

# Focus & Within Grade Coherence

Task Handout, Grades 6-8

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## Major Task: Grade 6

Jasmine has taken an online boating safety course and is now completing her end-of-course exam. As she answers each question, the progress bar at the bottom of the screen shows what portion of the test she has finished. She has just completed Question 16 and the progress bar shows she is 20% complete. How many total questions are on the test? Use a table, diagram, or equation to justify your answer.

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## Major Task: Grade 7

Molly runs  $\frac{1}{3}$  of a mile in 4 minutes.

- If Molly continues at the same speed, how long will it take her to run one mile?
- Draw and label a picture showing why your answer to part (a) makes sense.

## Major Task: Grade 8

The following table shows the amount of garbage that was produced in the US each year between 2002 and 2010 (as reported by the EPA).

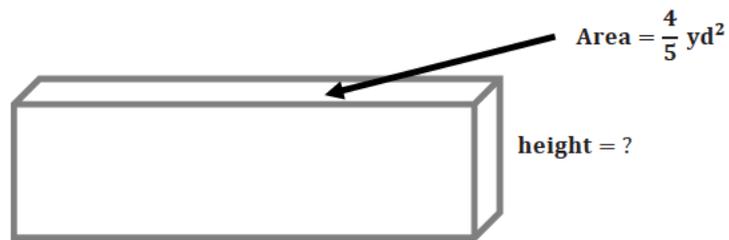
<b><math>t</math> (years)</b>	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b><math>G</math> (million tons)</b>	239	242	249	254	251	255	251	244	250

Let's define a function which assigns to an input  $t$  (a year between 2002 and 2010) the total amount of garbage,  $G$ , produced in that year (in million tons). To find these values, you can look them up in the table.

- How much garbage was produced in 2004?
- In which year did the US produce 251 million tons of garbage?
- Does the table describe a linear function?
- Draw a graph that shows this data.

## Supporting Task: Grade 6

The volume of the rectangular prism is  $\frac{35}{15} \text{ yd}^3$ . Determine the missing measurement using a one-step equation.



## Supporting Task: Grade 7

Each of the 20 students in Mr. Anderson's class flipped a coin ten times and recorded how many times it came out heads.

- How many heads do you think you will see out of ten tosses?
- Would it surprise you to see 4 heads out of ten tosses? Explain why or why not.
- Here are the results for the twenty students in Mr. Anderson's class. Use this data to estimate the probability of observing 4, 5 or 6 heads in ten tosses of the coin. (It might help to organize the data in a table or in a dot plot first.)

<b>Student</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>Number of heads</b>	3	5	4	6	4	8	5	4	9	5	3	4	7	5	8	6	3	6	5	7



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## Within Grade Coherence Task: Grade 6

A fruit salad consists of blueberries, raspberries, grapes, and cherries. The fruit salad has a total of 280 pieces of fruit. There are twice as many raspberries as blueberries, three times as many grapes as cherries, and four times as many cherries as raspberries. How many cherries are there in the fruit salad?

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## Within Grade Coherence Task: Grade 7

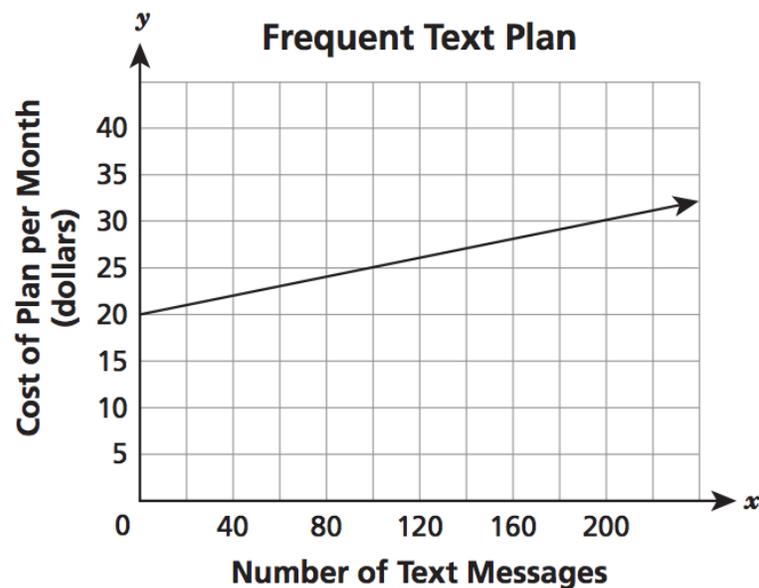
In New York, state sales tax rates vary by county. In Allegany County, the sales tax rate is  $8\frac{1}{2}\%$ .

- A book costs \$12.99, and a video game costs \$39.99. Rounded to the nearest cent, how much more is the tax on the video game than the tax on the book?
- Using  $n$  to represent the cost of an item in dollars before tax and  $t$  to represent the amount of sales tax in dollars for that item, write an equation to show the relationship between  $n$  and  $t$ .
- Using your equation, create a table that includes five possible pairs of solutions to the equation. Label each column appropriately.

## Within Grade Coherence Task: Grade 8

A customer is comparing two different text message plans at Cellular Bargains. He wants to find out which plan allows the most text messages for the same cost. The Pay Per Text Plan charges \$10 per month and \$0.10 for each text message. Write a function that models this plan, stating what your variables represent.

The Frequent Text Plan is modeled by the graph shown below.



How many text messages would result in the same cost per month for the two plans?