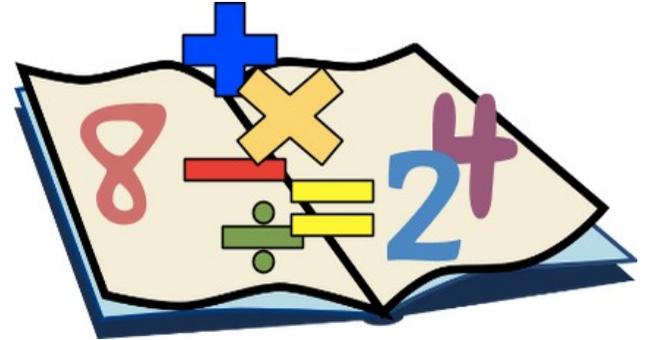


Math Parent Roadmap



Supporting your child in fifth grade

Did you like attending math classes as a student? Were you a confident math student? Often times when people are asked these questions, the most common response is that they were not so good at math or that they didn't like math class at all. Only a few people will actually say that they loved math or that they were good at it. We want to change that story!

Benton Elementary School is constantly working to improve math instruction for students.

Benton Elementary School (BES) is constantly working to improve mathematics instruction for students. Teachers intentionally plan lessons that engage students in problem solving, conceptual understanding, and mathematical applications. Using grade level math standards, BES teachers are able to identify exactly what each student knows, is ready to learn, and what comes next in the learning progression. The standards indicate the level of quality and achievement that is considered proficient or secure.

This document outlines the math curriculum at each grade level. While every grade level develops most math concepts, this document focuses on the most critical areas at each level. Math concepts are revisited and extended throughout your child's BES educational career.

*Math Practices
are what the
students are doing
as they learn the
content standards
and will be
embedded into
daily math
experiences.*

The Math Practices involve students:

1. Making sense of problems and persevering in solving them
2. Reasoning through problems
3. Constructing viable arguments and critiquing the reasoning of others
4. Modeling with mathematics
5. Using appropriate tools strategically
6. Attending to precision
7. Looking for and making use of structure
8. Looking for and expressing regularity in repeated reasoning



Academic standards are important because they help ensure that all students, no matter where they live, are prepared for success in college and the workforce. They help set clear and consistent expectations for students, parents, and teachers; build a child's knowledge and skills; and help set high goals for all students.

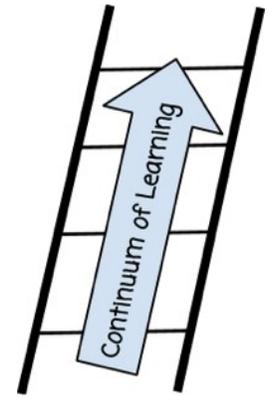
Of course, high standards are not the only thing needed for our children's success, but standards provide an important first step - a clear roadmap for learning for teachers, parents, and students. Having clearly defined goals helps families and teachers work together to ensure that students succeed. Standards help parents and teachers know when students need extra assistance or when they need to be challenged even more.

-The National PTA

In grade four, students stretched their understanding of multiplication and division through multiplying and dividing multi-digit whole numbers. A problem solving emphasis was placed on multiplicative comparison problems where one factor was compared as a number of “times” greater or lesser than the other factor. Fourth graders also developed an understanding of fraction equivalence and fraction operations. Fourth graders used this understanding of fractions to add and subtract fractions with same denominators and multiply a fraction by a whole number. All of these operations were learned using visual strategies and math reasoning.

In grade five, students will continue to develop an understanding of strategies for whole number and decimal operations. For most students, fifth grade will be the time when they are ready to formalize and use a standard algorithm for multiplication and division. In addition, students will continue to use their reasoning skills and mental math strategies to determine when the standard algorithm may be the most efficient strategy. Also in grade five, students will extend their thinking about operations of fractions to include adding and subtracting fractions with unlike denominators and multiplying and dividing fractions. This work is done with visual models to ensure students understand the standard algorithm when it is introduced later. In addition to these critical areas, students will continue to extend their thinking about geometry by classifying shapes based on their attributes and using measurement to solve problems involving volume.

Here are just a few examples of how your child will develop math skills across grade levels.



Examples of Grade Five Word Problems

Jessa has 22 one-dollar bills that she wants to divide equally between her 4 children. How could she divide the bills? *Students should be able to solve using reasoning or models.

Ed bought a drink for \$1.50 and a sandwich for \$2.75. He has \$13.50 left. How much did he start with? *Students should be able to solve using the standard algorithm.

A meteor is traveling at 2.9 meters per second. How far does it travel in 0.75 seconds? *Students should be able to solve using the standard algorithm.

Whole Numbers/Decimals and Solving Problems

Earlier Learning

- Multiply and divide multi-digit whole numbers
- Understand factors and multiples
- Fluently add and subtract multi-digit numbers using the standard algorithm
- Solve multi-step word problems involving addition, subtraction, multiplication and/or division, including multiplicative comparison

Grade Five Math

- Add, subtract, multiply and divide whole numbers and decimals
- Fluently multiply using the standard algorithm
- Write and interpret numerical expressions
Example: $6[(4 \times 5) + (10 - 3)]$
- Solve word problems involving the four operations with decimals

Next Steps

- Add, subtract, multiply and divide whole numbers and decimals.
- Fluently divide multi-digit numbers using the standard algorithm.
- Find the greatest common factor between two whole numbers and the least common multiple between two whole numbers less than 12

Fraction Operations

Earlier Learning

- Explain, recognize, and generate equivalent fractions
- Compare and order fractions
- Build unit fractions into a whole and decompose (break apart) a whole into fractions
- Add and subtract fractions with same denominators
- Multiply a fraction by a whole number

Grade Five Math

- Add and subtract fractions with different denominators
- Multiply a fraction by a whole number or another fraction using models and number sentences
- Interpret a fraction as division of the numerator by the denominator
- Divide fractions by whole numbers and whole numbers by fractions using models
- Solve problems using addition, subtraction and multiplication of fractions

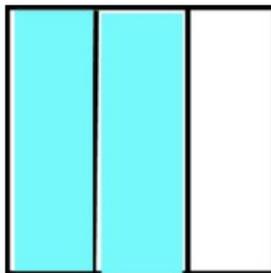
Next Steps

- Divide fractions by fractions
- Solve problems using division of fractions
- Use ratio language to describe a ratio relationship between two quantities
- Solve problems using ratio and rate reasoning

Models for Multiplying Fractions

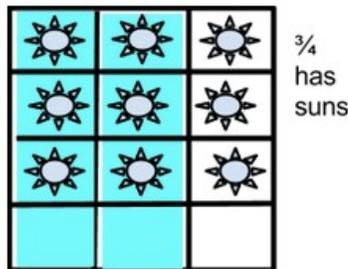
What is $\frac{3}{4} \times \frac{2}{3}$? *We can also ask what is $\frac{3}{4}$ of $\frac{2}{3}$?

I can show $\frac{2}{3}$ using an open array:



$\frac{2}{3}$

Then I can show $\frac{3}{4}$ of that fraction:



$\frac{3}{4}$ has blue

$\frac{6}{12}$ (or $\frac{1}{2}$) of the squares are both blue and have suns

Models for Dividing Fractions

What is $3 \div \frac{1}{4}$?

I can show 3 on the number line:



Then I can divide each whole into fourths:



There are 12 pieces so 3 divided by $\frac{1}{4}$ is 12.

Fifth Grade Math Experiences Include:



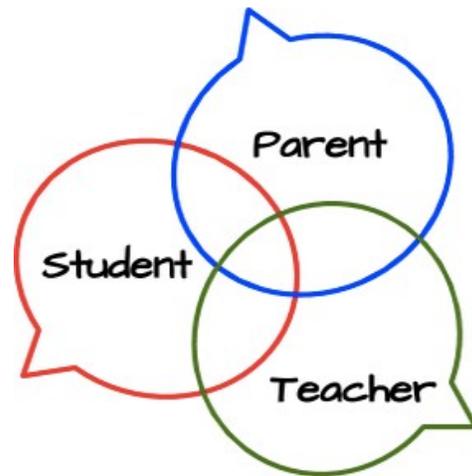
- students participating in lessons in small and whole group situations daily
- students modeling mathematics using a variety of tools such as ten frames, bead racks, counters, base ten blocks, tape diagrams, etc.
- students using technology to investigate and apply mathematics
- students discussing their mathematical thinking with others
- students completing work within varying formats: whole group, small group, partner, and individual
- students working on mathematical tasks that connect math to real world situations

Partnering to reflect on your child's learning:

Please check in with your child and your child's teacher whenever you have questions. Working together is the best way to ensure success for your child.

Possible conversation starters could be:

- What is the best thing that happened in math class today?
- What would you be interested in learning more about in math?
- What is something that was challenging for you in math class? Why do you think it is challenging?
- What websites, apps or other technology are you using to support your math learning?
- In what ways do you prefer to practice your math skills? (examples: using technology, paper/pencil, math tools, working on your own, working with others, etc.)



Possible questions to ask your child's teacher include:

- What are my child's strengths?
- Is my child at the level where he/she should be at this point of the school year?
- In what areas is my child most successful in math?
- What challenges my child?
- How can I help my child in math?

Helping your child learn outside of school:

There are many ways you can help your child at home. Try some of the following ideas:



- Praise your child for his/her effort in solving problems and for sticking with a problem that seems difficult. Share in the excitement when your child solves a problem or understands something for the first time.
- Encourage your child to notice math problems all around you and practice solving the problems together. (For example, use measuring cups to see equivalent fractions. ie filling a $\frac{1}{4}$ measuring cup twice is the same as filling one $\frac{1}{2}$ cup)
- Play board games where your child needs to add, subtract, multiply, divide and use strategies (Yahtzee, CONNECT, Cribbage, Chess, etc.)
- Play the “I’m thinking of a number” game. (“I’m thinking of a number that is makes 125 when multiplied by 4.)
- Play the “What’s the question” game. (“The answer is $\frac{1}{2}$. What’s the question?”)