**Unit Essential Question:** *How do our bodies produce and use the energy needed to move objects?*



https://www.wikihow.com/Be-an-Awesome-Kickball-Player

Every day, we make objects move without thinking twice about how it works! As a class,

* Go outside and observe different classmates kicking a kickball. What do you notice?

Part A: If you wanted to know more about what is happening when humans kick a kickball, what questions would you ask? Individually record any questions you would need to ask to get a better understanding of our bodies making objects move.

Part B: As a group,

* Discuss what questions each member wrote on his or her list.
* On a large piece of poster paper:
  + Write the phrase “Humans Kicking a Kickball” in the middle of your poster and draw a circle around it.
  + Around the circle, record the questions that were similar across your group members.
  + Draw lines to link together questions that relate to each other.
  + Draft possible answers to the questions, using your prior knowledge. Connect these to the questions on your poster.
* Post your group poster on the wall.
* Walk around and look at each groups’ ideas.

Part C: As a whole class,

* Construct a class concept map with the phenomenon in the middle: “Humans Kicking a Kickball”.
  + Decide which key questions you want to have on the concept map.
  + Draw lines with arrows between two key questions to show that there is a relationship.
  + Make as many connections as you can between the questions on the concept map.
* It’s important for everyone to share their ideas and it’s okay if you don’t agree.
* You will revise and add new questions and information to this concept map as you learn more about moving objects and the human body.

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**Connecting to the Culminating Project**

You have been asked to teach people how their bodies make the movement of objects possible in a specific activity. Brainstorm a list of activities that involve humans putting an object in motion. Circle ones that you are interested in using for your project.

This should be completed individually in your Project Organizer.

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**Reflection**

Individually reflect on the Lift-Off Task, using the questions provided:

1. At the beginning of this task, you made a list of all the questions you have about humans kicking a kickball. Look back at your list: think about the questions your peers asked that you did not initially write down. How are their questions different from the ones you originally asked?
2. In this unit, we will be focusing on five crosscutting concepts:
   * **Cause and Effect**: Cause and effect relationships may be used to predict phenomena.
   * **Scale, Proportion, and Quantity**: Phenomena that can be observed at one scale may not be observable at another scale.
   * **Systems and System Models**:Systems may interact with other systems and may have sub-systems.
   * **Energy and Matter**: Energy may take different forms.
   * **Structure and Function:** Relationships between parts can be analyzed to determine how systems function.

Looking at your class concept map, give one example of how a crosscutting concept came up in today’s task.

1. Now that you understand what project you’ll be working on over the course of this unit, what else do you need to know? What additional questions do you have?