SCILLSS Classroom Science Assessment Workshop

# Grade 8 Unpacking Tool Activity Directions

To complete the Unpacking Tool Activity, use the **Grade 8** **Partially Completed Unpacking Tool**. To complete the tool for the given standard, sort the statements below into the appropriate dimension (SEP, DCI, CCC) and section (*Key Aspect* or *Prior Knowledge*) on the tool. Use the recommended resources listed in the PowerPoint presentation. Note the statements are organized by dimension below to support your work.

## Science and Engineering Practices

* Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation.
* Use large data sets to identify nonlinear relationships.
* Compare and contrast data collected by different groups in order to discuss similarities and differences in their findings.
* Use large data sets to identify linear relationships.
* Analyze and interpret data to provide evidence for phenomena.

**Disciplinary Core Ideas**

* Unbalanced forces, like pushes and pulls, make objects move.
* Force causes change in the motion or direction of an object.
* Lighter objects require less energy to move than heavy objects.
* The potential energy objects have is dependent on their relative positions.
* The motion of an object is dependent on the force applied to it.
* The kinetic energy of an object increases if either the mass or the speed of the object increases or if both increase.
* The motion energy (kinetic energy) of an object increases as it travels faster.
* The relationship between kinetic energy and mass is a linear proportional relationship.
* The kinetic energy of an object grows with the square of its speed.
* The relationship between kinetic energy and speed is a nonlinear (square) proportional relationship.
* Objects can change motion, slow, stop, or change direction.
* Motion is the change in an object’s location over time.
* The proportional relationship between kinetic energy and the mass and speed of an object.

## Crosscutting Concepts

* Ratio and proportionality provide information about the magnitude of properties.
* Taking measurements of structures and phenomena are usually obtained, analyzed, and interpreted quantitatively.

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