ELEMENTARY SCHOOL

Math Shifts

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New standards are triggering three major changes in instruction:

1. Teachers will focus on the most important topics for each grade level allowing your child to develop a deeper understanding of mathematical ideas and skills.
2. Teachers will provide more opportunities for students to make connections between the mathematics they learn from grade to grade.
3. Students will still be expected to know their "math facts" and solve problems efficiently. Along with those expectations, learning experiences will help students to understand why those strategies and skills work and how to apply them to solve problems that arise from everyday life experiences and other real-world situations.

SUPPORT YOUR CHILD AT HOME

Support your child during homework … but DON'T do it for them. If your child is having difficulty with a problem, here are some questions to ask:

- What do you know? What are you sure about? What do you need to find out?
- What would happen if …?
- What have you tried so far? If that didn't work, what would be another way to start?

Talk to your child about how adults use math in their everyday lives: deciding on which is the "better buy" while shopping, estimating what time to start a series of tasks in order to be done by a certain time, or figuring out how many burgers you can buy if you have $10.

Teach your child that success is a result of effort rather than raw talent. Encourage your child to keep going and not give up when they are faced with a challenging problem. Teach your child that setbacks or failures are actually opportunities for improvement.

Use technology to help build your child's interest in math. Do an internet search for "free math games" and play a few games with your child.

Sample exercises

See back for answers and explanations.

Instead of being asked to simply memorize a formula to compare fractions, students will ***demonstrate their understanding*** of how big or small a fraction is in relation to other numbers.

1.

Previous math question:

Fill in the blank with either ">" or "<" $\frac{2}{3}$ _____ $\frac{1}{4}$

Hawaii Common Core math question:

Label the point where $\frac{2}{3}$ belongs on the number line. Be as exact as possible.

2.

Previous math question:

Determine the following product: $\frac{5}{8} \times 1\frac{4}{5}$

A. 1½ B. $\frac{25}{72}$ C. $\frac{9}{8}$ D. $2\frac{9}{20}$

Hawaii Common Core math question:

Classify each product below as less than $\frac{5}{8}$, equal to $\frac{5}{8}$ or greater than $\frac{5}{8}$.

$\frac{5}{8} \times \frac{1}{4}$ $\frac{5}{8} \times \frac{13}{6}$ $\frac{5}{8} \times 1\frac{1}{16}$ $\frac{5}{8} \times \frac{7}{8}$ $\frac{5}{8} \times \frac{6}{6}$ $\frac{5}{8} \times 3$

Less Than $\frac{5}{8}$	Equal to $\frac{5}{8}$	Greater Than $\frac{5}{8}$

Preparing your child for tomorrow's world…

To better prepare children for the higher demands of college and careers, public schools are improving education with the Hawaii Common Core – learning goals to help all children stay on track to graduate with the skills they need to be successful. Please ask your child's teacher for more information, or visit **bit.ly/CommonCoreHI**.

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Answer key

Note: *this is still a useful strategy that students will continue to be taught. However, along with this strategy, students will learn how to reason about how big or small a fraction is in relationship to other numbers. See the sample Common Core-aligned exercise below.)*

1.

Previous math question:

Fill in the blank with either ">" or "<" $^2/_3$ _____ $^1/_4$

The strategy typically taught is to rewrite both fractions so they have common denominators:

$^2/_3$ _____ $^1/_4$ can also be written as $^8/_{12}$ _____ $^3/_{12}$ → So... $^2/_3 > {}^1/_4$

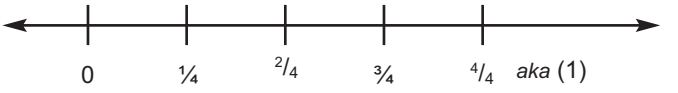
Hawaii Common Core math question:

Label the point where $^2/_3$ belongs on the number line. Be as exact as possible.

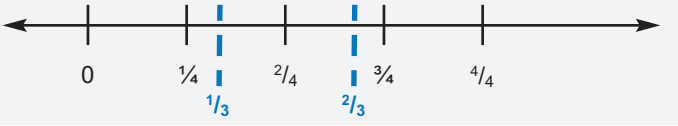
As an example, think about a candy bar that is in the shape of a rectangle, and you are going to eat $^2/_3$ of the candy bar. Students will learn that whenever they see a fraction:

- the bottom number (denominator) tells us how many equal parts to break the whole piece into; and,
- the top number (numerator) tells us how many of those parts to take/count.
- So in the example of $^2/_3$ of a candy bar, to show what $^2/_3$ looks like, we need to break the whole bar into 3 equal parts and then take 2 of those parts.

Now, in order to place $^2/_3$ on the number line, we first must determine where the number 1 should go. Because, like the candy bar example, once we know the "whole" (the distance from 0 to 1 on the number line), then we can break that up into 3 equal parts and then count 2 of those parts.Since we know where ¼ is on the number line, we can use that to help us find where the number 1 should go. Since ¼ means "break up the whole into 4 equal parts and count 1 of those parts," we can repeat that distance and count by ¼ until we get to 1.



Now that we know the distance from 0 to 1, we can figure out where 2/3 should go by breaking up that distance into 3 equal parts and count 2 of those parts.



2.

Previous math question:

Determine the following product: $^5/_8 \times 1\,^4/_5$

For this item, students would be expected to recall the strategy to multiply a fraction by a mixed number and then select which of the multiple choice options is correct. $^5/_8 \times {}^9/_5 = {}^{45}/_{40} = 1\,^1/_8 = {}^9/_8$ (option C)

Hawaii Common Core math question:

Classify each product below as less than $^5/_8$, equal to $^5/_8$ or greater than $^5/_8$.

To solve this item, students could multiply each pair of numbers. However, the intent of the problem is for students to pay attention to the number that is being multiplied by $^5/_8$. The expectation is students should be able to demonstrate they understand the following:

- when you multiply a number by a number that is less than 1, you get a product that is less than what you started with.
- when you multiply a number by 1 (or a fraction that is equivalent to 1), you get a product that is the same number you started with.
- when you multiply a number by a number that is greater than 1, you get a product that is greater than what you started with.