

$$\frac{1}{10}$$

STEM

$$1 = 0.10$$

$$\frac{1}{10} = \frac{10}{100}$$



$$0.1 = 0.10$$

$$\frac{1}{10} = \frac{10}{100}$$



The Science of Fitness

Multiplying Fractions



Georgia Beth

Stronger, Better, Faster

A swimmer reaches for the wall in record time. An artist stretches across a table as she draws. A family dances as they wash dishes. A firefighter hauls a hose up 10 flights of stairs. A dad lifts his son up to a jungle gym. We all depend on our bodies to perform at their best every day.

Around the world, scientists are peering into microscopes. They are reviewing data. Some of them observe world-class athletes as they sprint to the finish line. Others study **functional fitness**. They are devoted to making it easier for everyday people to lift heavy boxes, run to catch the bus, and play with their dogs. In the lab, on the track, or in the backyard, these scientists strive to understand the human body in new ways. The work they do pushes science forward. In the process, they make people stronger, better, faster. This is the science of fitness.

A man performs a fitness test on an exercise bike.



A doctor tests a patient to find out how many calories his body requires while resting.



Training and Performance

Some scientists study how athletes **exercise**. They observe people in labs where they can control the **variables**. Variables are things that might change. The temperature in a room might change. Athletes might change what they drink during workouts. Scientists need to control those things to get strong data.

Each study gives more information about what it takes to be fit. Scientists might track how much sweat athletes produce. They might focus on how long it takes to complete an exercise. The data makes sports safer. It helps people live longer. It helps people learn how to be healthier.


People must train to improve. Whether it's a student studying for a test or an athlete preparing for a big race, practice makes perfect. When it comes to fitness, performance improves when people train.

A man does push-ups during his crossfit workout.



Types of Training

Cardiovascular exercise, or cardio, gets hearts pumping hard and fast. It is an **aerobic** activity. Examples include dancing and biking. Parkour, Zumba, and zombie-inspired marathons keep hearts healthy, too. Cardio also helps people control their weight. It helps people prevent disease. Cyclists, runners, and triathletes all depend on cardio training to improve their bodies' ability to absorb oxygen. Training helps their muscles endure the demands of long races.

A woman with long brown hair, wearing a teal jacket, grey pants, and blue sneakers with yellow laces, is captured mid-air during a parkour jump. She is clearing a concrete wall. The background shows a hilly landscape with some buildings and trees under a clear sky.

Parkour includes running, jumping, and climbing city obstacles.

LET'S EXPLORE MATH

Aerobic exercise increases lung capacity. One way to measure lung capacity is to take a deep breath and blow all the air into a balloon. Then, measure the width of the balloon through its center.

The width of Grace's balloon is 6 inches. Keenan fills his balloon $\frac{5}{8}$ as much as Grace does. Is the width of Keenan's balloon greater than or less than 6 inches? How do you know?

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