

FLORIDA'S BENCHMARKS FOR EXCELLENT STUDENT THINKING STANDARDS

Parent Guide for Grade 6 Accelerated Mathematics

The Benchmarks for Excellent Student Thinking (B.E.S.T.) Standards for Mathematics are the state's mathematical standards that pave the way for Florida students to receive a world-class education and prepare them for a successful future.

Education leaders from across the state came together to develop Florida's B.E.S.T. Standards for Mathematics. These standards and benchmarks are goals that students are expected to achieve by the end of the school year. A standard is an overarching criterion for a grade level or grade band. A benchmark is a specific expectation or skill for the grade level or grade band that falls within a standard. The B.E.S.T. Standards are designed to ensure that ALL students reach their greatest potential.

THESE STANDARDS WERE WRITTEN TO:

Provide clarity on the grade-level expectations for educators, parents and students.

Allow students flexibility to solve problems using a method/strategy of their choice.

Allow for student discovery (i.e., exploration) of strategies rather than the teaching, naming and assessing of each strategy individually.

Preparing your student for success begins in Kindergarten and continues as your child progresses through each grade. This guide will support parents, guardians and families with students in Grade 6 Accelerated by helping them:

- ☐ **LEARN** about the B.E.S.T. Standards for Mathematics and why they matter for your student.
- ☐ **UNDERSTAND** important educational (academic) words that you will see in your student's grade-level standards and benchmarks.
- ☐ **TALK** with your student's teacher about what they will be learning in the classroom.
- ☐ **LOCATE** activities and resources to support your student's learning in practical ways at home.



Learn About the Grade 6 Accelerated Mathematics Standards

This table describes the areas of emphasis within Grade 6 Accelerated and provides examples of specific expectations within each area of emphasis. The purpose of the areas of emphasis is not to guide specific units of learning and instruction but rather provide insight on major mathematical topics that will be covered within the grade level. The table below is not in any set order in which areas should be taught. Areas of emphasis may be taught in any order, combined with others and taught throughout the year.

Area of Emphasis	Examples
Perform all four operations with integers, positive decimals and positive fractions with procedural fluency.	<ul style="list-style-type: none"> <input type="checkbox"/> Understand the meaning of negative numbers. <input type="checkbox"/> Plot, order and compare rational numbers (fractions, decimals, integers, etc.). <input type="checkbox"/> Interpret the absolute value of a number as the distance from zero on a number line. <input type="checkbox"/> Add, subtract, multiply and divide positive rational numbers. <input type="checkbox"/> Rewrite positive numbers in different but equivalent forms (fractions, decimals and percents).
Explore and apply concepts of ratios, rates and percent to solve problems.	<ul style="list-style-type: none"> <input type="checkbox"/> Write and interpret ratios ($\frac{a}{b}$, $a:b$, a to b). <input type="checkbox"/> Calculate and interpret unit rate. <input type="checkbox"/> Use ratios to solve problems involving percents (e.g., What is 20% of 50?). <input type="checkbox"/> Solve conversions within the same measurement system.
Create, interpret and use expressions and equations and inequalities.	<ul style="list-style-type: none"> <input type="checkbox"/> Translate written descriptions into algebraic expressions and translate algebraic expressions into written descriptions. <input type="checkbox"/> Add and subtract linear expressions with rational coefficients. <input type="checkbox"/> Write and solve one-step equations and inequalities. <input type="checkbox"/> Write an inequality that represents a real-world situation.
Extend geometric reasoning to plotting points on the coordinate plane, area and volume of geometric figures.	<ul style="list-style-type: none"> <input type="checkbox"/> Plot positive and negative numbers in all four quadrants and on both axes. <input type="checkbox"/> Find the area of a triangle, trapezoid, parallelogram and rhombus. <input type="checkbox"/> Find the area of quadrilaterals and composite figures by decomposing them into triangles and rectangles. <input type="checkbox"/> Find the surface area and volume of right rectangular prisms and right circular cylinders.
Extend understanding of statistical thinking to represent and compare categorical and numerical data.	<ul style="list-style-type: none"> <input type="checkbox"/> Recognize and create a statistical question that would generate numerical data. <input type="checkbox"/> Find and interpret mean, median, mode and range. <input type="checkbox"/> Interpret numerical and categorical data; create graphical representations (box plots and histograms). <input type="checkbox"/> Compare the probabilities of chance events. <input type="checkbox"/> Find the theoretical and experimental probability of an event related to a simple experiment.
Develop an understanding of and apply proportional relationships in two variables.	<ul style="list-style-type: none"> <input type="checkbox"/> Determine whether two quantities have a proportional relationship, using a table, graph or written description. <input type="checkbox"/> Given a mathematical or real-world situation, find the constant of proportionality.

B.E.S.T. Instructional Guide for Mathematics

The B.E.S.T. Instructional Guide for Mathematics (B1G-M) is intended to assist educators with planning for student learning and instruction aligned to Florida's Benchmarks for Excellent Student Thinking (B.E.S.T.) Standards. This guide is designed to aid high-quality instruction through the identification of components that support the learning and teaching of the B.E.S.T. Mathematics Standards and Benchmarks. The B1G-M can be utilized by parents, guardians and families to support learning at home through the Instructional Strategies section.

This document is posted on the B.E.S.T. Standards for Mathematics webpage (<https://www.fldoe.org/academics/standards/subject-areas/math-science/mathematics/bestmath.stml>) of the Florida Department of Education's website and will continue to undergo edits as needed.

Mathematical Words to Know and Use in Grade 6 Accelerated

Area	Cube	Histogram	Number Line	Random Sampling	Simulation
Base (of an exponent)	Customary Units	Integers	Origin	Rate	Statistical Question
Box Plot	Data	Least Common Multiple (LCM)	Outlier	Rational Number	Stem-and-Leaf Plot
Categorical Data	Equation	Line Plot	Parallelogram	Reciprocal	Theoretical Probability
Cluster	Experimental Probability	Linear Expressions	Polygon	Rectangle	Trapezoid
Coefficient	Exponent	Measures of Center (mean, median, mode)	Prime Factorization	Rectangular Prism	Triangle
Composite Number	Expression	Measures of Variation (range, interquartile range [IQR])	Prime Number	Rectangular Pyramid	Unit Rate
Constant of Proportionality	Factor	Metric Units	Proportional Relationships	Rhombus	Whole Number
Coordinate Plane	Greatest Common Factor (GCF)	Net	Quadrant	Sample Space	X-Axis Y-Axis

This is not a comprehensive list – please access the 6-12 Glossary.

To access the full K-12 Mathematics Glossary, visit <https://cpalmsmediaproduct.blob.core.windows.net/uploads/docs/standards/best/ma/appendixc.pdf>.

Support Learning at Home

You can encourage learning mathematics at home in ways that are fun for you and your student. Try these ideas after school, on weekends and during the summer:

- ✓ Practice vocabulary utilized within the Grade 6 Accelerated course. Encourage math discourse within your family.
- ✓ Discuss the use of positive and negative numbers used in everyday life. For example, temperature falling below zero, banking deposits and debts, or gains and losses in football.
- ✓ Find the unit rate of an item while grocery shopping. For example, if you buy 5 pounds of apples for \$10, the unit rate is calculated as $\$10 \div 5 \text{ pounds} = \2 per pound . So, each pound of apples costs \$2.
- ✓ Solve for unit rate of real-world scenarios such as miles per hour, hourly job wage, internet speed, etc.
- ✓ Take a trip to the store. Have them calculate the sale price of an item. For example, a jacket originally priced at \$120 is on sale for 20% off, calculate the sale price. [Answer = \$96]
- ✓ When out at a restaurant have them calculate the sales tax and tip for the restaurant bill. For example, if you have a restaurant bill of \$50 with a sales tax of 8% and you leave a 15% tip. [Answer = \$62.10]
- ✓ Explore using inequalities through discussions utilizing the terms at least, no more than, less, maximum, etc. For example, if a classroom can hold a maximum of 30 students and n is the number of students enrolled, the inequality is: $n \leq 30$.
- ✓ Decomposing composite figures is an important skill throughout all math courses. Have students decompose a figure by determining what smaller shapes they can create. For example, draw an L-shaped figure. You can decompose the figure into two rectangles and find the area of each rectangle. After finding the area, add them together for the total area of the composite figure.
- ✓ Practice finding the volume of rectangular prisms (e.g., cereal box) in your home. First measure the length, width and height of the box. The volume (V) of the rectangular prism is calculated using the formula $V = l \times w \times h$.
- ✓ Explore finding the surface area (SA) of the rectangular prism. Unfold the cereal box to create a two-dimensional net of the rectangular prism, then find the area of all rectangles and add them together.
- ✓ As a family, track the number of minutes doing an activity (e.g., watching TV, playing a sport) for a week. Create a histogram and discuss the data.

Talk with Your Student's Teacher

Think about a parent-teacher conference as a “team meeting” in which you will discover the special contributions each of you bring to your student's success. Here are some questions you could ask to prompt discussions:

What topic is my student currently working on? Which have they mastered? How can I support them at home?

In the area of mathematics, what are my student's strengths? How are those strengths supported during instruction? Where is my student struggling and how can I help?

Can my student show you that they understand what they are learning about through manipulatives, drawing, talking and writing? If not, what challenges are they facing?

What additional resources can I use at home to support my student's mathematical learning?

What behaviors should I see when my student is doing math? Can I see an example of the type of problems my student is given? How can I support them at home?

Mathematical Thinking and Reasoning Standards (MTRs)

Florida students are expected to engage with mathematics through the Mathematical Thinking and Reasoning Standards (MTRs). These standards are written in clear language so all stakeholders can understand them and teachers can assist students to use them as self-monitoring tools. The MTRs promote deeper learning and understanding of mathematics. By understanding the MTRs, parents, guardians and families can support the development of these skills at home.

MA.K12.MTR.1.1 Actively participate in effortful learning both individually and collectively.		MA.K12.MTR.2.1 Demonstrate understanding by representing problems in multiple ways.	
MA.K12.MTR.3.1 Complete tasks with mathematical fluency.		MA.K12.MTR.4.1 Engage in discussions that reflect on the mathematical thinking of self and others.	
MA.K12.MTR.5.1 Use patterns and structure to connect mathematical concepts.	MA.K12.MTR.6.1 Assess the reasonableness of solutions.		MA.K12.MTR.7.1 Apply mathematics to real-world contexts.

Your student will develop the above skills (MTRs) throughout their education and during their life. These skills will help maintain positive relationships through effective communication, collaboration, conflict resolution and problem solving.

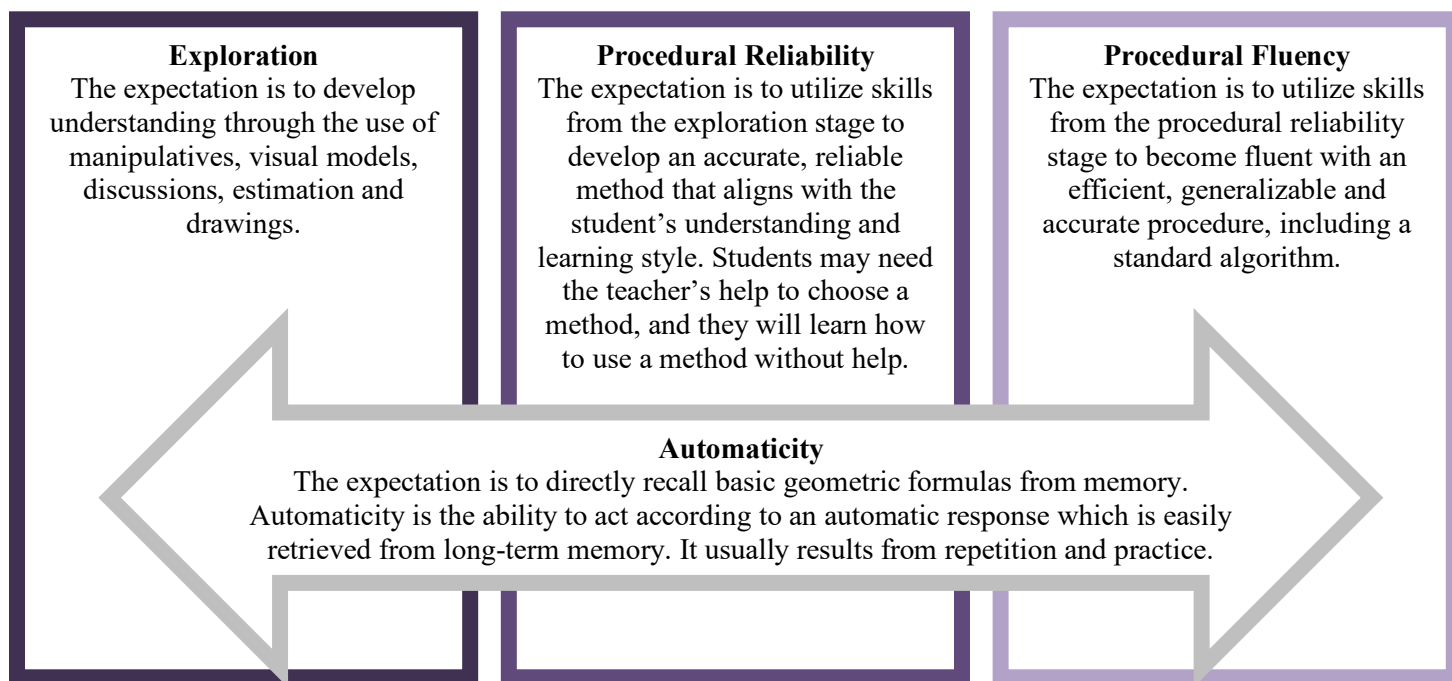
Below are some ways you can help develop mathematical thinking and reasoning skills for your Grade 6 Accelerated student:

- ✓ Encourage your student to ask questions when they do not understand what is being asked of them.
- ✓ Ask your student to estimate before determining a solution to the task at hand.
- ✓ Identify a problem and create a plan to tackle it in smaller steps that are more manageable.
- ✓ Try activities like a scavenger hunt or a puzzle.

By helping to develop your student's mathematical thinking and reasoning skills, you will prepare them to become a confident, independent and successful individual.

Fluency

Building a strong numeracy foundation is critical to every child's mathematical success. The B.E.S.T. Standards for Mathematics were developed to allow skills to build upon one another within a grade level as well as from one grade to the next. Benchmark expectations have been developed with a hierarchy in mind consisting of three stages: exploration, procedural reliability and procedural fluency. The three stages illustrated below show the stages students may work through when learning new skills and concepts.



In Grade 6 Accelerated, students are expected to be **PROCEDURALLY FLUENT** when:

1. Multiplying and dividing positive fractions by positive fractions, including mixed numbers.

For example, determine the product of $\frac{3}{5}$ and $\frac{4}{9}$. [Answer: $\frac{12}{45}$ or an equivalent answer such as $\frac{4}{15}$ or the approximate answer of 0.267]

2. Adding and subtracting integers.

For example, $-8 + 2$. [Answer: -6]

3. Multiplying and dividing integers.

For example, find the quotient of -42 and -6. [Answer: 7]

4. Adding, subtracting, multiplying and dividing rational numbers (fractions, decimals, negatives, etc.).

For example, $-\frac{5}{8} + 2\frac{2}{3}$. [Answer: $2\frac{1}{24}$ or an approximate answer; 2.04167]