|  |  |  |
| --- | --- | --- |
| 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 practicesCCC | 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 PredictionsRead Scopepedia: Potential EnergyStudy Guide | Brain Pop: Potential Energy, Movie, Challenge, QuizStudy Guide corrected | Test: Kinetic and Potential Energy | Kinetic and Potential Energy: The mechanics of energy Roller Skating | Explore 3: Energy in a skate park. |