

## Figuring Miles Per Hour

### Purpose

Students will divide with decimals and discover rules for placement of the decimal point.

### Materials

*For the teacher:* chalkboard, chalk

*For each student:* paper, pencil, copy of Black Line Master (BLM)

*Out of Gas*

### Activity

#### A. Introduction

1. Write the following division problem on the board:  $3.04 \overline{)565.44}$
2. Ask students to make an estimate of the correct answer.
3. Ask students how they decided where the decimal point should go.
4. Tell students that you are going to show them the way that seems the simplest to determine placement of the decimal point in the solution. Emphasize that this is not the only way.
5. Ask students for the solution of  $12 \div 3$ . Then, ask for the solution of  $120 \div 30$ . [In both examples, the solution is 4.]
6. Explain to students that moving the decimal point the same number of places to the right in both the dividend and divisor does not change the quotient.
7. Ask students for the solution of  $0.12 \div 0.03$ . [In this example, the solution is, once again, 4.]
8. Explain to students that moving the decimal point the same number of places to the left in both the dividend and divisor does not change the quotient.
9. Tell students that it seems easier to divide by a whole number. Explain to students that in order to do that they may move the decimal point in both the divisor and dividend the same number of places in order to turn the divisor into a whole number.
10. Have students write the following problem on their own paper:  $364.8 \div 3.04$ . Ask students how many places the decimal point needs to be moved in order to turn 3.04 into a whole number [2].
11. Ask students to compute the quotient on their own paper.

(continued)

connecting  
across the  
curriculum



#### English/ Language Arts

Have students research actual mileage claims made by automobile makers. Ask them to write an advertisement comparing the mileage of one automobile to another.

INCORPORATING  
TECHNOLOGY



Have students visit [www.aaamath.com](http://www.aaamath.com) and click on the link for sixth grade. Ask them to try the dividing decimals games for additional practice.

Standards Link  
**6.2.9**

**Activity (continued)**

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12. Show students the correct procedure by writing the example on the board. Explain to students that as many zeros as necessary can be added at the end of the dividend to hold empty place values.

$$\begin{array}{r} 120 \\ 304 \overline{)36480} \end{array}$$

13. Have students write the following problem on their own paper:  $34.914 \div 2.2$ . Ask students how many places the decimal point needs to be moved in order to turn 2.2 into a whole number [1].
14. Ask students to compute the quotient on their own paper.
15. Explain to students that after moving the decimal point one place in 34.914 the result is 349.14. Whenever the dividend has decimal point remaining, the decimal point should be reflected in the quotient. Show students how to insert the decimal point into the quotient by placing it directly above the decimal in the dividend.

$$\begin{array}{r} 15.87 \\ 22 \overline{)349.14} \end{array}$$

**B. Student Activity**


1. Have students complete the BLM *Out of Gas*.
2. Tell students to check their answers by using a calculator.


**Classroom Assessment**

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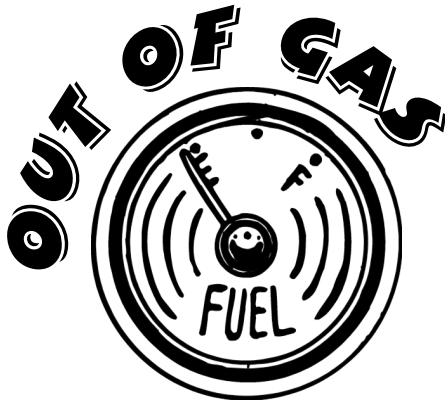
**Basic Concepts and Processes**

During the activity and when reviewing the BLM, discuss the following questions with your students to gauge their understanding of the Standard Indicator:

 As students are working on the BLM, ask each individually how they solved a problem.

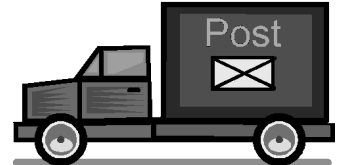
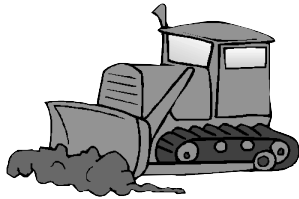
 Ask: "How did you decide where to place the decimal point?"

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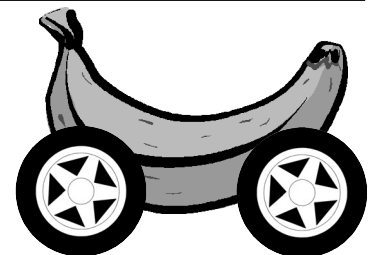
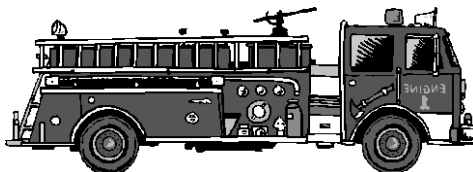


Name: \_\_\_\_\_

All of the vehicles in the chart below are out of gas. The chart tells how many miles each has traveled. Each vehicle had a full tank of gas when it started. The chart shows the size of each gas tank. For each vehicle tell how many miles it traveled per gallon of gas. Round answers to the nearest hundredth.



Vehicle	Size of Gas Tank	Miles Traveled	Miles Per Gallon of Gas
Tow truck	15 gallons	300.45 miles	
Motorized skateboard	.6 gallon	51.6 miles	
Motorized baby carriage	.4 gallon	29.4 miles	
Van	20.4 gallons	265.2 miles	
Tractor	10.1 gallons	33.33 miles	
Gasoline-powered ice cream cart	7.6 gallons	11.4 miles	
Bananamobile	40.7 gallons	423.28 miles	
Fire truck	33.3 gallons	99.9 miles	
Bulldozer	25.5 gallons	76.5 miles	
Mail truck	9.4 gallons	118.44 miles	



# OUT OF GAS

## Teacher Directions

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Distribute one copy of the BLM *Out of Gas* to each student. Have students figure the miles traveled for each of the vehicles on the BLM and complete the chart.

## Answer Key

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Vehicle	Size of Gas Tank	Miles Traveled	Miles Per Gallon of Gas
Tow truck	15 gallons	300.45 miles	20.03
Motorized skateboard	.6 gallon	51.6 miles	86
Motorized baby carriage	.4 gallon	29.4 miles	73.5
Van	20.4 gallons	265.2 miles	13
Tractor	10.1 gallons	33.33 miles	3.3
Gasoline-powered ice cream cart	7.6 gallons	11.4 miles	1.5
Bananamobile	40.7 gallons	423.28 miles	10.4
Fire truck	33.3 gallons	99.9 miles	3
Bulldozer	25.5 gallons	76.5 miles	3
Mail truck	9.4 gallons	118.44 miles	12.6