



Science - Grade 8 - 10 Weeks

NYS Performance Indicators	Objectives	Text Resources	Resources (Suggested Activities)	Cross-Curriculum Connections	Assessment Items
MST4.I.PS3A	3.1a Substances have characteristic properties. Some of these properties include color, odor, phase at room temperature, density, solubility, heat and electrical conductivity, hardness, and boiling and freezing points.	Matter and Energy 41-43, 58-67	Identifying Liquids by Determining their Density Measuring Volume (Lab Generator) Mysterious Journey in the Life of a Raisin	Math- Solving simple one step equations (Volume and Density)	(Only up to 15 weeks) 7
MST4.I.PS3A	3.1h Density can be described as the amount of matter that is in a given amount of space. If two objects have equal volume, but one has more mass, the one with more mass is denser.	Matter and Energy 43, 49	See above	Math- Math Connections 49	1, 2, 3
MST4.I.PS3A	3.1i Buoyancy is determined by comparative densities.	Motion and Forces 99	See above	See above	
MST4.I.PS4A	4.1a The Sun is a major source of energy for Earth. Other sources of energy include nuclear and geothermal energy.	Motion and Forces 128	Investigating Mechanical Energy (Lab Generator)	Math- Math Connections 91	40
MST4.I.PS4A	4.1b Fossil fuels contain stored solar energy and are considered nonrenewable resources. They are a major source of energy in the United States. Solar energy, wind, moving water, and biomass are some examples of renewable energy resources.	Matter and Energy 2-5, 80, 88-90	See above	See above	36, 38, 51, 52
MST4.I.PS4A	4.1c Most activities in everyday life involve one form of energy being transformed into another. For example, the chemical energy in gasoline is transformed into mechanical energy in an automobile engine. Energy, in the form of heat, is almost always one of the products of energy transformations.	Matter and Energy 72, 78-81 Waves, Sounds, and Light 77, 82-86, 90-92	See above	See above	26, 28, 56
MST4.I.PS4A	4.1d Different forms of energy include heat, light, electrical, mechanical, sound, nuclear, and chemical. Energy is transformed in many ways.	Matter and Energy 69-76, 92 Motion and Forces 122-128	See above	See above	57

MST4.I.PS4A	4.1e Energy can be considered to be either kinetic energy, which is the energy of motion, or potential energy, which depends on relative position.	See above	See above	See above	53, 54
MST4.I.PS4B	4.2b Heat can be transferred through matter by the collisions of atoms and/ or molecules (conduction) or through space (radiation). In a liquid or gas, currents will facilitate the transfer of heat (convection).	Matter and Energy 116-119			11
MST4.I.PS4C	4.3a In chemical reactions, energy is transferred into or out of a system. Light, electricity, or mechanical motion may be involved in such transfers in addition to heat.	Chemical Interactions 86-100	Endo or Exothermic (Lab Generator)	Math- Endo or Exothermic (Graphing)	
MST4.I.PS4D	4.4a Different forms of electromagnetic energy have different wavelengths. Some examples of electromagnetic energy are microwaves, infrared light, visible light, ultraviolet light, X-rays, and gamma rays.	Motion and Forces 128 Waves, Sound and Light 2-5, 71-86, 102	Quiet Please (Lab Generator)	Math- Quiet Please (Have students graph the data table.)	29
MST4.I.PS4D	4.4b Light passes through some materials, sometimes refracting in the process. Materials absorb and reflect light, and may transmit light. To see an object, light from that object, emitted by or reflected from it, must enter the eye.	Waves, Sound and Light 93-128	See above	See above	24, 58, 59
MST4.I.PS4D	4.4c Vibrations in materials set up wave-like disturbances that spread away from the source. Sound waves are an example. Vibrational waves move at different speeds in different materials. Sound cannot travel in a vacuum.	Waves, Sound and Light 9-51	See above	See above	31, 32
MST4.I.PS4D	4.4d Electrical energy can be produced from a variety of energy sources and can be transformed into almost any other form of energy.	Matter and Energy 80-92	See above	See above	30
MST4.I.PS4D	4.4e Electrical circuits provide a means of transferring electrical energy.	See above	See above	See above	25
MST4.I.PS4D	4.4f Without touching them, material that has been electrically charged attracts uncharged material, and may either attract or repel other charged material.	See above	See above	See above	
MST4.I.PS4D	4.4g Without direct contact, a magnet attracts certain materials and either attracts or repels other magnets. The attractive force of a magnet is greatest at its poles.	See above	See above	See above	27
MST4.I.PS4E	4.5a Energy cannot be created or destroyed, but only changed from one form into another.	See above			8, 18

[MST4.I.PS4E](#)

4.5b Energy can change from one form to another, although in the process some energy is always converted to heat. Some systems transform energy with less loss of heat than others.

See above

9

[Gr 8 Science Checklist](#)

[Standard 1-Analysis, Inquiry & Design](#)

[Gr 8 Science Report Card Objectives](#)

Vocabulary

Technology Links

Absorption	(Continued)	(Continued)	(Continued)	(Continued)
Attractive Force	Electrical Circuit	Law of	Repulsion	Characteristic
Average	Electrical Energy	Conservation of	Solar Energy	Properties
Kinetic Energy	Electrically	Energy	Sound	Comparative
Biomass	Charged	Light Energy	Sound Wave	Density
Chemical	Electromagnetic	Magnet	Temperature	Observable
Energy	Energy	Mechanical	Transmission	Characteristics
Collision	Energy	Energy	Ultraviolet Light	Physical
Conduction	Energy of Motion	Microwaves	Vacuum	Properties
Conservation	Energy	Nonrenewable	Vibration	Substance
of Energy	Transformation	resources	Visible Light	
Contract	Expand	Nuclear Energy	Wavelength	
Convection	Fossil Fuels	Particles	X-Ray	
Cooling Event	Gamma Ray	Poles	Buoyancy	
Current-	Geothermal	Potential energy	Density	
Direct/	Energy	Radiation		
Alternating	Heat	Reflection		
	Heating Event	Refraction		
	Infrared light	Relative Position		
	Kinetic Energy	Renewable		
		Resource		

[Close Window](#)