example: When Tanisha found the treasure, she was thrilled.



Your child can determine the meaning of unknown or multiple-meaning words and phrases on grade 6 reading and content.

- Use context (the surrounding words and/or sentences) as a clue to the meaning of a word or phrase.
- Use common grade-appropriate Greek or Latin roots as clues to the meaning of a word (audience, auditory, audible).



COMMON GREEK & LATIN ROOTS

GREEK

auto (self)
bio (life)
graph (writing)
hydr (water)
-logy (study of)
astro (star)

LATIN

aud (hear)
aqua (water)
cred (believe)
form (shape)
fract (to break)
port (to carry)
scrib/scribe (to write)
spect (to look)
struct (to build)

INTERNET RESOURCES



Scan the QR code to view the **ROOT RAP ACTIVITY** from the Florida Center for Reading Research.



HELP AT HOME

- ▶ Provide your child with a wide variety of reading materials on topics they're interested in. Your school library and your local public library are great resources for finding materials on a variety of topics.
- ▶ Create a Greek and Latin roots jar filled with Greek or Latin roots and their definitions on index cards. Pull an index card with a Greek or Latin root out of the jar and spend the week searching for as many words as you and your child can find that include that root. Add that list to the back of each index card and use the meaning of the root to decide what the word means. Check your definition with a dictionary.
- ▶ Use the activity from the Florida Center for Reading Research to help your child gain familiarity with common word roots.

Your child can refer to or quote textual evidence to support analysis of what the text says explicitly, as well as what is suggested (inferences) drawn from the text.

- Find the lesson, theme, or central idea the author is trying to get across.
- Make connections based on prior knowledge.
- Identify the main topic of a multiparagraphed text.

VOCABULARY

INFERENCES are conclusions a reader draws from text when the information is not specifically stated. Authors do not always TELL you everything! Sometimes, readers must use clues and experience to make guesses as they read. This is called making an inference.



HELP AT HOME

- ▶ Help your child develop a “color-coded” system for reading. Use different colored highlighters to mark main ideas, stated evidence, and information that helps your child imply things that are not stated (inferences).
- ▶ Encourage your child to ask questions such as the 5Ws and an H (Who? What? When? Where? Why? How?) as they read.
- ▶ Give your child sticky notes to jot down thoughts, questions, predictions, inferences, or connections from a text as they read. Stick those notes to the corresponding page in the text and have them come back to their notes when answering questions about the text.



Your child can determine a theme or central idea of a text and how it is conveyed through particular details. Your child can provide a summary of the text distinct from personal opinions or judgments.

- State or compose a summary that includes events from the beginning, middle, and end of a text.
- Use understanding of characters and plot, as well as repeated words, ideas, and/or symbols as clues to the theme.



VOCABULARY

A story's **THEME** is its underlying message, or "big idea." For example, the theme of Cinderella is the ability to achieve success through perseverance and positive behavior when faced with negative circumstances.

HELP AT HOME

- ▶ After watching a play, movie, or musical, discuss with your child what the central message or theme might be. Ask them to support their idea with examples from the show.
- ▶ ▲ After watching a play, movie, or musical, discuss repeating words, ideas, or symbols and how those relate to the theme or central message.
- ▶ After reading a literary text, ask your child the following questions: What challenge did the main character(s) face, and how did they overcome it? What did the main character(s) learn or how did they change? What does the author want us to learn from the experience of the main character(s)?

Your child can describe how the plot of a literary text unfolds in a series of episodes, as well as how the characters respond to and/or change as the plot moves toward a resolution.

- Identify how an author develops characters in the story.
- Use basic story elements to describe a story's plot, including major events and challenges.
- Identify the characters in the story and how they are connected to one another.

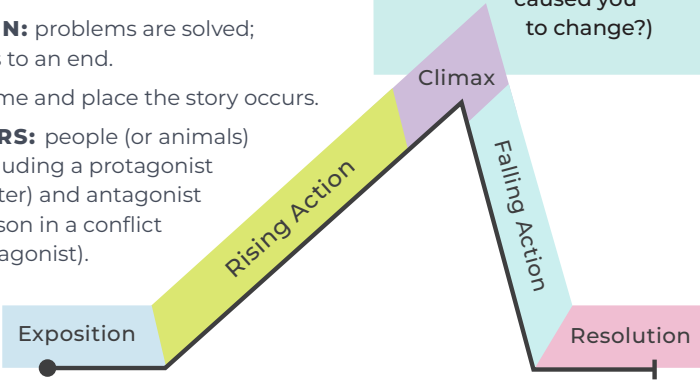
BASIC STORY ELEMENTS

Basic story elements include the following:

- **PLOT:** the series of events that happen in the story.
- **EXPOSITION:** beginning of the story; introduces characters, setting, and tone.
- **RISING ACTION:** problems arise in the story.
- **CLIMAX:** the high point, or most exciting part of a story.
- **FALLING ACTION:** action that follows the climax; leads to the end.
- **RESOLUTION:** problems are solved; action comes to an end.
- **SETTING:** time and place the story occurs.
- **CHARACTERS:** people (or animals) in a story, including a protagonist (main character) and antagonist (villain or person in a conflict with the protagonist).

HELP AT HOME

- ▶ Practice analyzing the plot with your child by discussing their favorite TV shows or movies. Ask them to identify the setting, characters, problem/ conflict, climax, and resolution. This allows them to relate the common elements of plot to every “story,” whether told orally, read in a text, or watched on a screen.
- ▶ Ask your child to pretend to be one of the characters in a story they are reading at home or for school. Then, interview them based on the details of the story (How did you feel at the beginning of the story? How did you feel at the end? What caused you to change?)

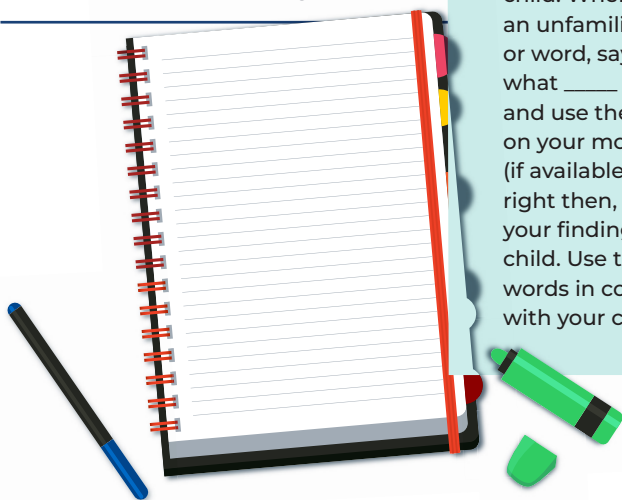


Your child can determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Your child can analyze the impact of a specific word choice on meaning and tone.

- Understand that some words/phrases have literal meanings and others have figurative meanings.
- Understand the impact of an author's word choice on the tone of the story.

VOCABULARY

A **CONNOTATIVE MEANING** is the feeling suggested by a word or phrase. For example, would you rather *trudge* down the road or *stroll* down the road? These verbs have similar meanings but each has a different connotative meaning. *Trudge* connotes a struggle, but *stroll* connotes a relaxing walk.

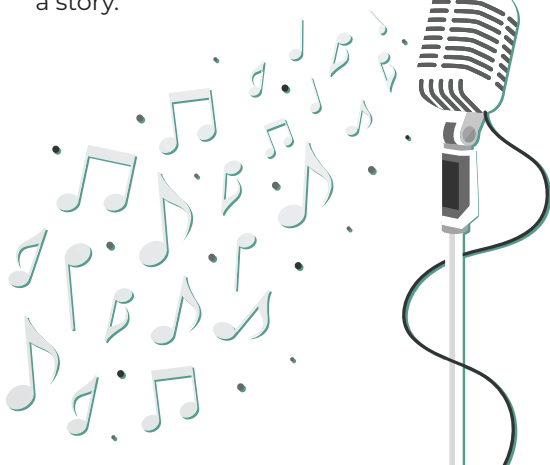


HELP AT HOME

- Encourage your child to keep a vocabulary notebook. In the notebook, your child can make note of words or phrases that are unfamiliar or interesting as they read. Have your child draw doodles and other images to help them memorize the meaning of an unfamiliar word. Encourage your child to use the new words in conversations.
- Model the vocabulary notebook for your child. When you hear an unfamiliar phrase or word, say, "I wonder what ____ means?" and use the Internet on your mobile devices (if available) to find out right then, and share your findings with your child. Use the new words in conversations with your child.

Your child can analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.

- Understand that particular sentences, chapters, scenes, stanzas etc. form a complete structure.
- Understand why things must happen in a certain order in a story.



VOCABULARY

STANZAS occur in poetry and songs and are usually grouped together by rhyme pattern and/or the number of lines. In any given song you have unknowingly sung stanzas, which are known as “verses.”

HELP AT HOME

- Encourage your child to use a simplified “text coding” system as they read. This visual connection to the text will assist your child when going back to search for text evidence.

“+” can be used to mark when new information is revealed.

“!” might indicate something surprising or dramatic.

“?” can be used to mark information that is not understood.

“X” can indicate that the reader disagrees with something they have read.

- After reading a story, ask your child to draw a story board or cartoon strip showing the events, including how the main character was at the beginning of the story and they are at the end. Ask your child how the story would be different if _____ never happened?



Your child can explain how the author develops the point of view of the narrator or speaker in a fiction text, or how the author develops his own point of view in a nonfiction text.

- Identify what kinds of words, vocabulary, and dialect the narrator or author uses.
- Determine what background information about the narrator or author is given to the reader.

VOCABULARY

FICTION is a story created in one's imagination.

NONFICTION is a true story about real people and real events.

DIALECT is a form of language spoken in a particular region and uses its own words, grammar, pronunciations, etc. Some examples of dialect include:

- Y'ALL (Southern) : you all
- MON (Jamaican): man
- CAH (East Coast): car
- FRANKS (Western): hot dogs

POINT OF VIEW

Point of view is the viewpoint from which the story is told.

FIRST PERSON

The character is telling the story from his point of view. Clue Words: I, we.

SECOND PERSON

The author directly addresses the reader as "you." This viewpoint is rare.

THIRD PERSON

A person not involved in the actual story is telling the story. Clue Words: he, she, they.

THIRD PERSON OMNISCIENT

A person outside the action is telling the story but also knows the thoughts and feelings of the characters.

HELP AT HOME

- ▶ Compare characters in books, TV shows, and movies to people you know in real life and have your child do the same. Have them explain why the two people are similar.
- ▶ Encourage your child to use the "Most Important Thing" strategy. When reading, have them list two important ideas about the author's point of view or perspective and how much it impacts the reader. Then, have your child list the most important thing they learned from the text. This will assist them in making the connection between the author's point of view and how it impacts what readers learn from the text.
- ▶ Ask your child to write a diary entry from a different character's point of view.

Your child can compare and contrast the experience of reading a story, drama, or poem to listening or viewing an audio, video, or live version of the story, including contrasting what they “see” and “hear” when reading the text to what they perceive when they listen to or watch.

- Determine if the actors in the play, film, or television version of a story fit with their description as written in the original text.
- Decide what is different in the live version from how it was pictured in your mind while reading, and why.



HELP AT HOME

- ▶ Take your child to see a musical or play version of a text you have both read. Discuss with your child the way the props, music, costumes, and actors' movements and voices bring the story to life. Discuss how the lighting or background music changes from scene to scene? Why?
- ▶ When watching the film version of a story, discuss with your child whether or not the actors and scenery “look” like they imagined they would? Ask questions such as: How are they different, and why would the director have made that decision? Are certain parts of the story left out of the movie? Why did the director choose to leave that particular scene out?
- ▶ Take your child to a movie, play, or musical in your child's home language. Discuss how the props, music, costumes, and actors' voices and movements bring the story to life.



Your child can compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels, and fantasy stories) in terms of their approaches to similar themes and topics.

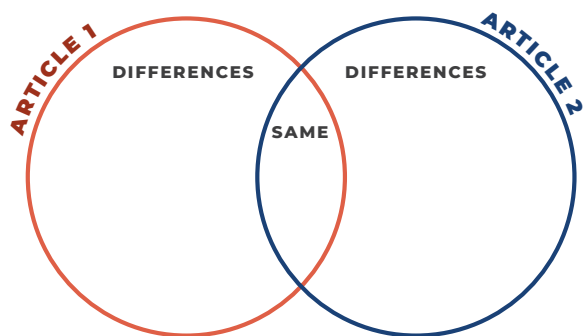
- Compare stories and poems on historical events such as the Civil Rights Movement or the Holocaust. Determine how the authors use different approaches to convey similar information.
- Look for historical fiction texts, newspaper reports, or song lyrics that deal with the same event in a different form.
- Read biographies and autobiographies on the same person.

RESOURCES

SAMPLE VENN DIAGRAM

Using a sheet of notebook paper or construction paper, make a simple Venn diagram for your child to complete after they read two articles.

Graphic representations of a Venn Diagram and a T-chart can be found on the Internet.



HELP AT HOME

- ▶ Visit your school library or public library branch and check out a variety of reading passages surrounding a common historical event that interests your child (e.g., the Hindenburg Disaster, the Civil Rights Movement, the Vietnam War) in order to help your child see how different authors vary in their approach to the same theme. Some of the passages should be informational and some should be fictional.
- ▶ Have your child construct a T-Chart or Venn Diagram showing the similarities and differences of the passages read and discuss how the information is presented. How do different authors and their backgrounds affect the way the information is relayed to the reader?

By the end of the year, your child can read and comprehend literature, including stories, dramas, poems, and literary nonfiction, in the grade 6 level proficiently and independently.

- Encourage your child to read as challenging of material as they can comprehend.
- Offer incentives as they read more challenging texts throughout the year.
- Supply nonfiction texts, such as articles and magazines, about topics that interest your child.
- Provide texts that describe how things work and why.



READ, RATE, REREAD STRATEGY

READ to get the big picture. Read the text at a comfortable pace with a focus on getting a general understanding of the text.

Adjust the **RATE** or speed of your reading depending on the complexity of the text.

REREAD the text, focusing on deep comprehension, details, and areas that were confusing.

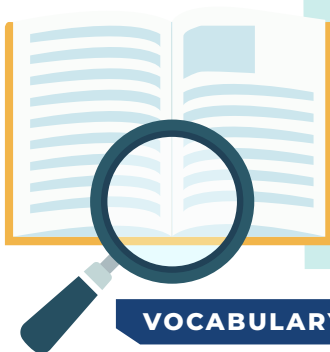
HELP AT HOME

- ▶ Have your child use the “3 R’s” when reading: Read, Rate, Reread.
- ▶ Do three careful, thoughtful readings of short passages.
- ▶ Have your child self-evaluate after each reading (e.g., What is understood or still unclear? What questions do I have? Did I miss something the first time?). Having your child self-evaluate and monitor their own comprehension increases their level of reading success, and independence.
- ▶ Assist your child in acquiring a public library card and help them use it often. Encourage your child to spend time each day reading a fictional series or informative piece that interests them. Set aside 20-30 minutes of “quiet” time each day that is spent with the entire family reading. It is important that your child sees you demonstrate reading. If it is important to you, it will be important to your child.



Your child can trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.

- Distinguish whether or not the author uses facts in their writing or merely opinions.
- Determine the main purpose of the text and if the author is trying to persuade the reader to think or do something.



HELP AT HOME

- Have your child review the title page of a book. Ask them questions about the text, such as: What does the title suggest? What is the publication date? Is it based on the most recent information available? What kind of credentials does the author have to write about this topic? Is the author considered an “expert” in this field?

VOCABULARY

SLANTED TEXTS are written based on unproven claims or author’s opinions. Explain to your child that they cannot believe everything that is read and to make sure an author provides enough good evidence to make their case.

Your child can combine information presented visually or in charts, as well as words, in order to build a coherent understanding of a topic.

- Compare and contrast information presented in different ways.
- Organize information in order to build a logical understanding of a topic.



HELP AT HOME

► Teach your child to use databases to look up information on topics they are interested in or for school research. Public libraries offer computer access for students who may not have a device at home. Ask your school librarian or your local public librarian which online databases and research tools families can access. They can guide you to reliable resources.

INTERNET RESOURCES



Maryland families can also access a collection of free research databases through the Maryland state library resource center. (Scan the QR code



to visit the site.) Two great options for middle school students are Gale in Context Middle and Gale in Context National Geographic Kids.



Your child can participate in discussions by analyzing and responding to others' ideas and reasoning.

- Participate in collaborative discussion one-on-one, in groups, and teacher-led.
- Come to discussions having read or studied materials.
- Refer to studied materials for evidence on the topic, text, or issue under discussion.

HELP AT HOME

- ▶ Use “Talk Stems” to have discussions on interesting topics (I think ____ because; I agree with you and ____; Can you say more about ____?; Building on what (Name) said ____; I see things differently. I believe that____, etc.).
- ▶ ● Use Talk Stems to discuss interesting topics in your child’s home language.
- ▶ Read about a topic together, then discuss what you both read, referring to pages or examples to support ideas.

Your child can write clear arguments to support a point of view, structured informative texts, and engaging narratives.

- Argue a point of view using logical organization and a variety of techniques.
- Produce structured, well-developed informative writing with clarity and precision.
- Craft structured, engaging narratives with developed characters and themes.

HELP AT HOME

- ▶ Create a designated writing space that is quiet and includes a desk or table, or even a clipboard, where your child can focus on writing.
- ▶ Create a writing “toolkit” that includes pencils, highlighters, sticky notes, and paper.
- ▶ Encourage your child to orally share their ideas, tell their stories, and explain their facts before they begin writing.
- ▶ ● Encourage your child to share their ideas for a writing piece in their home language before writing.
- ▶ ● Encourage your child to jot down notes or create charts in their home language before writing.





MATHEMATICS

In sixth grade, your child will establish fluency with addition, subtraction, multiplication, and division of multi-digit whole numbers, decimals, and fractions. They will expand their understanding of the number system to include numbers less than zero. They will begin to explore topics in proportional reasoning, such as equivalent ratios and rates, a journey that extends through 7th and 8th grades. Your child will continue to discover ways to find the area of shapes and explore data analysis and probability. Activities in these areas include:

NUMBER AND OPERATION SENSE

- Use visual models to represent the results of division of fractions, decimals and percents, leading to fluency in these operations.
- Represent positive and negative numbers on a number line and in context (i.e., temperature and sea level)
- Fluently divide multi-digit whole numbers.
- Use absolute value to describe the distance or difference between numbers.
- Continue to develop estimation strategies to assess the reasonableness of answers, particularly in context.

ALGEBRAIC THINKING

- Write algebraic expressions using variables to represent a situation.
- Compare relationships in context using $>$, $<$, $\leq$, $\geq$.
- Use number lines and the coordinate plane to represent solutions to equations and inequalities.
- Use a variety of visual representations for proportional relationships, including tape diagrams, double number lines, ratio tables and the coordinate plane.
- Find and compare unit rates.

GEOMETRIC REASONING & MEASUREMENT

- Find the area of shapes by breaking them into triangles and quadrilaterals.
- Use nets to represent and calculate the surface area of prisms.
- Draw polygons in the coordinate plane and find side lengths.

REASONING WITH DATA, STATISTICS, AND PROBABILITY

- Ask or identify questions that can be answered with statistics.
- Represent numerical data with histograms and box plots.
- Use median, mean, and range to describe and compare data.
- Use the language of probability to describe the likelihood of an outcome.



Your child can divide fractions by fractions.

- Use estimation to identify a reasonable answer and use this estimate to check solutions.
- Use visual models (e.g., number lines, area models) to represent problems.
- Explain solutions using visual models to make sense of a calculation.



HELP AT HOME

► Demonstrate using fractional parts at home to add, subtract, multiply and divide as with recipes, measuring, and sharing (a chocolate bar). Ask your child how many $\frac{1}{3}$ cup servings are in $2\frac{1}{2}$ cups of yogurt. Encourage them to draw an answer and make sense of it.

VISUAL MODELS

$$2\frac{1}{2} \div \frac{1}{3} = 7\frac{1}{2}$$

$2\frac{1}{2}$ cups of yogurt, partitioned in halves:



$2\frac{1}{2}$ cups of yogurt, partitioned in thirds:



$$= 7\frac{1}{2}$$



Your child can fluently divide multi-digit numbers.

- Use a variety of strategies including a standard algorithm to divide and identify when one strategy is more efficient than another.
- Use estimation to explain how they know their solution is reasonable.

HELP AT HOME

- ▶  Your child may begin by dividing four-digit by two-digit numbers. As your child becomes more confident, encourage your child to extend to solving multi-digit problems with and without remainders.
- ▶ Practice estimating with your child by asking them what will happen to the number of groups as the size gets larger or smaller. If they've created groups of 15 and 27, ask them how many groups of 22 would there be?
- ▶  Ask your child to solve the problem in two different strategies and compare and contrast the strategies.

Your child can fluently multiply and divide multi-digit decimals.

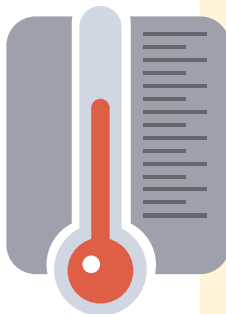
- Generalize whole number strategies, including a standard algorithm to apply them to problems with decimals and identify when one strategy is more efficient than another.
- Use estimation strategies to explain how they know their answer is correct.

HELP AT HOME

- ▶ Discuss the value of physical coins with your child and ask them how many nickels, dimes and quarters are in a given amount of money. For example, if you have \$2.45, how many quarters might that be? What's the remainder? Check your answer by multiplying and adding the remainder.

Your child can understand that positive and negative numbers and zero are used together to describe the world around them. They can represent these situations on vertical or horizontal number lines or the coordinate plane, extending the lines as needed.

- Estimate quantities by reasoning about their relative locations on a number line.
- Locate and interpret the position of rational numbers on a number line, including the position of opposite numbers relative to zero.
- Explain the relationship of positive and negative numbers in context – like temperatures or sea level change.
- Plot ordered pairs that may include negative coordinates or zero.



HELP AT HOME

- ▶ Discuss situations where positive and negative numbers are used in their lives (e.g., temperatures, floors on an elevator (with basement level), money, sea level rise and fall, etc.) and discuss what zero means in each of those situations.
- ▶ Use a vertical thermometer and ask them where the red line will stop if the temperature is at 75, 34, -2 and zero. What will that feel like outside?
- ▶ ■ Play 'Hot and Cold' game but use positive and negative numbers when looking for an item. Zero is the location of the item. You may tell your child they are at -10 (not there yet...) or +3 (you've passed it!).

Your child can order and identify the absolute value of rational numbers.

- Write, interpret and explain statements of order for rational numbers in a given context. If you owe someone \$30, then that's -\$30, but the value of the debt is \$30, so $|-30| = 30$.
- Order rational numbers from least to greatest. For example, $-\frac{7}{2}$, -2, $\frac{3}{4}$, $|-1\frac{1}{2}|$, 3.25
- Describe the relative position of two numbers on a number line when given an inequality. For instance, -7 is further to the left of zero than -3 on a number line.
- Distinguish between comparisons of absolute value and ordering numbers.



HELP AT HOME

- Play "What number am I?" Have your child choose a number. Ask your child questions to determine what the number is. The questions should be relative position questions (are you three units to the left of 2?). Use the language of inequalities (greater than, less than).
- Discuss what it means to owe money and be given money in terms of things they want to buy.

What's the difference between owing someone \$12 and making \$5 for completing your chores?

VOCABULARY

ABSOLUTE VALUE is a number's distance from 0 on the number line and is written with a number inside parallel vertical lines (e.g., $|5|$ or $|72|$).

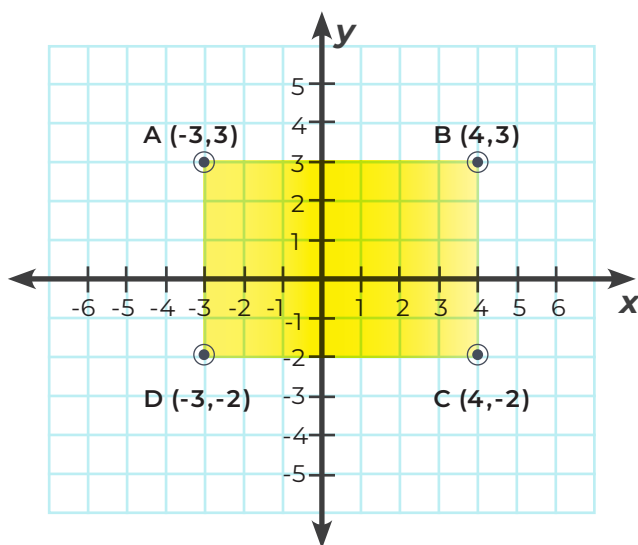


Your child can solve problems by graphing points in all four quadrants of the coordinate plane.

- Use the coordinates and absolute value to find distance between two points with the same first coordinate or the same second coordinate.
- Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane.
- Plot a point on the coordinate plane and read the coordinates of a plotted point.

HELP AT HOME

- ▶ Using a coordinate plane with x- and y-axes, draw a rectangle using all four quadrants. Have your child determine how long each segment is.
- ▶ Help your child determine which quadrant a coordinate will be in by looking at the signs of each coordinate point.
- ▶ ■ Plot a point in the coordinate plane and ask your child to identify the coordinates of the point. Start in Quadrant I and then move to other quadrants.



Your child can represent and use unit rates written as fractions with whole number numerators and denominators, in context.

- Write a ratio that describes a relationship between two quantities.
- Use ratios to describe a simple set of data in different ways.
- Use unit rate language in the context of a ratio relationship.
- Solve unit rate problems, for example those involving unit pricing and constant speed.

HELP AT HOME

- ▶ As your child shoots a ball into a garbage can or goal, have them record the outcomes on a frequency table. Determine the ratios for the number of hits to misses, misses to hits, misses to shots, hits to shots.
- ▶ ● When shopping, have your child determine the unit price of an item to determine the best price.



# OF SHOTS	HITS	MISSES
6		
10	/	
13	/	/
17	/ /	

HELPFUL HINT

A fraction is one way to write a ratio.

Your child can use ratios and rates to solve problems in context by reasoning with different representations.

- Generate, compare and find missing values of equivalent ratios using tape diagrams, double number lines, tables, and the coordinate plane.
- Use ratio reasoning to convert measurement units – money, time, length of an item.

RESOURCES

TAPE DIAGRAM

A juice mix contains 3 cups of apple juice for every 2 cups of grape juice. How much of each would we need to make a total of 10 cups?

Apple juice	2	2	2
Grape juice	2	2	

TABLES

How many cups of grape juice would we need if we had 6 cups of apple juice?

How many cups of apple juice would we need if we had 5 cups of grape juice?

Apple Juice (cups)	Grape Juice (cups)
	1
3	2
6	
	5

HELP AT HOME

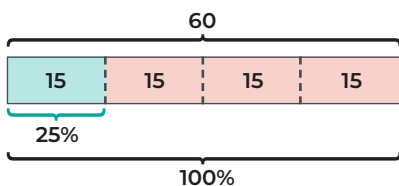
- ▶ While you cook, have your child make a table to show how much of one ingredient is needed to complete a recipe. Fill in the table to make larger and smaller batches.
- ▶ Find and justify the ‘best buy’ when shopping for an item. Point out different size packages that have different unit prices in the store.
- ▶ Use a calculator to calculate the unit price and compare (if displayed) to what is posted at the store.
- ▶ Have your child measure an item in feet, then ask them to convert this to inches.

Your child can find the percent of a quantity in context as a rate per 100 (e.g., 30% means $\frac{30}{100}$).

- Find the percent given the part and the whole.
- Find the whole given the part and the percent.
- Use tables, tape diagrams, and double number lines to reason about percents.

RESOURCES

TAPE DIAGRAM



DOUBLE NUMBER LINE

Jada has a new puppy. The vet says the puppy weighs 9lbs, which is 20% of its' expected adult weight. How much will the puppy weigh when it's fully grown?



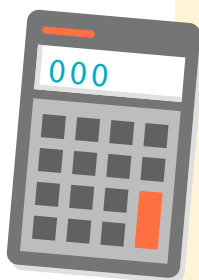
HELP AT HOME

- Help your child understand 'benchmark' percentages (5%, 10%, 25%, 50%) along with their fractional equivalents ($\frac{1}{20}$, $\frac{1}{10}$, $\frac{1}{4}$, $\frac{1}{2}$).
- Explain to your child that it's customary to provide a tip for certain services, in a restaurant, for instance. Demonstrate how to mentally calculate a 15% tip. For example, for a 15% tip on a \$40 bill, I know 10% is \$4 so 5% is \$2 (because 5 is half of 10 and 2 is half of 4), so 15% will be 10% + 5%, or \$4 + \$2 = \$6.



Your child can write numerical expressions using whole number exponents and use technology to evaluate them.

- Use exponents to re-write an expression with repeated multiplication.
- Use a calculator to evaluate expressions that have exponents.



HELP AT HOME

- **Review** multiplication of fractions with your child and discuss the results. For instance

$$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$$

what happened there? Emphasize that this problem can be written with an exponent:

$$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \left(\frac{1}{2}\right)^3 = \frac{1}{8}$$

- Have your child create a problem with a target as the answer. For instance, choose '28'. They can then write any problem they want with that as the solution:
 $5^2 + 3 = 28$.
Help them understand there is more than one way to hit the 'target' number.

Your child can write, read and evaluate expressions in which letters stand for numbers.

- Write expressions that record operations with numbers and with letters standing for numbers (e.g., “Subtract y from 5” would be written ‘5 - y’).
- Identify parts of an expression using mathematical language (e.g., sum, term, product, factor, quotient and coefficient).
- Evaluate expressions given specific values for the variables and a context.

HELP AT HOME

- ▶ Ask your child to write expressions you say, such as “the sum of x and three” would be written as “ $x + 3$ ” and “the product of 7 and the difference of y and 2” would be written “ $7(y - 2)$ ”.
- ▶ After your child has written the above responses, have them substitute a value for the variable and find the value of the expression.
- ▶  To support multilingual sixth graders, use home language to discuss vocabulary (e.g., variable, coefficient, etc.) first then in English to help your child make connections.

VOCABULARY

A **VARIABLE** is a letter used in math that can represent any number.

The sum of x and three	$x + 3$
The product of 7 and the difference of y and 2	$7(y - 2)$

Your child can apply the properties of operations to generate equivalent algebraic expressions and to identify when two expressions are equivalent.

- Apply the distributive property to an expression, e.g., $3(2 + x) = 6 + 2x$.
- Combine 'like' terms to simplify expressions, e.g., $y + y + y = 3y$.
- Determine whether two expressions are equivalent by using the same value to evaluate both.

$$5(3x + 2)$$

$$15x + 10$$

$$6 + 2x$$

$$3(2 + x)$$

$$4n + 20$$

$$4(n + 5)$$

HELP AT HOME

► Create a set of 'Memory' game cards. In pairs, write an expression, such as $5(3x + 2)$, on one card. Then write an equivalent expression, $15x + 10$, on the other card. Create multiple pairs then mixed the cards and lay them in a grid and have your child match the sets (e.g., $4(n + 5)$ would match with $4n + 20$). If your child flips two cards that do not match, then it is your turn to flip two cards. Continue until all matches have been made.

VOCABULARY

EQUIVALENT EXPRESSIONS

means equal expressions.

Your child can solve problems in context by writing and solving equations and inequalities and interpreting the solutions or solution sets in context.

- Write and solve 1-step equations of the form:

$$x + p = q, x - p = q, px = q, \frac{x}{p} = q$$

For cases in which p , q and x are all non-negative rational numbers.

- Write and solve 1-step inequalities of the form:

$$x + p > q, x - p > q, px > q, \frac{x}{p} > q$$

For $>$, $<$, $\leq$, or $\geq$, for cases in which p and q are non-negative rational numbers.

- Represent solutions or solution sets on a number line.
- Explain the solutions in a given context.



HELP AT HOME

- ▶ Write an equation or inequality that has a solution from 1-6. Have your child roll a die and determine if the number rolled is a solution.
- ▶ Ask your child to solve problems such as, if we buy two candy bars and a drink that costs \$2.50, and we spend \$5, how much did each candy bar cost?
- ▶ Ask your child to create a number line graph that represents situation where more than one solution would apply. For example, “you must be 3 feet tall to ride this ride” or “each pizza has at most 12 ounces of cheese.”

Your child can find the area of triangles, quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and quadrilaterals to solve problems.

- Calculate area of triangles and quadrilaterals when given the base and height.
- Calculate the base or height when given the area and height or base, using technology.
- Decompose (break down) polygons into triangles and quadrilaterals.

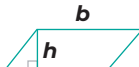
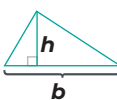


HELP AT HOME

- ▶   Using a plain piece of paper as a rectangle, have your child determine the area of the rectangle. Then cut the paper to create two equal triangles. Discuss that a triangle is half of a rectangle so the area of the triangle is half the area of the rectangle.
- ▶ Draw a regular hexagon on paper. Have your child decompose it into six equal triangles. Then have your child find the area of the hexagon by first finding the base and height of each triangle by measuring in centimeters. They will use that information to determine the area of each triangle. Then have your child find the sum of the six triangle areas or multiply the area of one triangle by six to get the total hexagon area.

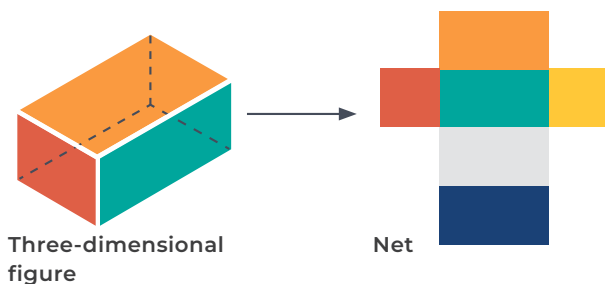
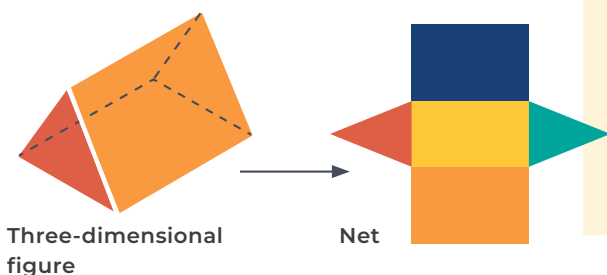
RESOURCES

AREA FORMULAS

NAME	SHAPE	FORMULA
Square		$A = s^2$
Rectangle		$A = lw$
Parallelogram		$A = bh$
Triangle		$A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$

Your child can represent three dimensional figures using nets made up of rectangles and triangles and use those nets to find the surface area of these figures to solve problems.

- Recognize that a net is a two-dimensional pattern that can be folded and joined along its edges to form a three-dimensional figure.
- Match nets with corresponding three-dimensional figures.
- Draw nets when given the name of a three-dimensional figure.
- Recognize that surface area is the total area of all faces of a three-dimensional figure.



HELP AT HOME

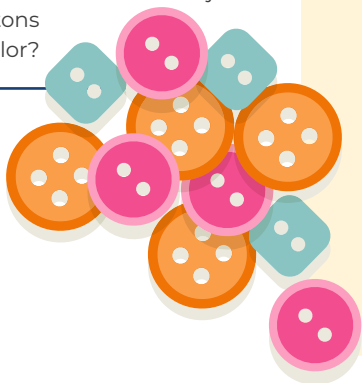
- ▶ Help your child cut an edge to a cereal box and flatten out the box, resulting in the box's net.
- ▶ Have your child find the least amount of wrapping paper it would take to cover the box. (This is the surface area of the box.)
- ▶ Make flashcards with the solid three-dimensional figure drawn or named on one side and the net drawn on the other. Encourage your child to look at all the attributes of the solid to determine what it is.
- ▶ Ask your child how many ways they can draw the net of a cube (there are 11!!)

Your child can recognize that a statistical question is one that anticipates a set of data with a variety of answers. They can collect data for these questions, represent them visually and describe their center, spread and overall shape.

- Recognize a statistical question.
- Develop a question that can be used to collect statistical information.
- Collect data to demonstrate the variety of data that can answer the question.

VOCABULARY

A **STATISTICAL QUESTION** is one that can be answered by collecting data and where there will be variability in the data. For example, Zeke has a jar of buttons he has collected over time. Statistical questions that could be asked about the jar of buttons include: What is the typical number of holes in the buttons in the jar? If Zeke grabbed a handful of buttons, what are the chances that all the buttons in his hand are round? What is the typical size of the buttons in the jar? How are the buttons distributed by color?

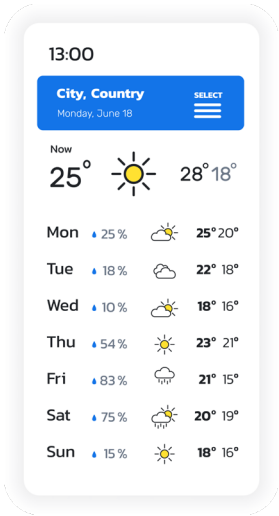


HELP AT HOME

- ▶ Write questions on strips of paper. Make some of the questions statistical (e.g., How many hours a week do you spend watching television?), and some not statistical (e.g., Who was the first President of the United States?). Let your child pull a strip of paper, read the question, and decide whether or not it is a statistical question. Have your child place the slips in two separate piles, statistical and not statistical.
- ▶ Help your child choose one of the statistical questions to ask other people. Your child needs to record the data responses and compare and contrast the results to the survey question by placing the information on a chart or graph and writing an interpretation of the information gathered.

Your child can use the language of probability to describe the likelihood of possible outcomes, and how this helps predict which responses may be more or less common.

- Anticipate variability in data collected from a statistical question.
- Make predictions about the outcome of an event based on calculated or given probability.
- Use the words 'likely', 'unlikely', 'certain' and 'impossible' to describe outcomes.



HELP AT HOME

- ▶ Read weather reports to determine how likely it is to rain, be warm enough to swim, or be cold enough to snow.
- ▶ Ask your child how likely it is to get heads or tails when a coin is flipped. Have them flip it 50 times and record their results in a tally chart. Stop after 10, 20 and 30 tosses to see how close they are to their prediction.
- ▶ Ask your child how the results of asking a statistical question like, “What are the ages of the children in my town” might yield different results if we only ask kids in their class vs. all the kids who enter a grocery store on a given weekend.
- ▶ To support multilingual sixth graders, use home language to discuss vocabulary (e.g., likely, unlikely, certain, impossible) first then in English to help your child make connections.



Your child can calculate or find a measure of center for a set of data that summarizes all the values and can calculate a measure of variation to describe its' spread. They can interpret these in terms of visual representations of the data.

- Describe a distribution of data in terms of center, spread and overall shape.
- Calculate mean and range and find the mode and median of a set of data.
- Relate the choice of measure of center and variability to the shape of the data and distribution relative to the context and how the data were gathered.

HELP AT HOME

- ▶ Using the computer or newspaper, have your child find a set of data from a recent survey, and determine the mean, median, and mode of the set of data.
- ▶ Have your child determine the range of a set of data from a table and a box plot or histogram. Ask your child to explain what this means in the context of the data.

VOCABULARY

MEAN is also known as the “average.” The mean is found by adding up all of the given data and dividing by the number of data entries.

MEDIAN is the middle number in the set of data. First, arrange the numbers in order from lowest to highest, then find the middle number by crossing off the numbers until you reach the middle.

MODE is the number that occurs most often in the set of data.

HELPFUL HINT

Review what a **QUARTILE** is with your child by relating it to money. The first quartile can be compared to 25 cents, the second quartile to 50 cents (half of the information) and the third quartile to 75 cents.

Your child can represent numerical data in plots on a number line, including line plots, histograms, and box plots.

- Organize and display data as a line plot, histogram, or box plot.
- Calculate extremes, range, median and interquartile range to create a box plot.

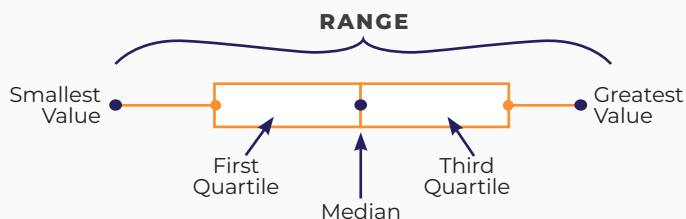
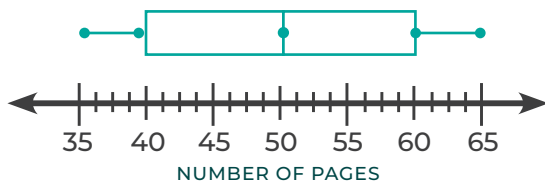
HELP AT HOME

- ▶ Have your child record how many pages are in 10 different books on a line plot.
- ▶ Next, have your child organize the information on a histogram.
- ▶ Then have your child organize the information on a box plot, being sure to mark the quartiles and extremes clearly.
- ▶ Last, have your child determine which is the easiest to read and shows the most relevance to the survey.

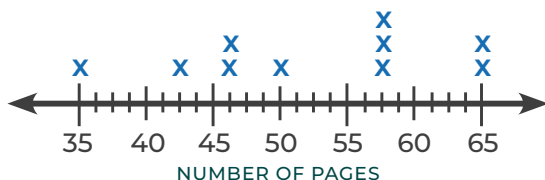


RESOURCES

BOX AND WHISKERS PLOT



LINE PLOT



HISTOGRAM

A Histogram is similar to a Bar Graph, but a histogram groups numbers into ranges, and there are no spaces between the “bars.”





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