

Next Generation Science Standards Alignment with Spark Squad Volume 3: Nuclear Spark Squad Comic and Dodgeball Activity

K-PS2 Motion and Stability: Forces and Interactions

Disciplinary Core Idea

PS2.A: Forces and Motion

- Pushes and pulls can have different strengths and directions. (K-PS2-1),(K-PS2-2)
- Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (K-PS2-1), (K-PS2-2)

PS2.B: Types of Interactions

- When objects touch or collide, they push on one another and can change motion. (K-PS2-1)

PS3.C: Relationship Between Energy and Forces

- A bigger push or pull makes things speed up or slow down more quickly. (secondary to K-PS2-1)

K-PS3 Energy

Science and Engineering Practices

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

- Make observations (firsthand or from media) to collect data that can be used to make comparisons. (K-PS3-1)

Cross-cutting Concepts

- Events have causes that generate observable patterns. (K-PS3-1), (K-PS3-2)

1-PS4 Waves and their Applications in Technologies for Information Transfer

1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated.

Matter and Its Interactions

- 5-PS1-1: Develop a model to describe that matter is made of particles too small to be seen.
- **Disciplinary Core Idea**
 - PS1.A: Structure and Properties of Matter: Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gases are made from

matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects. (5-PS1-1)

3-PS2-1 Motion and Stability: Forces and Interactions

Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

3-PS2-2 Motion and Stability: Forces and Interactions

Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

3-PS2 Motion and Stability: Forces and Interactions

4-PS3-3 Energy

Ask questions and predict outcomes about the changes in energy that occur when objects collide.

3-5-ETS1-2 Engineering Design

Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.