

INNOVATE THE FUTURE OF TRANSPORTATION

Objective: Students will design and build a more complex model of a vehicle that can move in a straight line and carry a small load.

Materials Needed:

- Cardboard
- Straws
- Small dowels or rods thinner than the diameter of the straws
- Bottle caps (for wheels)
- Rubber bands
- Balloons
- Tape and glue
- Scissors
- Markers for decoration

Instructions:

- 1. Introduction** (15 minutes): Discuss the principles of flight and transportation, including aerodynamics and propulsion.
- 2. Design Phase** (25 minutes): Students will sketch their vehicle designs, considering how to incorporate a motor for propulsion.
- 3. Building Phase** (40 minutes): Using the provided materials, students will build their vehicle models, including a motor to propel the vehicle.
- 4. Testing Phase** (30 minutes): Students will test their vehicles to see how far they can travel in a straight line and how much load they can carry.
- 5. Discussion** (20 minutes): Discuss the challenges faced during the building and testing phases. Encourage students to think about how their designs could be improved for better performance.

Teaching Instructions:

- 1. Preparation:** Gather all materials and set up the classroom with designated areas for designing, building, and testing.
- 2. Introduction:** Start each session with a brief discussion on the principles of transportation relevant to the students' level.
- 3. Guidance:** Provide guidance and support during the design and building phases, encouraging creativity and problem-solving.
- 4. Facilitation:** Facilitate the testing phase, ensuring safety and fairness. Encourage students to observe and learn from each other's designs.
- 5. Discussion:** Lead a discussion after the testing phase to reflect on the learning experience and explore improvements.

