

Working with wheels

How many items can you name that have wheels? Wheels help us get from one place to another. Imagine having to walk to school every morning or to your favorite ice cream shop for a treat. How much time would this take?

Wheels help us transport items back and forth. Think about how difficult it would be to carry items a long distance without wheels.

Wheels help us complete chores or do our jobs. Picture delivering the mail to your entire town or city by foot or trying to mow your grass with a lawnmower without any wheels. Wheels certainly make our lives a little easier.

Grades 5–6

WEEK 1

Albert earns \$1 from a sponsor for every 5 minutes that he rollerblades at the Save the Park all-night fundraiser. How many minutes must Albert rollerblade to earn \$52? Write an equation to represent the situation, then solve the equation. Suppose Albert has 3 sponsors; how many minutes must Albert rollerblade to earn \$52? Explain your reasoning.

WEEK 2

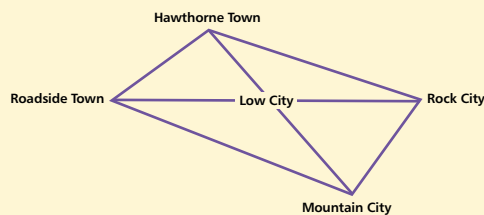
Nick rides his bicycle from his house, located at (2, 3) on a Cartesian coordinate map, to the basketball courts, located at (2, -2), to his grandparents' house, located at (5, -2), and then to his friend Pete's house, located at (5, 2), before returning home for his 7:30 p.m. curfew. Create a coordinate grid and graph the ordered pairs on the coordinate plane. What type of quadrilateral do they form? Which properties did you use to classify the quadrilateral? Next, find the area of the quadrilateral. Describe your strategy.

WEEK 3

Melanie mowed $\frac{1}{8}$ of her yard in $\frac{1}{4}$ hour. After another 1 hour and 15 minutes, how much of the yard has Melanie mowed in all (if she mows at the same speed)? Express your answer as a fraction in simplified form and as a decimal.

WEEK 4

Billy is riding his motorcycle from Hawthorne Town to Mountain City as shown in the figure to the right. List the different ways that Billy could travel from Hawthorne Town to Mountain City without using the same road twice. Describe the strategy you used in making your list of combinations. After making a class list of all combinations, consider what would happen if the road from Rock City to Roadside Town were closed for repairs.



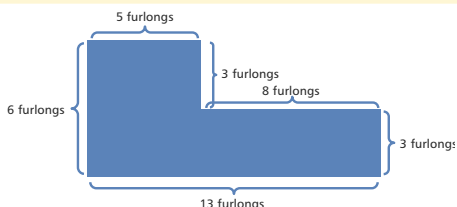
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WEEK 1

In the winter, Josey uses a wheelbarrow to haul wood from his backyard to the back of his neighbor's house, located 48 yards away. Josey has to haul a total of 97 pieces of wood. He can safely haul 13 pieces of wood at a time. How many trips must Josey make to complete his chore? How many total yards does Josey travel? Is this more or less than 2304 feet? Be prepared to tell a classmate how you solved the problem.

WEEK 2

Sidney began riding her scooter at 3:15 p.m. At 3:40 p.m., Sidney stopped to eat a snack for 10 minutes. She then rode her scooter for another 25 minutes. How long did Sidney ride her scooter? What time did she finish? Explain your solution strategy to your class. How is your strategy the same as your peers' strategies? How is your strategy different from theirs?

WEEK 3


Heather lives on a farm in Tennessee. Her father uses a tractor to mow their farmland as shown in the figure at the left. What is the area of their farmland in squared furlongs?

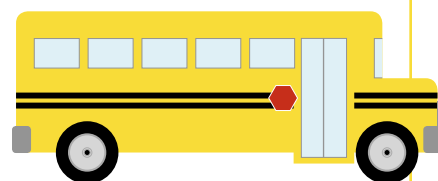
WEEK 4

Caleb and his friends are members of a local skateboarding club. They tracked the number of miles they skateboarded in 1 month (see the table to the right). How is this data best represented (e.g., a bar graph, a line plot, a pictograph, or a tally chart)? Why? Graph the information in at least 2 ways. How are your 2 graphs different from each other? What conjectures can you make about this set of data? Be ready to support your conjectures with evidence from either of your graphs.

No. of miles	No. of people
5	4
6	8
7	8
8	6
9	2

WEEK 1

Many girls and boys ride to school every day on a school bus. Using this picture, identify a rectangle. Explain to a partner how you know it is a rectangle. How many rectangles can you and your partner find on the bus? Next, find a circle. How many can you find? If you divide each circle into halves, how many half-circles can you find? How many vertices does the red shape on the bus have? What other shapes can you identify on the bus? Explain the properties or characteristics you used to identify these other shapes.


WEEK 2

Jennie's car is 15 feet long. Jason's car is 2 feet shorter. How long is Jason's car? Solve this problem using at least 2 different strategies. Don't forget to show your work. At least 1 of the strategies should contain a mathematical equation.

WEEK 3

Dana and her family live near a park with a sandbox. On Saturday morning, they loaded 3 containers into Dana's wagon for her to build a sand castle. Dana filled the first container up to the top. It contained 2 cups of sand. If Dana's containers could hold a total of 8 cups of sand, how many cups could the other 2 containers each hold if they are the same size?

WEEK 4

Basil's father drives an 18-wheel truck all over the United States. Some of the rims on his truck wheels are red, and some are blue. List all the possible combinations of blue and red tire rims that could be on the truck. Compare your answers with a partner's answers. Explain to your partner how you made your list. How was your approach the same as your partner's approach, and how was it different?