kidstack
the complete engineering and technology stack for kids

ENGINEERING PROJECT:

Bouncing Balls of Different Materials

On a school playground, you might find many different kinds of balls, made from different **materials**. Different materials have different **properties**. In this project, you get to experiment with the "bouncy-ness" of balls made from different materials.

MATERIALS NEEDED:

- Bouncy Ball
- Tennis Ball
- Golf Ball
- Basketball
- Volleyball
- Yard Stick
- Masking Tape
- Concrete sidewalk or patio

GO DISCOVER:

1. Find a hard outside surface (preferably concrete)
2. Tape a ruler to an outside wall or have someone hold a yard stick vertically
3. Drop each ball (tennis, bouncy, basketball) from the top of the yard stick one at a time
4. Monitor the height that the top of each ball bounces to and mark with a labeled piece of masking tape
5. Based on these heights, take an estimate of the bounce height of the golf ball and volleyball
6. Repeat steps 3-5 while dropping the balls on a softer surface like dirt or sand

QUESTIONS:

- What do you think makes each ball bounce to different heights?
- How did the change in surface the balls were dropped on affect the bounce height?
- How do the ball material choices influence this?
- How do the inflated balls differ in bounce height from the denser balls?
- What do you think would make the highest bouncing ball?