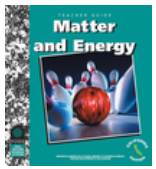

Third Grade: FOSS
Physical Science - Matter and Energy

Investigation Title and Synopsis	Concepts	Assessments and TE Page Numbers
1. Energy Students investigate different forms of energy(light,sound, and motion) and determine ways that energy is converted to make things happen.They explore ways that energy forms are carried from one place to another. Students explore energy working with materials(batteries,bulbs, candles,solar cells, springs toys, rolling balls), through reading, and through video.	• Energy makes things happen • Energy takes many forms • Most of the energy used by organisms, including humans, comes from the Sun in the form of light • Stored energy can be converted to other forms of energy • Machines and living things can convert energy into motion and heat • Energy can be carried from one place to another by waves, electric current, and moving objects	• Pretest (pages 349-353) • Part 1 Embedded Assessment: (pages 294-295) Science Notebook Sheet 3 *Energy Sources Questions* (page 205) • Part 2 Embedded Assessment: (pages 296-297)/ Science Notebook Sheet 5 Response Sheet *Energy* (page 207) • Benchmark Assessment I-Check 1 Assessment Masters (pages 354-356)
2. Light Students use mirrors to reflect light and learn that light travels in straight lines. They are introduced to blocked light(shadows), light absorption, and to white light as a mixture of all colors of light. They investigate firsthand and through simulations, video, and readings how the appearance of an object is affected by the color of light striking it.	• Light is form of energy that travels in straight lines from light source • Light can reflect off surfaces that it strikes • An object is seen only when light from that object enters an eye • White light is mixture of all colors • Light can be absorbed by matter • The apparent color of an object is the result of the light it reflects • The apparent color of an object is affected by the color of light striking it • A shadow is created when objects block light	• Embedded Assessment: Teacher Observation: for Part 1 (page 298) • Part 2 Embedded Assessment: (pages 299-300)/ Teacher Observation: Ability to use mirrors effectively to redirect a beam of light/Science Notebook Sheet 13 *Throw a little light on sight questions* (page 215) • Benchmark Assessment I-Check 2 Assessment Masters (pages 357-359)

Investigation Title and Synopsis	Concepts	Assessments and TE Page Numbers
3. Matter Students work with different states of matter, measure mass and volume using metric standards and tools, and solve problems using their knowledge of metric measurement. They develop a set of defining characteristics for states of matter. They read about the difference between opinion and evidence.	• The behavior of a sample of matter in an open container indicates its state • The gram(g) is the standard unit of measure used to quantify mass in the metric system • Volume is a measure of the three-dimensional space occupied by matter • The liter (L) is the standard for measuring fluid volume in the metric system • Opinion is based on belief; scientific evidence is based on observation	• Part 1 Embedded Assessment: (page 301)/ Science Notebook Sheet 14 *Solids, Liquids, or Gases?* (page 216) Teacher observation (pages 121,129)/ Identifying states of matter • Part 2 Embedded Assessment: (pages 302-303)/ Science Notebook Sheet 18 *Opinion and Evidence Questions?* (page 220) • Part 3 Embedded Assessment: (page 304)/ Science Notebook Sheet 19 *Measuring Volume* (page 221)/Teacher Observation: Compares measurements and checks predictions • Benchmark Assessment I-Check 3 Assessment Masters (pages 360-362)
4. Changing Matter Students use the thermometer to measure and record temperatures as they explore melting of common substances. The class conducts an evaporation investigation, and students use data to draw conclusions. Students combine substances and observe the results of a chemical reaction. They read about atoms and elements.	• Degree Celsius(*C) is the unit used when scientists measure temperature • Melting occurs when solids are heated • Different substances melt at different temperatures • Evaporation occurs when a liquids are heated • When two substances are combined, a reaction may occur, producing a new substance with unique properties • Matter is made of small particles, atoms	• Part 1 Embedded Assessment: (page 305)/ Teacher observation: Ability to measure accurately and record systematically/Science Notebook Sheet 20 *Measuring Temperature* (page 222) • Part 2 Embedded Assessment: (page 306) Science Notebook Sheet 21 *Melting* (page 224) • Benchmark Assessment I-Check 4 Assessment Masters (pages 363-365) • Posttest (pages 349-353)