

**Preschool Professional Course**

**Activity Sheet of STEM/STEAM Lesson 2 (Part 2)**

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**Paper Ball Run Challenge**

**Abstract:**

You'll make a ball run out of paper and tape in this engineering challenge, but there's a catch! You want your ball to move as slowly as possible. How long do you think the ball will take to travel from the entrance to the exit?

* **This project can be used to investigate a variety of physics and engineering subjects.**

### Terms and Concepts

* Kinematics
* Distance



* Time
* Velocity
* Energy
* Gravitational potential energy
* Kinetic energy
* Friction
* Thermal energy
* Acoustic energy
* Simple machine
* Lever
* Inclined plane
* Wheel and axle
* Beam
* Truss
* Engineering design process
* Iteration

**Questions:**

1. **How can you make a simple ball run out of paper and tape?**
2. **How do you make the ball travel slower or take longer through the ball run?**



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**Supplies and equipment**

**Materials for construction**

* A piece of paper (maximum 30 sheets). The use of printer, construction, graph, and notebook paper is permitted (letter or A4 size; 9" x 12" or 22 x 30-cm construction paper also allowed). Newspaper and cardstock are not permitted.
* Tape, maximum 1" (2.5 cm) wide (maximum one roll). Masking tape, painter's tape, and clear office tape (e.g. Scotch®) are all permitted. Duct tape, double-sided tape, and packing tape are not permitted.
* A flat surface such as the floor, a table, or a counter.

**Tools:**

* Ruler
* Pencil
* Stopwatch
* A ping pong ball, also known as a table tennis ball, is a small ball that is used to play table tennis (1)\

