

# Activity Guide - Energy of Motion & Collisions

## Experiencing Energy

 \*Slides:

### Overview

#### Objectives

- Understand that energy can be transferred from one object to another through a collision.
- Connecting science concepts of low and high energy to somatic (feeling one's own body) sensation

#### Guiding questions

- Exercise 1 -
  - What observations do the students have about the activity?
  - How does it feel to have low energy? How about high energy?
  - Is it more difficult to avoid bumping into other students at lower or higher energy?
- Exercise 2 -
  - Are there more collisions at low, medium or high energy?
  - What happens if one object colliding is much bigger than the other?

#### Materials needed

- None

#### Space needed

- Whole classroom or contained outdoor space, enough space so students can move around without touching/running into each other

**Time allotment: 10-20 minutes**

**Number of students: All students**

### Instructions

Exercise 1 - no collisions

1. Ask students to stand up and find a space where they are not touching anyone
2. Have all students start by standing still, let them know that they are an object at rest (no energy)

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3. As the students to begin to wiggle, start slow and build by using different body parts, for example: toes, feet, legs, arms, whole body until you are jumping
  4. Now that students have built up energy, ask them to start walking around the room slowly
  5. Do not make contact with the other students (no collisions yet)
  6. Ask students to move with low energy (they should be walking slowly through the room).
  7. Ask students to gain more energy, (without running, moving a little quicker).
  8. Now select the energy level for the students to move at and go through low, medium and high energy a few times.

### Exercise 2 - Collisions

We are now introducing intentional collisions. Collisions will be represented by a high five. In this game two types of collisions will take place:

1. A moving student will high five a stationary student. The moving student will now be stationary and the previously stationary student move around the room
  2. Two moving students will high five. They will both keep moving but in opposite directions
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1. Assign half of the students to have energy and the other half to have not energy
  2. Have the students disperse and start by all standing still
  3. Ask the students with energy to start moving around the classroom
  4. Let the students know that they are now trying to interact with each other, so whenever they meet a student whether moving or standing still they should greet each other with a high five.
  5. Finally, you can add in low, medium and high energy levels. When the students are at high energy there should be more interactions.
  6. Prompting questions:
    - Were there more collisions at low, medium or high energy?
    - If one object colliding was much bigger than the other, how would the collision change?

