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| M. Angileri | **6th grade science** | | **Lesson Plans 12-16-18 Kinetic Energy #2 Potential Energy #1** | | | | |
| NGSS Standards | **MS-PS3-1**  **MS-PS3-2**  **MS-PS3-5**  **DCI : MS-PS.3A**  **MS-PS3.A.2**  **MS-PS3-5**  S & E practices  CCC | | Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.  Develop a model to describe that the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in a system,  Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.  **Definition of Energy:** Motion energy is properly called kinetic energy; it is proportional to the mass of the moving object and grows with the square of its speed.  **Definition of Energy:** A system of objects may also contain stored(potential) energy, depending on their relative positions.  **Conservation of Energy and Energy Transfer:** When the motion energy of an object changes, there is inevitably some other change in energy at the same time.  **Analyzing and interpreting Data:** Construct and interpret graphical displays to identify linear and non-linear relationships.  **Developing and Using Models:** Unobservable Mechanisms: Develop a model to describe unobservable mechanisms.  **Scale, Proportion, and Quantity:** Proportional relationships among different types of quantities provided information about the magnitude of properties and processes.  **Energy and Matter:** Energy may take different forms.  **Systems & Models:** Models can be used to represent systems and their interactions-such as inputs, processes, and outputs- and energy, matter, and information flows within a system. | | | | |
| Essential Question | | When is the most kinetic energy being used when riding a rollercoaster?  How does a pinball machine use energy to move the steel ball? | | | | | |
| Vocabulary: | | **Density: Mass per unit of volume**  **Kinetic Energy: Energy of motion.**  **Law of Conservation of Energy: Energy can not be created or destroyed, energy just changes form.**  **Mass: A measure of how much matter is present in a substance.**  **Motion: The change in an object’s position with respect to time and in comparison, with the position of other objects used as reference points.**  **Speed: The rate of change of position (or distance traveled) with respect to time.**  **Energy: The ability to do work; required for changes to happen within a system.**  **Force: A push or pull that can change the motion of an object.**  **Potential Energy: Energy that is stored in a system or object.**  **Relative Position: Where an object is located in relation to another object.**  **System: A group of interacting or interdependent elements forming a complex whole.**  **Gravity: An attractive force that acts between all matter that has mass and is proportional to mass.**  **Electric Force: The fundamental force that occurs between two or more charged particles.**  **Magnetic Force: A force acting between magnets or moving electric charges.**  **Gravitational Field: The field around a body of mass that exerts a gravitational pull on all other objects in that field.** | | | | | |
|  | | **MONDAY** | | **TUESDAY**  **½ day** | **WEDNESDAY** | **THURSDAY**  **Field Trip** | **FRIDAY**  **Substitute** |
| Content Objective: | | SW demonstrate application of how a system of objects may also contain stored(potential) energy, depending on their relative positions by constructing an experiment to test gravitational potential energy with 70%accuracy. | | SW will demonstrate application of **how** the motion energy of an object changes, there is inevitably some other change in energy at the same time by solving problems with 7 % accuracy. | SW demonstrate evaluation of how a system of objects may also contain stored(potential) energy, depending on their relative positions by constructing an experiment to test gravitational potential energy with 70%accuracy. | SW demonstrate application of how a system of objects may also contain stored(potential) energy, depending on their relative positions by constructing an experiment to test gravitational potential energy with 70%accuracy. | SW demonstrate application of how a system of objects may also contain stored(potential) energy, depending on their relative positions by constructing an experiment to test gravitational potential energy with 70%accuracy. |
| Language objective | | SW reason to justify how a system of objects may also contain stored(potential) energy, depending on their relative positions by constructing an experiment to test gravitational potential energy using sentence stems with 70% accuracy. | | SW read/write to explain of **how** the motion energy of an object changes, there is inevitably some other change in energy at the same time using sentence frames with 70 % accuracy. | SW reason to justify how a system of objects may also contain stored(potential) energy, depending on their relative positions by constructing an experiment to test gravitational potential energy using the common assessment with 70% accuracy. | SW reason to justify how a system of objects may also contain stored(potential) energy, depending on their relative positions by constructing an experiment to test gravitational potential energy using sentence stems with 70% accuracy. | SW reason to justify how a system of objects may also contain stored(potential) energy, depending on their relative positions by constructing an experiment to test gravitational potential energy using sentence stems with 70% accuracy. |
| In class today | | Explore Activity 1: Potential Predictions  Read Scopepedia: Potential Energy  Study Guide | | Brain Pop: Potential Energy, Movie, Challenge, Quiz  Study Guide corrected | Test: Kinetic and Potential Energy | Kinetic and Potential Energy: The mechanics of energy Roller Skating | Explore 3: Energy in a skate park. |