

TENNIS SCIENCE

OBJECTIVE

Explore different surfaces in the home and discover what the effects are on a tennis ball and different playing surfaces. Record your answers below.



FORCE

SPEED is about motion. Sir Isaac Newton was a really smart guy. He came up with a description for motion called Newton's first law of motion.

"An object will stay at rest until a force causes it to move and an object in motion stays in motion unless a force causes it to stop"

With no outside forces, this ball will never move.



What can you do to make the ball move?

After being hit, with no outside forces, this ball will never stop.



The harder the ball is hit the further it will travel.

Friction is the resistance of motion when one object rubs against another. Anytime two objects rub against each other, they cause **friction**. **Friction** works against the motion and acts in the opposite direction to stop the ball. Friction of the surface slows and stops the golf ball. Smooth surfaces have less friction.

Find different surfaces like an area rug, wood floor, grass, gravel and roll the ball. Try to roll the ball with the same force each time. If you have something to roll the ball down like a tube or ramp it will keep it consistent.

Surface	Describe surface	How far did the ball travel?	Observations: what happened?

Which surface did the ball move best on?

How will different court surfaces effect the ball?

What things slowed the ball down?

Which surface needed the most force to move the ball?

⚙️ TYPES OF COURT SURFACE

■ CLAY

Can slide and produce different bounces on dry or wet surfaces.

■ GRASS

Bounce depends on grass length, low bounces keep rallies short.

■ HARD

Vary in speed, greater play consistency.

■ SYNTHETIC

Fast play, consistent bounce, added sand can slow play.