

7TH

A FAMILY GUIDE FOR STUDENT SUCCESS

SEVENTH 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.

MARYLAND STATE DEPARTMENT OF EDUCATION

Carey M. Wright, Ed.D.

State Superintendent of Schools

Tenette Y. Smith, Ed.D.

Chief Academic Officer

Elise D. Brown, Ph.D.

Assistant State Superintendent, Instructional Programs

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Maryland State Department of Education

200 West Baltimore Street, Baltimore, MD 21201-2595

oeac.msde@maryland.gov

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.

TABLE OF CONTENTS

LITERACY 4

 Language..... 6

 Comprehension..... 8

 Speaking and Listening..... 18

 Writing..... 19

MATHEMATICS..... 20

 Number and Operation Sense 22

 Algebraic Thinking 25

 Geometric Reasoning and Measurement 29

 Reasoning with Data, Statistics, and probability.....31



LITERACY

In grade seven, your child will continue reading and writing, but, in addition to literature, they will read more texts that provide facts, and build their knowledge while drawing on their background knowledge, in areas such as science and social studies. They will read more challenging texts and be asked questions that will require them to refer back to what they have read. Your child will continue to develop the ability to cite relevant evidence when interpreting or analyzing a text or supporting their points in speaking and writing. There will also be an increased emphasis on building a strong vocabulary so that your child can read and understand challenging material. Your child will build academic vocabulary as they read more complex texts, including stories, plays, historical novels, poems, and informational books and articles. 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 7 level, including using context using context clues as well as Greek and Latin roots.

COMPREHENSION

- Using details and examples from the text (evidence) to support their understanding of what the text says directly and what is only suggested (inferences).



COMPREHENSION (CONTINUED)

- Determining the main idea or theme of a text, analyzing how the author develops it, and providing an accurate summary.
- Analyzing how the different parts of a story—such as the setting, characters, and plot—work together, and how the structure of a play or poem affects its meaning.
- Understanding how an author’s specific word choices (including figurative language) affect the tone and meaning, and contrasting different characters’ or narrators’ points of view.
- Comparing written texts to other versions (like film or audio), and contrasting fictional stories with historical facts to understand how authors adapt history.
- Evaluating arguments and specific claims in non-fiction texts by checking if the reasoning is sound and the evidence is strong enough.

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 when writing or speaking.

- Spell grade-appropriate academic and content words correctly in writing.
- Use a variety of sentence types (simple, compound, complex) to support expression of ideas when writing.
- Apply an understanding of punctuation to produce clear writing.

HELP AT HOME

- ▶ Encourage your child to read their writing aloud before finalizing it. This will help them notice when sentences end abruptly or go on for too long, or if punctuation needs to be added or removed.
- ▶ 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 sentences.



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.

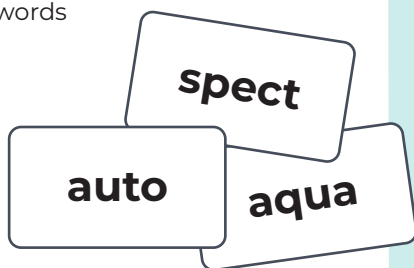
COMPLEX SENTENCE

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 apply multiple strategies to interpret unfamiliar academic and content words.

- Use context (the surrounding words and/or sentences) to determine the meaning of an unknown word.
- Use common grade-appropriate Greek or Latin roots as clues to the meaning of a word (belligerent, bellicose, rebel).
- Consult dictionaries, glossaries, or thesauruses, both print and digital to find the meaning of unknown words and phrases.



ADDITIONAL HELP AT HOME

▲ Write Greek and Latin roots on index cards. Ask your child to draw the top card. Then, each of you writes as many words as you can think of with that root, and see who can think of the most words with that root word.

HELP AT HOME

- ▶ Create a Word Jar. As you and your child find interesting words or phrases, drop them in the jar. Set aside a brief time when each of you will draw a word from the jar and use it as you have a conversation (For example, "I thought dinner was delicious, even though Bennie was disruptive.")
- ▶ Create a Greek and Latin roots jar filled with Greek or Latin roots and their meaning 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 of words 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.

COMMON GREEK & LATIN ROOTS

GREEK

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

LATIN

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

Your child can cite several pieces of textual evidence to support analysis of what the text says explicitly as well as what is suggested by the text (inferences).

- Analyze what a text says explicitly.
- Formulate inferences from textual material.
- Cite resources that support analysis of a text.

VOCABULARY

An **INFERENCE** is an idea that is drawn from the text. It is based on the details in the text and a reader's prior knowledge. It is not something that is directly stated. To infer is to make a guess about a passage based on what you read.

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 analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details. Your child can provide an accurate summary of the text based on this analysis.

- Recognize the theme or central idea.
- Identify supporting details.
- Develop an objective summary of the text.

ADDITIONAL HELP AT HOME

Complete a “Year in Review” notebook with the family. Keep an ongoing written record of family life by having each family member summarize important events that happen during the year. Add family photos when possible. Once a year, such as New Year’s Eve, sit together and review all of the things that have happened in your family over the last year. These notebooks will improve the writing skills of your child as well as become family keepsakes later on.



HELP AT HOME

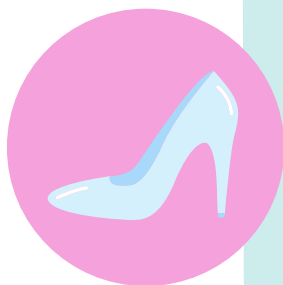
- ▶ After watching a play, movie, or musical, discuss with your child what the central message or theme might be. Ask them to support their idea with examples from the show.
- ▶ ▲ After watching a play, movie, or musical, discuss repeating words, ideas, or symbols and how those relate to the theme or 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)?

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.

Your child can analyze how particular elements of a literary text interact with one another (e.g., how setting shapes the characters or plot).

- Determine how the elements of a story relate to one another.
- Determine how the elements of a story interact to move the story along.
- Analyze characters' personality traits and actions to determine how they affect the setting, plot, theme, and other characters.
- Analyze characters' responses to events and interactions with others and how this affects setting, plot, other characters, and themes.



HELP AT HOME

► Help your student by discussing why the personality and background of characters are important to a story. Many times, your favorite TV or movie characters make decisions based on their set of values (e.g., Cinderella does not try to contact Prince Charming about her shoe because she is embarrassed that she is not who he thought she was). The making of these connections is important, as this will help your child make predictions and inferences.



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 specific word choice (e.g., alliteration) on meaning and tone.

- Determine how the author's use of words and phrases controls the meaning and tone of the text.
- Point out examples of figurative language, rhyme, connotative meanings, alliteration, etc., and discuss why the author chose to include them.

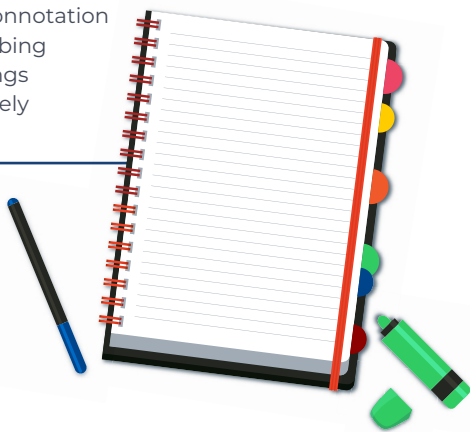
VOCABULARY

ALLITERATION refers to when two or more words in a row (or close together) start with the same beginning sound (busy bees buzzed).

CONNOTATION refers to a meaning that is implied by a word apart from the things which it describes explicitly. Words carry cultural and emotional associations or meanings in addition to their literal meanings, or denotations. For example: Describing someone as "childish" has a negative connotation of immaturity, while describing someone as "youthful" brings to mind a person who is lively and energetic.

HELP AT HOME

- Encourage your child to keep a vocabulary notebook. When they come across an unfamiliar word or phrase while reading, have them record it in the notebook. Direct your child to look up the meaning of the word using reference books or an online search. Ask your child to restate the explanation in their own words in the notebook, and draw an illustration of the term beside their explanation.



Your child can analyze how a drama's or poem's form or structure (e.g., soliloquy, sonnet) contributes to its meaning.

- Know that most plays are divided into acts and scenes.
- Know that each new scene in a play usually indicates a different time and place.
- Know that most poetry is a type of literature in which words are chosen and arranged to create a certain effect.



HELP AT HOME

- When reading poetry, have your child predict the meaning of the poem based only on the title. Next, have them come up with a one or two sentence paraphrase of the poem. Remind your child to look in the poem for meaning beyond the literal. Ask them to find and label examples of figurative language/literary devices. Have your child note changes in speakers and in attitudes throughout the poem.

KINDS OF POETRY

There are many types of poetry, but three of the major kinds are soliloquy, sonnet, and ballad.

A **SOLILOQUY** is a speech that one gives to oneself. In a play, a character talks to himself, thinking out loud so that the audience better understands the thoughts of the character.

A **SONNET** is a poem of 14 lines, typically having 10 syllables per line.

A **BALLAD** is a poem or song narrating a story in short stanzas.

VOCABULARY

A poem's **FORM** refers to the way a poem is laid out on the page, including the length and placement of the lines and the grouping of lines into stanzas.



Your child can analyze how an author develops and contrasts the points of view of different characters or narrators in a text.

- Keep in mind that every character or person has their own point of view, which affects how they see and talk about events.
- Know the narrator/speaker in a story tells events from their own point of view.
- Realize that events may be described differently, depending on whose point of view a story is being told from.



HELP AT HOME

- Encourage your child to use “The Most Important Thing” strategy. When reading, have them list two important ideas they understand about the author’s point of view/perspective and how it impacts the reader of the text. Then, have your child list the most important thing they learned from the text. This will build the connection between the author’s point of view and how it impacts what readers learn from the text.
- Encourage your child to orally discuss or write another viewpoint of their favorite story. What if it was told from the point of view of another character in the story? What if the villain was the narrator? How and why would the story be different?

Your child can compare and contrast a written story, drama, or poem to its audio, filmed, staged or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, camera focus and angles in a film).

- Identify how a visual presentation of a text supports the author's message.
- Know that the presentation of a text (e.g., visual or multimedia), enhances the reader's understanding of the text.
- Identify multimedia elements, including: lighting, sound, color, camera angles, and camera focus.



RESOURCES

The following novels have been made into films and may be considered appropriate for middle school students (not a complete list):

Bridge to Terabithia by Katherine

Paterson, *Charlie and the Chocolate Factory* by Roald Dahl, *Diary*

of a Wimpy Kid by Jeff Kinney, and *Harry Potter and the Sorcerer's Stone* by J.K. Rowling.

HELP AT HOME

- ▶ Take your child to a play or musical based on a written work that they have previously read. Discuss with your child the way the props, music, costumes, and actors' voices and movements bring the story to life. How does the lighting or background music change from scene to scene? Why?
- ▶ Discuss the ways you and your child think the film or stage version could have been improved. Ask your child questions such as: Did the scenery, casting, and music match the "picture" in your head from when you read the text? How could it have been changed to be more true to the original text, or do you think the changes improved the overall impression of the story?



Your child can compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same time, place, or character as a means of understanding how authors of fiction use and alter history.

- Understand that stories can share the same theme or topic even though the story elements may differ.
- Recognize that authors reveal the theme of a story by emphasizing a repeated message through characters and events in a story.



HELP AT HOME

- ▶ Suggest a variety of texts surrounding a common historical event that interests your child (e.g., the Dust Bowl, the sinking of the Titanic, the Civil Rights Movement) in order to help your child see how different authors vary in their approach to communicating the same theme. Make sure the texts are a mix of factual (non-fiction) and fictional (stories). This helps your child see how information from different sources can be combined to form a complete understanding of a topic, which is a critical skill for school projects and research.
- ▶ Visit your school or public library to check out a variety of texts.

VOCABULARY

The main purpose of **INFORMATIONAL TEXTS** is to inform or instruct the reader in some way. Informational texts are complex, teach about the natural or social world, and are associated with text features such as diagrams, charts, tables, photographs, and illustrations.

By the end of the year, your child can read and comprehend literature (including stories, dramas, and poems) and informational texts at the grade 7 range proficiently.

- Experience reading stories, drama, poetry, history, science, and technical texts.
- Comprehend grade-level literature at a proficient level when reading and working independently.



HELP AT HOME

- ▶ Offer your child incentives at home to read widely both at home and at school throughout the year. If your child has an interest in a certain series of books or books on a certain topic, make those texts readily accessible for them. Help your child acquire a public library card and encourage them to use it.
- ▶ Reach out to your child's teacher for more texts, material, and activities to help your child at home.

HIGHLIGHTING TEXT

Highlighting for a purpose can help your child improve comprehension. All you need to get started is a handful of different colored highlighters and a sample essay you have written (editorials from the paper will also work).

- Use one highlighter to mark the essay's main idea or topic sentence, and any sentences that support the main idea.
- Use a different color to mark all the other "points" and their corresponding sentences.
- Explain to your child what you are doing as you work and discuss with your child what you see when done.
- Explain that you may find that some ideas were not expanded upon enough, or that sentences need to be moved around (grouped by color) to make better sense.
- Help your child decide which supports belong with which main idea and match the evidence to the claims.
- Have your child use this strategy to edit their own work.



Your child can trace and evaluate the argument and specific claims in an informational text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.

- Know that authors include details, in the form of reasons and evidence, which support and bring validity to particular points in an informational text.
- Identify which evidence supports which points.
- Examine sources and authors' opinions for credibility.

HELP AT HOME

► Teens can be challenging! Use that to your advantage. When disagreements arise, ask your child to put their reasons and supporting evidence into words by writing a short argument. As the parent/guardian, you do the same. Read each other's arguments and discuss which reasons are "good" and which are not. You can even take it a step further and each write a rebuttal in response to the original arguments. This is a great way to provide a "real-life" purpose for your child's writing.

Your child can participate in discussions by analyzing and responding to others' ideas and reasoning on grade 7 topics and texts.

- Participate in collaborative discussion one-on-one, in groups, and teacher-led.
- Come to discussions having read or studied materials.
- Identify the main ideas 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, as well as logically structured informational 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.
- ▶ Provide a writing toolkit that includes pencils, pens, paper, highlighters, and/or sticky notes.
- ▶ ■ Remind your child to carefully read each writing assignment looking for what they are being asked to write, who they are writing for (audience), and what the purpose is for this writing piece.
- ▶ ▶ 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, jot notes, or create charts in their home language before writing.



MATHEMATICS

In seventh grade, your child will use what they learned in sixth grade about the relationships between positive and negative numbers to add, subtract, multiply and divide opposite signed numbers. They will continue their journey with proportional relationships by exploring constant rates of change and how these can be represented visually. They will gain fluency in solving two-step equations, learning multiple solution paths and distinguishing between them to find the most efficient method for a given context. In Grade 7, students will deepen their understanding of proportionality by developing formulas to find the circumference and area of circles and extending their understanding to cones and cylinders in three dimensions. Their work with data and statistics will focus on probability and how to calculate the theoretical probability of an outcome which they can then test by gathering data.

NUMBER AND OPERATION SENSE

- Fluently add, subtract, multiply and divide positive and negative rational numbers.
- Use estimation strategies to check the reasonableness of a solution.
- Fluently convert between decimals, fractions and percents.

ALGEBRAIC THINKING

- Given a specific context, write and solve an equation of the form $px + q = r$ where p , q and r are all rational numbers.
- Select and apply efficient solution paths when solving equations and inequalities.
- Explore the constant ratios between input/output pairs to determine proportional relationships.



ALGEBRAIC THINKING (CONTINUED)

- Graph proportional relationships and use the graph to determine the unit rate.

GEOMETRIC REASONING & MEASUREMENT

- Determine the area and circumference of a circle.
- Find the surface area and volume of cylinders, cones and spheres.

REASONING WITH DATA, STATISTICS, AND PROBABILITY

- Determine whether a sample is representative of the population being surveyed.
- Use data visualizations and summary statistics to compare populations.
- Estimate the probability of an event given a context or relative frequency data.
- Determine the theoretical probability of an outcome of an event.

Your child can add and subtract rational numbers using multiple strategies and representations.

- Describe situations in which opposite quantities make zero.
- Model the addition of rational numbers as movement along a number line.
- Rewrite subtraction as addition using the additive inverse ($2 - 3 = 2 + (-3) = -1$)
- Use context to understand the process of adding and subtracting rational numbers.

HELP AT HOME

- ▶ Use a thermometer to help your child understand adding and subtracting on a number line.
- ▶ Determine answers to problems with context. For example, in a football game, the team lost 6 yards on first down and then gained 3 yards. Now they need $10 - (-6) + 3 = 13$ yards to get another first down.
- ▶ Ask your child to share their strategy for solving. Your child can share their strategy verbally or in writing.



Your child can multiply and divide rational numbers using multiple strategies and representations.

- Model multiplication of rational numbers using number lines, arrays or area models.
- Interpret quotients of rational numbers in context and represent division of signed numbers in different forms.
- Use properties of operations to multiply and divide rational numbers flexibly and efficiently.
- Use context to understand the process of multiplying and dividing rational numbers.

HELP AT HOME

- ▶ Ask your child questions such as, If I owe someone \$20, and I pay them back \$7, how much do I still owe and how can I pay that back in two more payments? Is there more than one way to pay them back?
- ▶ Create a Memory Game with your child that has 10-15 problems on one set of notecards and the solutions on another. Create a grid of the problems and another of the solutions. Have them try and find matches and explain how they know they've found a match.
- ▶ ■ With a calculator, review with your child how to convert a fraction to a decimal, making sense of the answer and whether the decimal repeats or terminates.
- ▶ ▲ Ask your child to solve the problem in two different strategies and compare and contrast the strategies.

Your child can solve real-world and mathematical problems involving the four operations with rational numbers.

- Apply properties of operations to efficiently compute with rational numbers.
- Evaluate the reasonableness of solutions using estimation, mental math and understanding of the context of the problem.



HELP AT HOME

- ▶ Ask your child questions that make use of positive and negative numbers and fractions, decimals or percents. For example: If an oil well rig drills for 8 hours and reaches a depth of 60 feet (-60), how deep would it go if it drilled another 15 hours?
- ▶ Ask your child to share their strategy for solving. Your child can share their strategy verbally or in writing.

Your child can identify proportional relationships between quantities.

- Test for equivalent ratios in a table or by graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
- Identify the unit rate in tables, graphs, equations, diagrams and descriptions of proportional relationships.
- Create a table of values, an equation, and a graph that represent a description of a proportional relationship.



HELP AT HOME

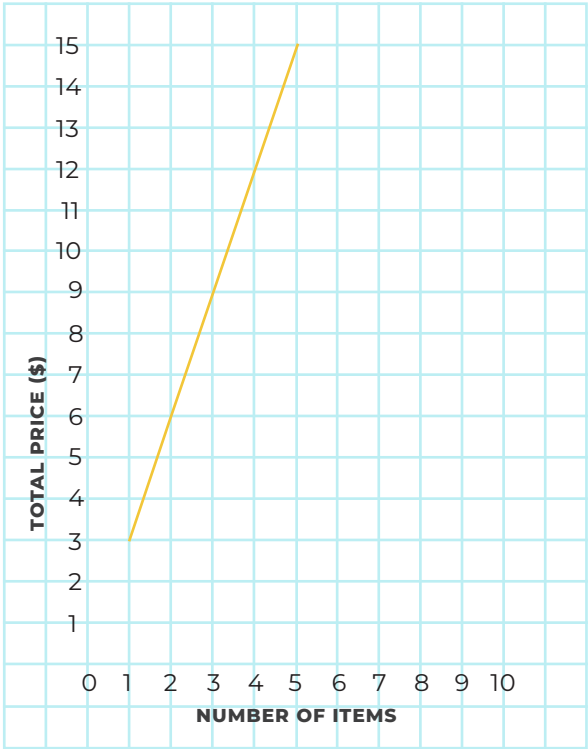
- ▶ Make a table with your child to show the distance traveled each hour by a car that's traveling at a constant speed. Make a graph of the ordered pairs and write an equation to match the graph and table. Ask your child what's the same and what's different about each of these representations.
- ▶   Bake and cook together. Ask your child about situations that are proportional and non-proportional. For instance,
 - If we need $\frac{3}{4}$ c of butter for 1 batch of cookies, how much would we need for 3, 4 or 5 batches?
 - If it takes 12 minutes to cook 3 cookies, how long would it take to cook 12 cookies?

Your child can represent proportional relationships between quantities.

- Represent proportional relationships using equations.
- Explain what a point on the graph of a proportional relationship is in terms of the context.
- Describe what the point (0,0) means in the situation provided.
- Identify the point (1, r) where ‘r’ is the unit rate and discuss this meaning in context.

HELP AT HOME

► Create a graph with your child to show the total price of a \$3 item if you purchase 2, 4, or 5. What if we don't buy any (zero)? Where is that on the graph? Where do you see the unit price? How could we write an equation for this?



Your child can solve ratio and percent problems in context, like simple interest, tax, markups, markdowns, tax and tips by applying proportional reasoning.

- Use a calculator to solve multi-step ratio problems.
- Set up and solve multi-step problems and explain the solution in the context of the problem.



HELP AT HOME

- ▶  Explain to your child how tips are calculated based on the total bill for a service or in a restaurant. Share your method of calculating a 10%, 15% or 20% tip and let them practice with different billed amounts.

Your child can use variables to represent quantities and write and solve equations to model and reason about relationships in a given context.

- Write equations given a context.
- Solve equations flexibly and efficiently. Explain the solution process and how it connects to the original given context.
- Interpret the solution in terms of the context.

HELP AT HOME

- ▶ Discuss situations where you need to reason about a solution in a given context:
 - If a parking garage charges \$8 for the first hour, and \$3 for each additional hour, how much would they charge for 6 hours total? Is there more than one way to find the solution?
 - If a taxi charges \$2.50 for the first $\frac{1}{2}$ mile, and then \$0.50 for each additional mile, how much would you expect to pay to go 5 miles? What would be the total if we wanted to provide a 10% tip?

Your child can use variables to represent quantities and write about and solve inequalities to model and reason about constraints and conditions in a given context.

- Write inequalities given a specific context.
- Solve multi-step inequalities.
- Graph the solution set of an inequality on a number line.
- Interpret the solution set in terms of the context by describing what values are possible or reasonable.

HELP AT HOME

► Ask your child to work out the solution to a problem that has several possible outcomes. For instance, if they want to buy a bike that costs \$100, and they can wash windows for \$2 per window and use \$15 they've already saved, how many windows do they need to wash to be sure they've got enough money? What happens if we need to account for tax? What happens if we wash MORE than that number of windows?



VOCABULARY

An **EQUATION** states that two values or expressions are equal to each other using the equal (=) sign.

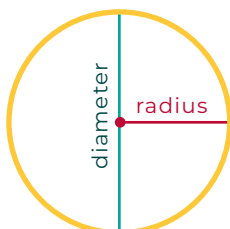
An **INEQUALITY** is a mathematical statement that compares two values or expressions that are not equal to each other. Inequalities use the greater than (>), less than (<), greater than or equal to (insert symbol) or less and or equal to (insert symbol) symbols.



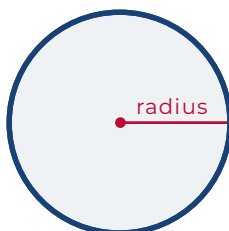
Your child can apply the formulas for the area and circumference of a circle to solve problems in context. They can use informal reasoning and visual models to explain the relationship between the circumference and area of a circle.

- Use technology to assist in the calculation of the circumference and area of circles.
- Write an answer in terms of π when instructed.

RESOURCES



CIRCUMFERENCE
 $C = 2\pi r$ OR $C = d\pi$



AREA
 $A = \pi r^2$

HELP AT HOME

- ▶ Have your child use a measuring tape to measure the diameter and circumference of various circular objects – different size cans, etc. Have them keep track of these measurements in a table. Then ask them to divide the measured circumference by the diameter to see if there's a proportional relationship.
- ▶ Ask them to estimate the circumference of a circle if the diameter is a given amount.
- ▶ To support multilingual seventh graders, use home language to discuss vocabulary (e.g., area, circumference, diameter, radius, etc.) first then in English to help your child make connections.

Your child can solve mathematical problems with or without context involving area, surface area and volume of two and three-dimensional objects.

- Solve problems involving the area, surface area and volume of triangles, quadrilaterals, pyramids and prisms.
- Solve problems involving volume of curved surface objects, including cones, cylinders and spheres.
- Interpret and justify solutions in a given context by estimating and checking for reasonableness and explaining how the result applies in context.



HELP AT HOME

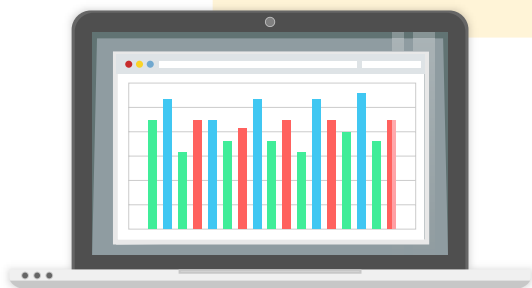
- ▶ Have your child determine the volume of a cereal box. Then ask your child to determine the surface area of the box by finding the sum of the area of each face. Repeat with various size boxes that would involve fraction measurements.

Your child can use data from a random sample to make and evaluate estimates or predictions about a population.

- Decide whether a sample is representative of a population by explaining how it was selected and how that selection affects the accuracy of conclusions.
- Use data from a single random sample to estimate an unknown characteristic of a population.
- Generate and compare multiple random samples to assess how reliable an estimate or prediction is.

HELP AT HOME

- ▶ Using graphs found on the internet, have your child interpret the results. Use these interpretations to draw conclusions.
- ▶ Have your child estimate the number of pages in a novel by doing a random sample in a bookstore. Ask your child to compare this to what they'd expect in a book for children vs. adults.



Your child can compare two numerical data distributions using visual displays to draw conclusions between populations.

- Use histograms and other visualizations (e.g., boxplots) to describe similarities and differences in the range and clustering of the data.
- Use measures of center (mean or median) and variability (range) to describe the size and significance of the distributions.
- Use both visual and numerical comparisons to describe how different the two groups are and whether the difference makes a difference given the context.

HELP AT HOME

► Have your child compare the statistics for a given basketball player in a regular season game vs. a playoff game. Is there any difference in the outcome?

Your child can understand that probability is expressed as a value between 0 and 1, and the closer it is to 1 the more likely an outcome. They can use this to examine data gathered over time to make predictions about the future.

- Use data collection or simulation to approximate the probability of a chance event.
- Use a known or estimated probability (chance of heads on a coin) to evaluate whether the number of outcomes in a given number of trials is reasonable.
- Use a visual representation to compare and interpret probabilities.

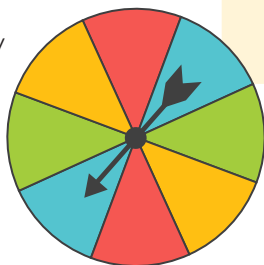
HELP AT HOME

► Have your child predict how many times a certain number will occur when you roll dice or a number cube (theoretical). Then have your child do the experiment and compare the actual results (experimental) to the theoretical probability.



Your child can develop and use probability models to find probabilities of events and compare them to observed results.

- Determine the probability of all events in a known situation to calculate how many times a specific outcome will occur in a set number of trials.
- Determine the probability of all events given a number of trials and use this information to estimate the probability of future outcomes.



HELP AT HOME

- ▶ ● Develop various activities for your child to conduct to determine probability of events. For example: make a spinner and determine if outcomes are fair. Are spaces the same size? Are there equal chances for each choice?



Carey M. Wright, Ed.D.
STATE SUPERINTENDENT OF SCHOOLS

OFFICE OF TEACHING AND LEARNING

Tenette Y. Smith, Ed.D.
Chief Academic Officer

Elise D. Brown, Ph.D.
Assistant State Superintendent, Instructional Programs



Maryland State Department of Education

200 West Baltimore Street,
Baltimore, MD 21201-2595

Phone: (410) 767-0100 Deaf and hard of hearing use Relay
marylandpublicschools.org