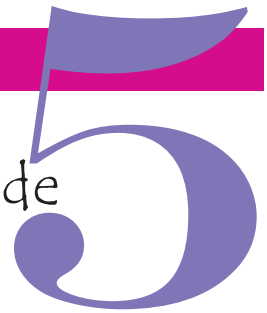




Utah State Office of Education
 250 East 500 South
 P.O. Box 144200
 Salt Lake City, UT 84114-4200
 Martell Menlove, Ph.D.
 State Superintendent
 of Public Instruction

MATH

Grade



In the Utah Core State Standards for fifth grade there are three critical areas.

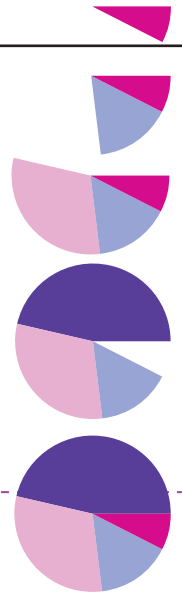
The critical areas define what students should know and understand (conceptual understanding), and be able to do (procedural understanding and fluency).

CRITICAL AREA ONE: By the end of fifth grade, students should:

1. Represent addition and subtraction of fractions with unlike denominators as equivalent problems with like denominators.
2. Be able to fluently add and subtract fractions with unlike denominators.
3. Be able to estimate sums and differences of fractions.
4. Be able to represent multiplication and division of fractions in model form. (Note: This is limited to division of unit fractions, e.g., $1/8$, $1/5$, or $1/3$, by whole numbers and whole numbers by unit fractions.)
5. Be able to explain why the procedures for multiplying and dividing fractions make sense.

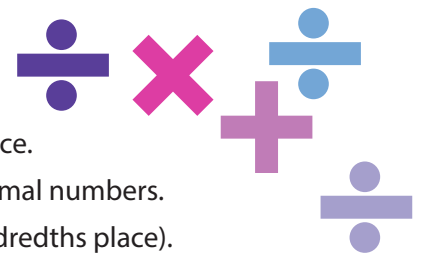
Examples:

- | | | |
|--|----|--|
| 1. $1/3 + 1/5 = 5/15 + 3/15$ | or | $3/4 - 2/3 = 9/12 - 8/12 =$ |
| 2. $5/8 + 1/6 = 19/24$ | or | $4/5 - 3/4 = 1/20$ |
| 3. Estimate the sum of $3/4$ and $1/3$. | or | Estimate the difference of $5/6$ and $1/4$. |
| 4. Draw a picture of $1/2$ divided by 4. | or | Draw a picture of 3 times $1/5$. |
| 5. Use words to explain why 3 divided by $1/2 = 6$. | or | Use words to explain why 5 times $1/3 = 1^{2/3}$. |



CRITICAL AREA TWO: By the end of fifth grade, students should:

1. Use the meaning of base-ten numerals and properties of operations to explain why division procedures work.
2. Fluently compute multi-digit numbers in all operations.
3. Fluently add and subtract decimals to the hundredths place.
4. Estimate sums and differences of decimal numbers to the hundredths place.
5. Understand and explain the procedures for multiplying and dividing decimal numbers.
6. Accurately and fluently multiply and divide decimal numbers (to the hundredths place).



Examples:

1. Use words to explain why 2000 divided by 50 = 40.
2. Find $678 + 928$. Find $9002 - 391$. Find 207×48 . Find 6478 divided by 79.
3. Find $.52 + .38$ or Find $.67 - .25$.
4. Estimate $.365 + .113$ to the nearest hundredth.
5. Use words to explain how to multiply $.02$ and $.56$. Use words to explain why $.50$ divided by $.25$ equals 2.
6. Multiply 0.71 and 0.36. What is 0.75 divided by 5?

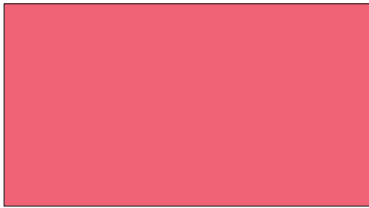
3

CRITICAL AREA THREE: By the end of fifth grade, students should:

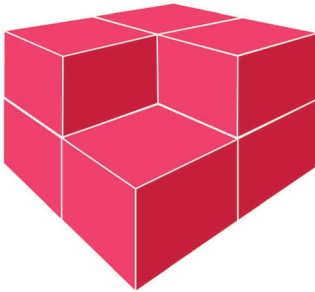
1. Recognize that three-dimensional shapes have volume.
2. Understand that volume can be measured by finding the total number of same-size units (cubes).
3. Select appropriate units of measure.
4. Select appropriate tools and strategies for measuring and/or estimating volume.
5. Be able to decompose (break apart) three-dimensional shapes into layers of arrays of cubes and use the volumes of the smaller shapes to calculate the total volume.
6. Determine and measure the parts of three-dimensional shapes in order to find the volumes and solve real-world and mathematical problems.

Examples:

1. Which of the following has volume?

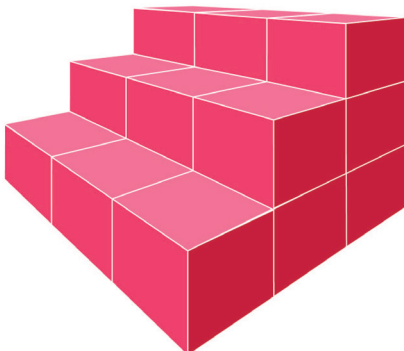


2. How many cubic units is this shape?



3. Which would be a better unit of measure to find the volume of your bedroom?
 - a. a cubic centimeter
 - b. a cubic meter
4. Which is a better tool to use to find the volume of a shoebox?
 - a. a ruler
 - b. a yardstick

5. Find the total number of cubic units in this shape.



AT HOME

Parents should act as resources and supports for homework help. They should never do the homework themselves. The tips below come from the National Council of Teachers of Mathematics Homework Tips webpage (<http://www.nctm.org/resources/content.aspx?id=2876>).

TIPS FOR FAMILIES – HOMEWORK HELP

Math Homework Is Due Tomorrow—How Can I Help?

Homework causes trouble in many households. Relax—remember whose homework it is! Think of yourself as more of a guide than a teacher. Don't take over for your child. Doing that only encourages him or her to give up easily or to ask for help when a problem becomes difficult.

The best thing you can do is ask questions. Then listen to what your child says. Often, simply explaining something out loud can help your child figure out the problem. Encourage your child to show all work, complete with written descriptions of all thinking processes. This record will give your child something to look back on, either to review or to fix a mistake, and can also help the teacher understand how the problem was solved.

Asking the following kinds of questions can help you and your child tackle the challenges of math homework:

- What is the problem that you're working on?
- Are there instructions or directions? What do they say?
- Are there words in the directions or the problem that you do not understand?
- Where do you think you should begin?
- Is there anything that you already know that can help you work through the problem?
- What have you done so far?
- Can you find help in your textbook or notes?
- Do you have other problems like this one? Can we look at one of those together?
- Can you draw a picture or make a diagram to show how you solved a problem like this one?
- What is your teacher asking you to do? Can you explain it to me?
- Can you tell me where you are stuck?
- Is there someone you can call to get help? Can you discuss the problem with a classmate?
- Would using a calculator help you solve the problem?
- Would it help to go on to another problem and come back to this one later?
- Is there a homework hotline at your school? What is the phone number for it?
- Why don't we look for some help on the Internet?
- If you do only part of a problem, will the teacher give you some credit?
- Can you go in before or after school for help from the teacher?



Remember, support homework—don't do it!

- ▶ Besides supporting your child on homework, show the importance of learning math by helping your child **connect math with daily life**.
- ▶ Point out **your own activities that involve mathematics**, such as deciding whether you have enough money to buy items on a shopping list, estimating how long it will take to make a trip, determining how much carpet or wallpaper to buy for a room, or developing a schedule to complete a series of tasks.
- ▶ Talking about these everyday situations will give you a chance to increase your child's **appreciation for the usefulness of mathematics**.

Other tips for parents can be found at: <http://www.nctm.org/resources/content.aspx?id=7928>