**8th Grade Science Learning Targets: Energy**

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| 1. I am able to define and calculate kinetic and gravitational potential energy by using the provided formulas. |  |  | |  | |
| *Activities/Notes/Resources* | | | | | |
| 2. I am able to describe what is required to change the kinetic energy of an object and provide examples of how that could occur. |  |  | |  | |
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| 3. I am able to describe the relationship between kinetic energy and the speed (velocity) of an object. |  |  | |  | |
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| 4. I am able to describe the relationship between kinetic energy and the mass of an object. |  |  | |  | |
| *Activities/Notes/Resources* | | | | | |
| 5. I am able to describe the Law of Conservation of Energy. |  | |  | |  |
| *Activities/Notes/Resources* | | | | | |
| 6. I am able to identify and describe the energy transformations that take place in a given system. |  |  | |  | |
| *Activities/Notes/Resources* | | | | | |
| 7. I am able to draw a diagram that explains how the distance between two objects affects the amount of potential energy in the system (for gravitational, magnetic and electric interactions only). |  |  | |  | |
| *Activities/Notes/Resources* | | | | | |
| 8. I am able to explain how heat energy can be transferred within a system. (Conduction, Convection and Radiation) |  |  | |  | |
| *Activities/Notes/Resources* | | | | | |
| 9. I am able to describe the relationship between the kinetic energy of the particles of matter and the temperature of a sample. |  |  | |  | |
| *Activities/Notes/Resources* | | | | | |
| 10. I am able to describe the relationship between the amount of matter in a sample and the amount of energy transfer required to raise the temperature of that sample a certain amount. |  |  | |  | |
| *Activities/Notes/Resources* | | | | | |
| 11. I am able to explain how the type of matter can affect the amount of energy transfer required to raise the temperature of a sample a certain amount. |  |  | |  | |
| *Activities/Notes/Resources* | | | | | |
| 12. I am able to apply scientific knowledge to design, construct and test a device that minimizes or maximizes thermal energy transfer. |  |  | |  | |
| *Activities/Notes/Resources* | | | | | |