

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 formulas, students will also be asked to **demonstrate their understanding** of how to convert units of measure in the context of a real-world situation.

1.

Previous math question:

Fill in the blank: 50 miles = _____ feet

Hawaii Common Core math question:

Jamaican sprinter Usain Bolt won the 100-meter sprint gold medal in the 2012 Summer Olympics. He ran the 100-meter race in 9.63 seconds. In that race, what was Usain Bolt's speed in miles per hour?

2.

Previous math question:

The equation $50c + d = \$349.50$ represents the cost, c , of purchasing 50 shirts plus a one-time design fee, d . If the cost per shirt is \$4.49, what is the design fee?

Hawaii Common Core math question:

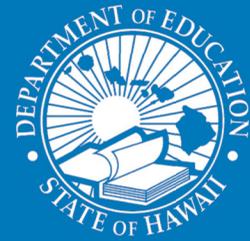
The total cost of an order of shirts from a company consists of the cost of each shirt plus a one-time design fee. The cost of each shirt is the same regardless of how many shirts are ordered. The company provides the following examples to customers to help them estimate the total cost (with design fee) of an order of shirts:

- 50 shirts cost \$349.50
- 500 shirts cost \$2370

- A. Based on the examples, what is the cost of each shirt, not including the one-time design fee (d)? Show or explain how you found your answer.
- B. What is the cost of the one-time design fee (d)? Show or explain how you found your answer.

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.



Answer key

1.

Previous math question:

Fill in the blank: 50 miles = _____ feet

To solve, a student would have to recall (or look up) how many feet are in 1 mile and then multiply: $50 \times 5,280 = 264,000$ feet

Hawaii Common Core math question:

Jamaican sprinter Usain Bolt won the 100-meter sprint gold medal in the 2012 Summer Olympics. He ran the 100-meter race in 9.63 seconds. In that race, what was Usain Bolt's speed in miles per hour?

To solve this problem, we have to recognize we are trying to find his average speed and represent it in terms of miles per hour. So, students will learn to think of situations like this as a ratio and rate type of problem. In other words, using the given information, students will want to write the following:

$$\left(\frac{100 \text{ meters}}{9.63 \text{ seconds}} \right) \quad \text{We want to write this as a ratio, but in our minds, read it as, "100 meters per 9.63 seconds"}$$

To convert this rate (comparing meters to seconds) into miles per hour, we need to **recall (or research) a few conversions:**

Since we need to convert meters into miles, we can do an internet search to find that **1 mile = 1,609.34 meters**.

Since we need to convert seconds into hours, we know that there are 60 seconds in a minute and 60 minutes in an hour. Therefore, there are **3,600 seconds in an hour**.

Using this, now we can set up several ratios to multiply. And, we have to think about how to set up the ratios so that we end up with ONLY miles and hours:

$$\frac{100 \text{ meters}}{9.63 \text{ seconds}} \times \frac{1 \text{ mile}}{1609.34 \text{ meters}} \times \frac{3600 \text{ seconds}}{1 \text{ hour}}$$

$$= \frac{100 \text{ meters}}{9.63 \text{ seconds}} \times \frac{1 \text{ mile}}{1609.34 \text{ meters}} \times \frac{3600 \text{ seconds}}{1 \text{ hour}} = \frac{360,000 \text{ miles}}{15497.94 \text{ hours}} = 23.2 \text{ miles/hour}$$

Usain Bolt had an average speed of **23.2 miles per hour** in the 100-meter sprint.

2.

Previous math question:

The equation $50c + d = \$349.50$ represents the cost, c , of purchasing 50 shirts plus a one-time design fee, d . If the cost per shirt is \$4.49, what is d ?

To solve, a student would insert the value of C . $50(4.49) + d = 349.50 \dots 224.50 + d = 349.50 \dots 349.50 - 224.50 = \125 .

Hawaii Common Core math question:

This multi-step problem requires students to make sense of a real-world situation. The student will have to recognize there are two variables (quantities) involved to solve the problem. Since $500 \text{ shirts} + d = \2370 , and $50 \text{ shirts} + d = \349.50 :

Part A

Subtracting one equation from the other provides part of the answer:

$$\begin{array}{r} 500c + d = \$2370.00 \\ \text{subtract } 50c + d = \$349.50 \\ \hline \text{equals } 450c = \$2020.50 \end{array}$$

• We can use that to set up and solve an equation:
 $450c = 2020.50 \dots$ so, $c = \$4.49$. Each shirt is \$4.49.

Part B

To find the one-time design fee (d) we need to set up an equation using the given information. Since 50 shirts cost \$349.50 and now we know that each shirt cost \$4.49, then:

- $50(\$4.49) + d = \349.50
- So $\dots 224.50 + d = \$349.50$
- $d = \$125$