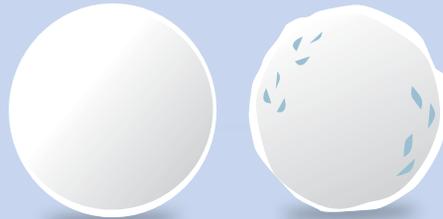


FUEL FOR THOUGHT

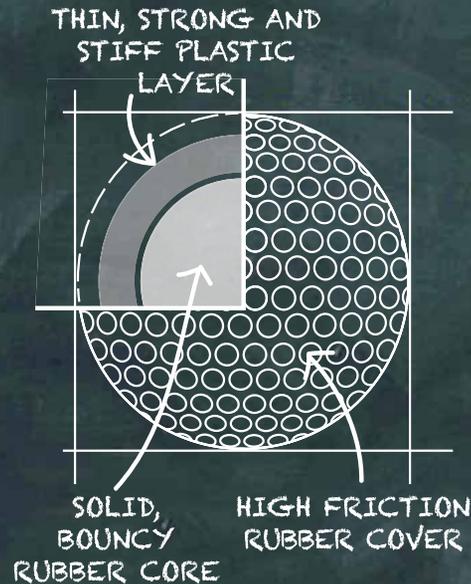
WHICH IS THE BETTER GOLF BALL?



a. Shiny, smooth ball or b. Used, dinged-up ball

Through the years, players discovered that golf balls with dings and dents flew farther. Those bumps and dents reduce wind resistance causing balls to travel farther.

ANATOMY OF A GOLF BALL



RULES OF THE BALL

A golf ball can weigh no more than 1.62 oz (45.93 grams), and have a diameter no less than 1.680 in (42.67 mm).

Golf balls can't go any farther than 317 yards (289.9m) when hit at 120 mph by the USGA's test robot, and they have to go the same distance no matter how you line them up.



STEM in the News

Look through the sports section for photos of equipment - helmets, cleats, clubs, etc. Cut out one example and write a brief summary about the object's purpose and importance to the game. Complete the sentence:
Engineering may have been used to _____

Scientist's Notebook

In the quest for speed and distance, the materials used to make golf balls have changed over the centuries. The first golf balls were hard wooden balls. These were used until the early 17th century.



1618: A new type of ball was created by stuffing a wet leather pouch with goose feathers. As the leather and feathers dried, the leather shrunk and the feathers expanded to create a hard, compact ball.



1848: The Rev. Dr. Robert Adams discovered he could make a hard ball from the sap of the Gutta-percha tree. The rubber-like ball became known as a "guttie."

Players discovered that older, nicked and dented gutties flew farther than smoother, new ones. The "Hand Hammered Gutta" ball was invented. A consistent pattern of dents was hammered over the entire ball surface.



1898: Coburn Haskell worked with the BF Goodrich Company to create a ball with a solid rubber core, wrapped with a high-tension rubber thread (like a long rubber band) and coated in a Gutta-percha cover.



TODAY: Modern golf balls have a three-layer design: a solid, bouncy rubber core, a plastic-like layer that is strong and stiff and a thin, dimpled outer layer.

Use the information above to determine which of the following statements are **TRUE** or **FALSE**.

- A smooth golf ball travels further than one with nicks and dents.
- A "guttie" is a nickname for a golf ball made of tree sap.
- Golf balls used in pro tournaments today have multiple layers.
- Early golfers hand-carved their own golf balls.
- Feather-stuffed golf balls travel farther than rubber ones.

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

STEM Connection: Imagine if you could buy a rocket-propelled golf ball. This would allow a player to get a better score even with poor golf skills. Technology would eliminate the need for a player to develop skill, which would take the fun out of golf.