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| M. Angileri  11-20-17 | **6th grade science** | | **Lesson Plans: Energy Transfer in Motion #1** | | | | |
| NGSS Standard | **MS-PS3-1.**  [**PS3. B.1:**](http://www.nap.edu/openbook.php?record_id=13165&page=120)  S & E  CCC | | **Construct, use and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from an object**  **Conservation of energy and energy transfer**: when motion energy of an object changes, there is inevitably some other changes in energy at the same time.  **Engaging in Argument from evidence**  Oral and Written:  Argument: Construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem. [Energy](http://www.nap.edu/openbook.php?record_id=13165&page=89) and Matter Forms of energy: Energy may take different forms (e. g. energy in fields, thermal energy, energy in motion | | | | |
| Vocabulary: | | **Energy:** The ability to work or cause change.  **Kinetic Energy:** The energy an object has due to its motion. Motion energy that is proportional to the mass of the moving object and grows with the square of its velocity. KE=1/2m x v squared  **Mass:** The amount of matter in an object.  **Motion:** The state in which one object’s distance from another is changing.  **Proportional relationship:** When two values exist in a constant ratio.  **Speed:** The Ratio of change of position with respect to time.  **Mechanical Energy:** Kinetic or potential energy associated with the motion or position of an object. The sum of the potential and kinetic energy in an object.  **Light Energy:** A form of energy that exhibits wave like behavior as it travels through space; part of the electromagnetic spectrum.  **Transfer:**  Moving from one place to another.  **Potential Energy:** Energy that is stored in a system or object.  **Thermal Energy:** Total kinetic energy of the tiny particles that make up matter. The faster the particles move, the warmer the matter becomes.  **Sound Energy**: Form of energy that is made by vibrations and requires a medium ( air, Water, or solids) in order to travel. | | | | | |
|  | | **MONDAY** | | **TUESDAY** | **WEDNESDAY** | **THURSDAY**  **Happy Thanksgiving** | **FRIDAY**  **Black Friday** |
| Content Objective: | | SW demonstrate comprehension of energy transfer as it relates to Newton’s cradle by summarizing the transfer of energy. | | SW demonstrate comprehension of energy transfer as it relates to Bowling by summarizing the transfer of energy from the marble to the pins. |  |  |  |
| Language objective | | SW write to describe the transfer of energy using a diagram and 3-5 sentences. | | SW write to describe the transfer of energy using a diagram and 3-5 sentences. |  |  |  |
| **Essential Question:** | | **What energy changes occur while swinging?** | | **What energy changes occur while swinging?** | **What energy changes occur while swinging?** |  |  |
| In class today | | Update classroom folders and data sheet.  Read article Newtons Cradle and complete the graphic organizer.  Penny Hockey activity | | Discuss Penny Hockey  Read article Bowling ball striking pins and graphic organizer.  Marble Bowling activity | Substitute  PBIS Lesson and event  See lessons from PBIS committee. | Thanksgiving | **Black Friday** |
| Learning Target | | I can describe the energy transfer between the pennies in the penny Hockey activity using a diagram and words using the terms potential and kinetic energy. | | I can describe the energy transfer between the marble and pins in the Marble bowling activity using a diagram and words using the terms potential and kinetic energy. | I can relate the video message and discussion topics to my interactions with peers in the classroom and hallway. | I can use proper manners and help my family members to show my appreciation for all that I have. | I will do my best to not snoop for gifts. |

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