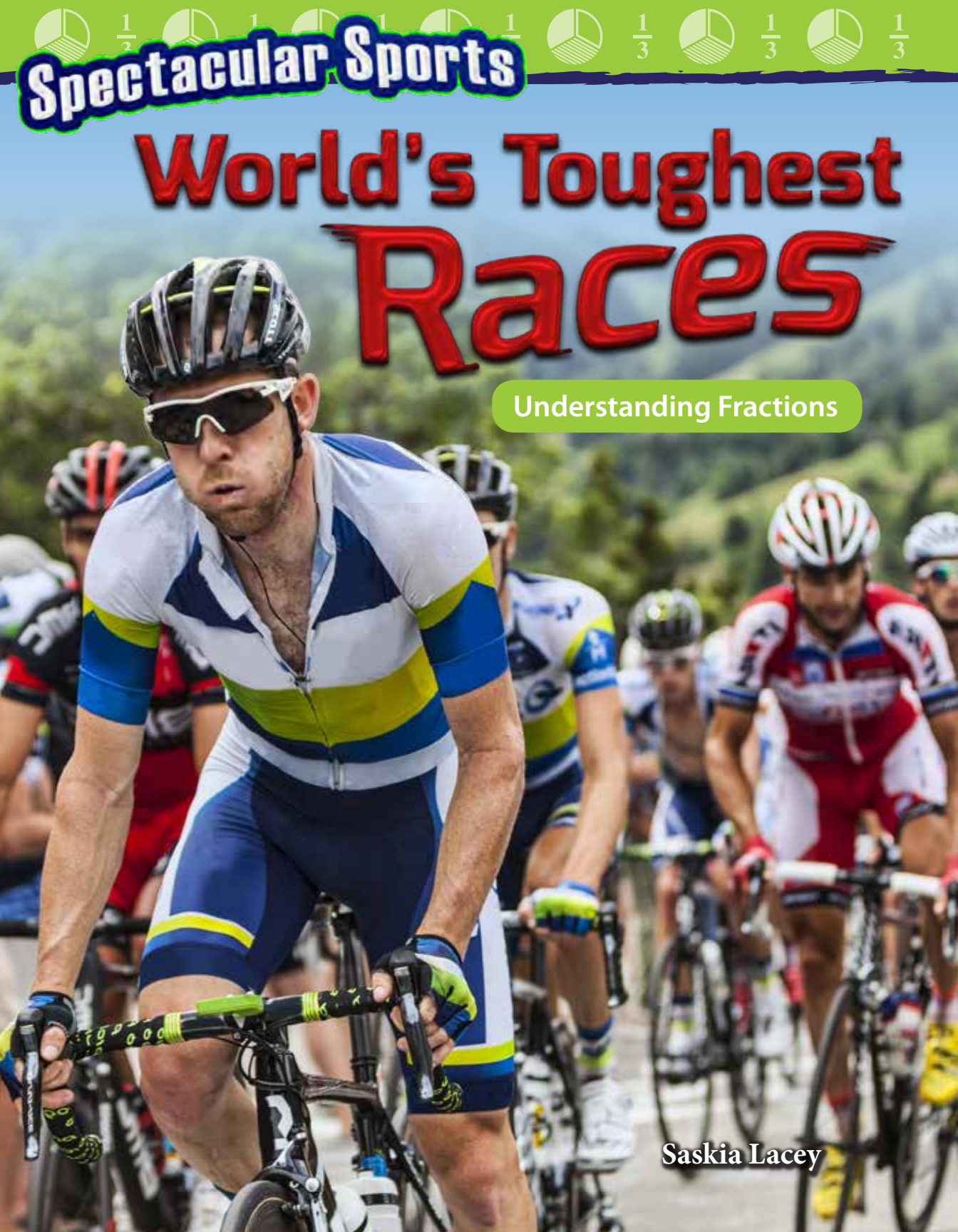
Spectacular Sports

World's Toughest Races

Understanding Fractions



Saskia Lacey

For teachers' inspection ONLY

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Built to Be Brutal

The world of racing is changing. Courses are longer. Their settings are more extreme. Obstacles are stranger and more dangerous. Athletes want to try things that seem impossible. They want a chance to prove their strength.

So, races are created. Obstacles are built. Incredible courses are designed to test the strongest of the strong. Athletes train hard. They need to be ready for icy **terrains**, desert winds, and steep climbs. They must have superhuman endurance.

These races are built to be **brutal**. They are not for everyday athletes. Only serious competitors need apply. You may have heard of some of these races, but you probably don't know them all. Have you ever heard of the Antarctica Marathon? What about the Jungle Marathon? Does the Tough Mudder® ring any bells? Each has its own difficulties. All are super tough. Which is the toughest? You be the judge.



Athletes make their way through the Antarctica Marathon course.



Contestants compete in the Beaver Run, Lithuania's version of the Tough Mudder obstacle course.

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Tough Around the World

The first course seems simple. Racers do not face weird hurdles. There are no wild locations. The weather is not extreme. In this race, there is just one city block. Easy, right? Well…maybe not.

The Self-**Transcendence** (tran-SEN-dents) 3100 Race takes place every year in Queens, New York. The race is 3,100 miles (5,000 kilometers) long. That is like running all the way across the United States! And, there is one more challenge. Runners have to finish the race within 52 days. Athletes must run almost 60 mi. (100 km) a day to finish on time.

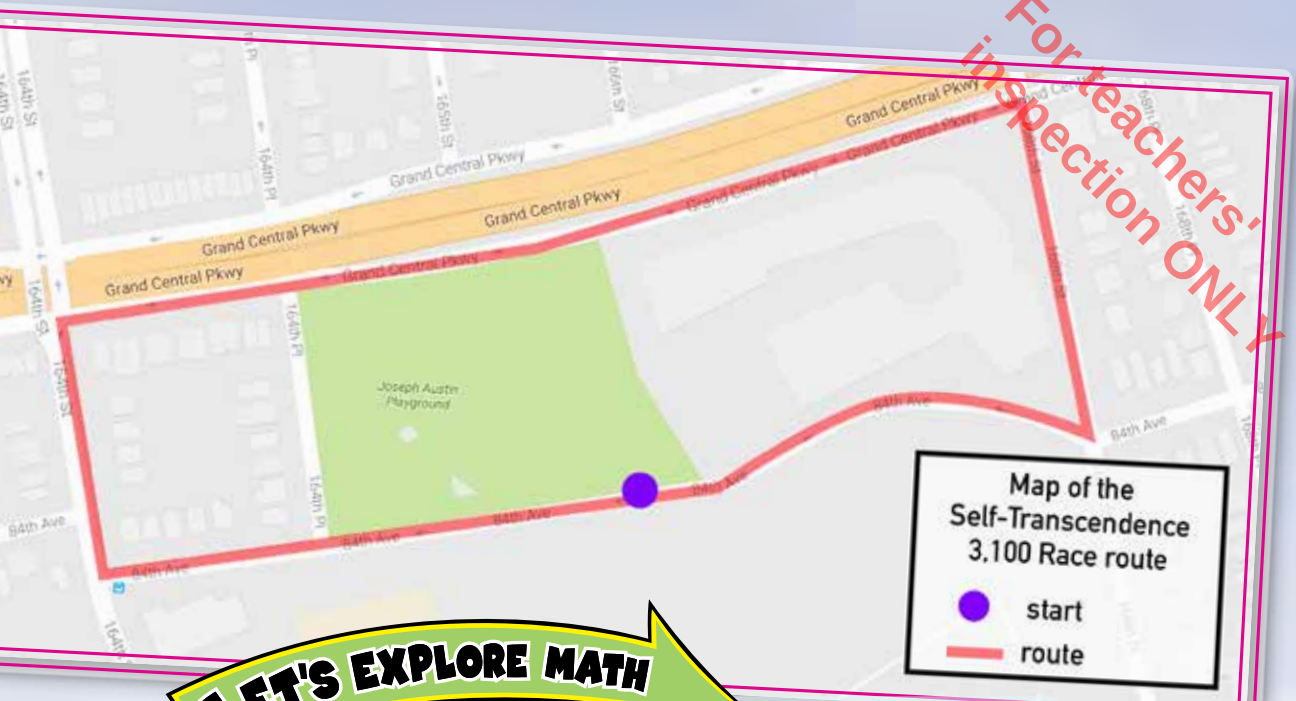
It may seem impossible. But, the athletes who finish have a lot to brag about. It is the longest footrace in the world!

Many runners don't want to just finish the race. They want to beat the record. In 2015, the winner finished in just 40 days, 9 hours. He had to run a little over 76 mi. (122 km) each day.



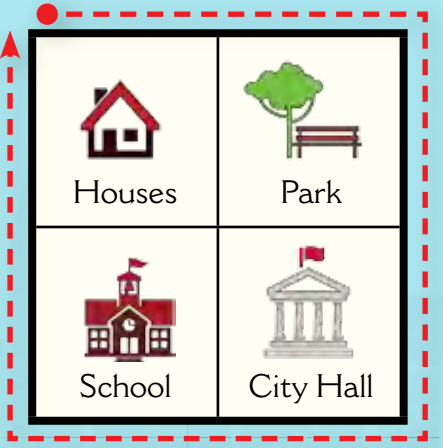
Ashprihanal Aalto set the record in 2015.

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LET'S EXPLORE MATH

Kareen takes a walk around her block every day.
Her city block looks like this:



Kareen's route

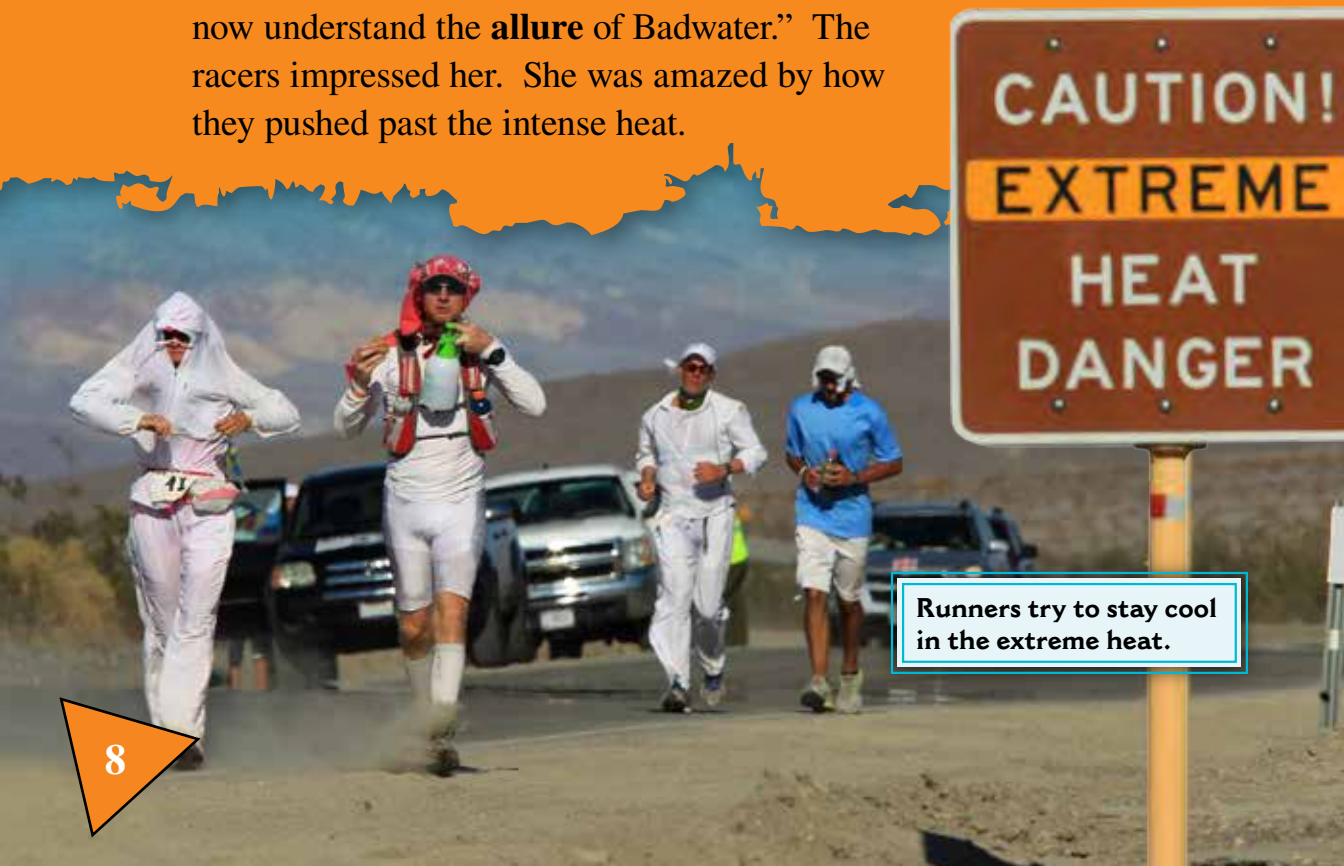
1. How many **parts** make up Kareen's **whole** block?
2. What do you notice about the size of each part of the block?
3. What **fraction** of the block is City Hall?

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Badwater® 135

The Badwater 135 is not an easy race. Runners travel 135 mi. (217 km) through the Death Valley desert in July. If you're thinking about running, then be sure to bring plenty of water! Death Valley lives up to its name. It is the hottest place on Earth. To make it to the finish line, racers have crews that help them stay calm and cool. The crews follow the runners as they race. They make sure runners keep going. They also help keep them safe.

One crewmember, Amanda McIntosh, was worried about the heat. "When I stepped out of the van, it was like jumping into an oven." But by the end of the race, Amanda was almost a **convert**. "While I still **contend** that this is not a race for me…I now understand the **allure** of Badwater." The racers impressed her. She was amazed by how they pushed past the intense heat.



Runners try to stay cool in the extreme heat.

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A crewmember squeezes wet sponges over a runner's head.

LET'S EXPLORE MATH

Crewmembers at the Badwater 135 carry extra bottles of water and ice to hand to the runners. The water that is left in one runner's bottle is shaded on the model.

1. Does the water bottle have more or less than half remaining?
2. What fraction of the water in the bottle does the runner have left?
3. What fraction of the water in the bottle did the runner already drink?

