

Overview Chart for Hands-on Activities – Quarter 3

Hands-on Activity	Student Objectives
21 Doing Work <i>page 239</i>	<ul style="list-style-type: none"> • measure the force required to move an object • measure the distance the object was moved • calculate how much work was done when the object was moved a measured distance
22 Friction <i>page 247</i>	<ul style="list-style-type: none"> • observe the effects of friction • examine variables that increase and decrease friction • discover one method of reducing friction
23 Pulleys <i>page 257</i>	<ul style="list-style-type: none"> • construct a simple pulley • measure the force required to lift an object, with and without the use of a pulley • observe that a pulley reverses the direction of applied force
24 Moving Masses <i>page 265</i>	<ul style="list-style-type: none"> • observe the relationship between force and acceleration • observe the relationship between mass and acceleration • compare their results with their hypotheses • predict the falling rate of balls of different masses
25 Modeling Moon Phases <i>page 275</i>	<ul style="list-style-type: none"> • model the orbit of the Moon around Earth • learn how the orbit of the Moon results in the phases we observe from Earth
26&27 Solar Journal <i>page 287</i>	<ul style="list-style-type: none"> • keep an ongoing record of the times and positions of sunset and sunrise • recognize the apparent motion of the Sun • prepare data for use in future activities
28&29 The Reason for Seasons <i>page 297</i>	<ul style="list-style-type: none"> • model the tilt of Earth's axis as it orbits the Sun • learn about solstices and equinoxes and the role they play in the Sun's apparent motion • explore how the angle at which sunlight reaches a given location affects its concentration • infer the causes of seasonal changes
30 Constellations: Stories in the Sky <i>page 311</i>	<ul style="list-style-type: none"> • observe seasonal changes in the position of constellations as viewed from Earth • construct constellation models and identify several constellations • write a fictional story about the origin of a constellation

Process Skills	Vocabulary	Delta Science Reader
measure; compare; use numbers; collect data	force, joule, newton, work	
observe; use variables; infer	friction, lubricant	
make and use models; measure; observe	pulley	
observe; form a hypothesis; design an experiment; control variables; compare; predict; interpret data; conclude	acceleration, controlled variable, dependent variable, hypothesis, independent variable, Newton's second law of motion	
make and use models; compare; communicate	crescent, first quarter Moon, full Moon, gibbous, new Moon, phase, third quarter Moon	<i>Earth, Moon, and Sun, pages 14–15</i>
observe; collect, record, display, and interpret data	horizon, sunrise, sunset	<i>Earth, Moon, and Sun, pages 6–8, 20</i>
make and use models; investigate; infer	direct sunlight, equinox, indirect sunlight, solstice	<i>Earth, Moon, and Sun, pages 11–12</i>
observe; make and use models; communicate	Big Dipper, Cassiopeia, Cepheus, constellation, mythology, Orion	