Maryland Science - Next Generation

Energy: Grades 9-12

Adopted 2013

Energy HS-PS3

HS-PS3-1. **Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.** HS-PS3-1

HS-PS3-2. **Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as either motions of particles or energy stored in fields.** HS-PS3-2

HS-PS3-3. **Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.** HS-PS3-3

HS-PS3-4. **Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).** HS-PS3-4

HS-PS3-5. **Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.** HS-PS3-5