

BROWARD COUNTY ELEMENTARY SCIENCE BENCHMARK PLAN

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
K	<p>STRAND A The Nature of Matter</p> <p>Introduction to Science The Senses, Classification, Properties SC.A.1.1.1 SC.A.1.1.3</p> <p>STRAND D Weather – types of weather, precipitation – e.g. sun, wind, rain, snow, sleet, hail SC.D.1.1.3 SC.D.2.1.1</p> <p>STRAND H The Nature of Science Tools of science <u>Tools</u>: hand lens, primary balance, nonstandard measurement tools <u>Nonstandard Measurement</u></p> <p>SC.H.1.1.1, SC.H.1.1.3, SC.H.1.1.4, SC.H.1.1.5, SC.H.2.1.1, SC.H. 3.1.1, SC.H.1.1.2</p>	<p>STRAND F The Processes of Life</p> <p>Identifies living and nonliving things, SC.F.1.1.2</p> <p>STRAND G How Living Things Interact with Their Environment Classifies living and non-living Identifies basic needs of living things</p> <p>SC.G.1.1.1 SC.G.2.1.1</p> <p>STRAND H The Nature of Science</p> <p>SC.H.1.1.1, SC.H.1.1.3 SC.H.1.1.4, SC.H.1.1.2</p>	<p>STRAND F The Processes of Life</p> <p>Living things change and grow over time, life cycles – e.g. Metamorphosis, caterpillar- butterfly, baby animals</p> <p>SC.F.1.1.1 SC.F.1.1.3 SC.F.2.1.1</p> <p>STRAND H The Nature of Science</p> <p>SC.H.1.1.1, SC.H.1.1.3 SC.H.1.1.4, SC.H.1.1.2</p>	<p>STRAND C Force and Motion</p> <p>Push and pull, balance, Things move in different ways - e.g. transportation: cars, boats, planes, etc.... Living things – walking, swimming, flying, etc....</p> <p>SC.C. 1.1.1 SC.C. 1.1.2 SC.C. 2.1.1</p> <p>STRAND H The Nature of Science</p> <p>SC.H.1.1.1, SC.H.1.1.3 SC.H.1.1.4, SC.H.1.1.2</p>

<p>Grade 1</p>	<p>STRAND A The Nature of Matter</p> <p>States of matter, physical properties, classification, magnification, many things are made of smaller pieces, different amounts and various shapes</p> <p>SC.A.1.1.1 SC.A.1.1.2 SC.A.2.1.1</p> <p>STRAND H The Nature of Science</p> <p>Tools of Science, Introduction to metric linear measurement, <u>Tools</u>: Rulers, Primary balance, hand lens, microscope <u>Metric measurement</u>: Linear measurement (cm) Mass – gram cubes</p> <p>SC.H.1.1.1, SC.H.1.1.3 SC.H.1.1.5, SC.H.1.1.2 SC.H.3.1.1</p>	<p>STRAND F The Processes of Life</p> <p>-Structures and functions of living things; plants and animals – e.g. Stem, leaf, roots, lungs, gills, skin, etc..., - knows living things reproduce, life cycles – e.g. tadpole - frog -Structures of living things are adapted to their functions in specific environments, -There are many different kinds of living things that live in a variety of environments, -Animal Classification</p> <p>SC.F.1.1.4 SC.F.2.1.2 SC.F.1.1.5</p> <p>STRAND G How Living Things Interact with Their Environment</p> <p>Animals and plants can be associated with their environment by examination of their structural characteristics</p> <p>SC.G.1.1.4</p> <p>STRAND H The Nature of Science</p> <p>SC.H.1.1.1, SC.H.1.1.3 SC.H.1.1.4, SC.H.2.1.1, SC.H.1.1.2</p>	<p>STRAND C Force and Motion</p> <p>-Different things move at different speeds -Sound is caused by vibrations (pushing and pulling) to cause waves</p> <p>SC.C.1.1.1 SC.C.1.1.2 SC.C.2.1.2</p> <p>STRAND H The Nature of Science</p> <p>SC.H.1.1.1, SC.H.1.1.3 SC.H.1.1.4, SC.H.3.1.1, SC.H.1.1.2</p>	<p>STRAND B Energy</p> <p>Heat can be produced in many ways</p> <p>SC.B.1.1.4</p> <p>The sun supplies heat and light energy to earth (solar energy)</p> <p>SC.B.1.1.1</p> <p>Light can pass through some objects and not others</p> <p>SC.B.1.1.2</p> <p>Systems of matter and energy (e.g. identifies parts of a simple system)</p> <p>SC.B.2.1.1</p> <p>STRAND H The Nature of Science</p> <p><u>Tools</u>: thermometers <u>Metric measurement</u>: Temperature (Degrees Celsius)</p> <p>SC.H.1.1.1, SC.H.1.1.4, SC.H.1.1.5, SC.H.3.1.1, SC.H.1.1.2, SC.H.1.1.3, SC.H.2.1.1</p>
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<p>Grade 2</p>	<p>STRAND A The Nature of Matter</p> <p>Similarities and differences, Phase changes, changes in physical properties, mixtures</p> <p>SC.A.1.1.1 SC.A.1.1.2 SC.A.1.1.3</p> <p>STRAND B Energy</p> <p>Heat and its impact on matter</p> <p>SC.B.1.1.4</p> <p>STRAND H The Nature of Science <u>Tools:</u> Primary balance, thermometer, hand lens, microscope. <u>Metric measurement:</u> temperature (Degrees Celsius), mass – gram masses</p> <p>SC.H.1.1.1, SC.H.1.1.4, SC.H.1.1.5, SC.H.3.1.1, SC.H.1.1.2, SC.H.1.1.3</p>	<p>STRAND E Earth and Space</p> <p>Night and day (24 hours), Seasons and seasonal changes, Moon, sun and other stars</p> <p>SC.E.1.1.1 SC.E.1.1.2 SC.E.2.1.1</p> <p>STRAND H The Nature of Science SC.H.1.1.1, SC.H.1.1.3 SC.H.1.1.4, SC.H.2.1.1, SC.H.1.1.2</p>	<p>STRAND D Processes that Shape the Earth</p> <p>The earth’s surface consists of various materials (e.g. soil, sand, and rocks, fossils (use hand lens, microscopes)</p> <p>SC.D.1.1.1</p> <p>Life occurs on or near the surface of Earth in land, air and water</p> <p>SC.D.1.1.2</p> <p>STRAND G How Living Things Interact with Their Environment Characteristics of different environments, animal adaptations</p> <p>SC.G.1.1.3 SC.G.1.1.4</p> <p>STRAND H The Nature of Science</p> <p>SC.H.1.1.1, SC.H.1.1.4, SC.H.1.1.5, SC.H.3.1.1, SC.H.1.1.2, SC.H.1.1.3</p>	<p>STRAND G How Living Things Interact with Their Environment</p> <p>Plants and animals dependent on each other, food chains</p> <p>SC.G.1.1.2 SC.G.1.1.4 SC.G.2.1.2</p> <p>STRAND D Processes that Shape the Earth People influence the quality of life of those around them</p> <p>SC.D.2.1.1</p> <p>STRAND B Energy</p> <p>Every human action requires energy that comes from food</p> <p>SC.B.1.1.5</p> <p>Describes a model energy system (e.g. an aquarium or terrarium)</p> <p>SC.B.1.1.3</p> <p>STRAND H The Nature of Science SC.H.1.1.1, SC.H.1.1.4, SC.H.1.1.5, SC.H.3.1.1, SC.H.1.1.2, SC.H.1.1.3</p>
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<p>Grade 3</p>	<p>STRAND A The Nature of Matter</p> <p>Properties of materials such as volume and mass* can be compared and measured (e.g. using rulers, balances – triple beam balance and pan balance, thermometers)</p> <p>SC.A.1.2.1</p> <p>- The weight* of an object equals the sum of its parts. - The mass* of an object equals the sum of its parts.)</p> <p>SC.A.1.2.3</p> <p>* Mass is measured in grams and kilograms. When measuring with <i>grams and kilogram</i> units, students are finding the mass of objects not the weight. Weight is measured in <i>pounds and ounces</i>. Weight is a function of gravity. Mass is not. The mass of an object never changes. Weight changes when we go to different planets (e.g. the moon) because the gravity is different.</p> <p>- Common materials can be changed from one state to another by heating and cooling - Mass is conserved during</p>	<p>STRAND B Energy</p> <p>Heat Transfer Conduction, convection, radiation, thermal energy</p> <p>SC.B.1.2.3 SC.B.1.2.6</p> <p>STRAND D Processes that Shape the Earth</p> <p>Water cycle, weather, climate Water/land ratio</p> <p>SC.D.1.2.3 SC.D.1.2.2</p>	<p>STRAND C Force and Motion</p> <p>Types of motion can be described, measured and predicted</p> <p>SC.C.1.2.1</p> <p>Identifies forces acting on an object – e.g. gravity, friction,</p> <p>The more massive an object is, the less effect a given force has</p> <p>SC.C.2.2.3</p> <p>Waves travel at different speeds through different materials</p> <p>SC.C.1.2.2</p>	<p>STRAND G How Living Things Interact with Their Environment</p> <p>Environment - Habitats & ecosystems (e.g. desert, ocean, tropical, savannah, polar) - Food chains, food webs, energy transfer (e.g. How can our energy be traced back to the sun?), producers, consumers, decomposers - Interactions of plants, animals and protists</p> <p>SC.G.1.2.1 SC.G.1.2.2 SC.G.1.2.4 SC.G.1.2.5 SC.G.1.2.6</p> <p>STRAND F The Processes of Life</p> <p>All animals depend on plants</p> <p>SC.F.1.2.2</p> <p>STRAND B Energy</p> <p>A source of energy is needed for organisms to live and grow</p> <p>SC.B.2.2.1</p>
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	<p>heating and cooling</p> <p>SC.A.1.2.2</p> <p>States of matter, physical and chemical changes</p> <p>SC.A.1.2.4 SC.A.1.2.5</p> <p>STRAND H The Nature of Science <u>Tools:</u> Triple beam balance, pan balance, gram masses graduated cylinder, beaker, measuring cup, measuring spoon) <i>Metric System is the language of science.</i></p> <p>SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.2.2.1, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4</p>	<p>STRAND H The Nature of Science</p> <p>SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.2.2.1, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4</p>	<p>STRAND H The Nature of Science <u>Tools:</u> Spring Scales to measure force (<i>unit is Newtons</i>)</p> <p>SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4</p>	<p>Traces the flow of energy in a system</p> <p>SC.B.1.2.1</p> <p>STRAND H The Nature of Science</p> <p>SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4</p>
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<p>Grade 4</p>	<p>STRAND D Processes that Shape the Earth</p> <ul style="list-style-type: none"> - Landforms - Slow Processes and Rapid Processes that change the earth's surface - erosion, weathering, volcanoes, earthquakes, hurricanes, tsunamis, floods - Rocks break down into smaller rocks to form soil - Rock Cycle <p>SC.D.1.2.1 SC.D.1.2.4 SC.D.1.2.5</p> <p>STRAND H The Nature of Science <u>Tools:</u> Triple beam balance, pan balance, graduated cylinder, beaker, measuring cup, rain gauge, hand lens, microscope</p> <p>SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.2.2.1, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4</p>	<p>STRAND E Earth and Space</p> <p>Astronomy - planets, stars, galaxy, universe, day and night, seasonal day length, temperature, rotation, revolution, orbits, seasons - Earth's tilt causes the seasons</p> <p>SC.E.1.2.1 SC.E.1.2.3 SC.E.1.2.4 SC.E.1.2.5 SC.E.2.2.1</p> <p>STRAND H The Nature of Science SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.2.2.1, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4</p>	<p>STRAND F Processes of Life</p> <p>Classification – Living things are different but share similar structures</p> <p>SC.F.1.2.3</p> <p>The Human Body is made of systems with structures and functions</p> <p>SC.F.1.2.1</p> <p>Many characteristics of an organism are inherited from their parents, but others are learned</p> <p>SC.F.2.2.1</p> <p>STRAND H The Nature of Science SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.2.2.1, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4</p>	<p>STRAND G How Living Things Interact with Their Environment</p> <ul style="list-style-type: none"> - Photosynthesis, - Variations in environments result in variations in organisms - Organisms adapt to compete for resources, size of a population depends on available resources - Changes in a habitat may be helpful or harmful to organisms - Endangered species <p>SC.G.1.2.2, SC.G.1.2.3 SC.G.1.2.7, SC.G.2.2.1 SC.G.2.2.2, SC.G.2.2.3</p> <p>STRAND C Force and Motion</p> <ul style="list-style-type: none"> - Simple Machines – inclined plane, wedge, lever, screw, gears, wheel & axle - Forces of gravity, magnetism and electricity operate simple machines <p>SC.C.2.2.1</p> <p>STRAND H The Nature of Science SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.2.2.1, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4</p>
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Grade 5	STRAND A The Nature of Matter	STRAND B Energy	STRAND C Force and Motion	STRAND D Processes that Shape the Earth
	<p>Properties of materials can be compared and measured - mass, volume, density</p> <p>SC.A.1.2.1</p> <p>Atoms, molecules, elements, compounds, mixtures and solutions</p> <p>SC.A.1.2.4 SC.A.1.2.5 SC.A.2.2.1</p> <p>STRAND F The Processes of Life Similar cells form different kinds of structures</p> <p>SC.F.1.2.4</p> <p>STRAND H The Nature of Science</p> <p><u>Tools:</u> Triple beam balance, graduated cylinder, beaker, measuring cup, microscope, hand lens)</p> <p>SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.3.2.1,</p>	<p>Electricity Magnetism Electromagnetism</p> <p>Other Forms of Energy (e.g. chemical, light, heat, sound, mechanical, hydroelectric, thermal, nuclear, radiant)</p> <p>Potential and Kinetic Energy</p> <p>Energy Transformations</p> <p>SC.B.1.2.1 SC.B.1.2.2 SC.B.1.2.4 SC.B.1.2.5</p> <p>Light – things that emit light also emit heat</p> <p>SC.B.1.2.3</p> <p>-Renewable and nonrenewable sources of energy -Fossil fuels</p> <p>SC.B.1.2.1 SC.B.1.2.2 SC.B.2.2.2 SC.B.2.2.3</p>	<p>Newton’s Laws, Net Force</p> <p>The motion of an object is dependent on the net force acting on that object</p> <p>SC.C.2.2.2</p> <p>The more mass an object has, the less effect a given force has on it</p> <p>SC.C.2.2.3</p> <p>The motion of an object is determined by the overall effect of the forces acting on it</p> <p>SC.C.2.2.4</p> <p>STRAND E Earth and Space</p> <p>Moon phases</p> <p>SC.E.1.2.2 Stars (the sun and others), galaxies, seasons, years, rotation, revolution,</p> <p>SC.E.1.2.1 SC.E.1.2.3 SC.E.2.2.1</p>	<p>- Reusing, recycling and reducing the use of natural resources improve and protect the quality of life - Conservation of resources</p> <p>SC.D.2.2.1</p> <p>STRAND F The Processes of Life</p> <p>- Plant structures and their functions - Classification of plants; vascular & nonvascular; angiosperms & gymnosperms - Uses of plants – medicines, foods, clothing</p> <p>SC.F.1.2.3 SC.F.1.2.4</p> <p>STRAND H The Nature of Science</p> <p>SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.2.2.1, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4</p>

	SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4	STRAND H The Nature of Science SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.2.2.1, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4	STRAND H The Nature of Science SC.H.1.2.1, SC.H.1.2.2, SC.H.1.2.3, SC.H.1.2.4, SC.H.1.2.5, SC.H.2.2.1, SC.H.3.2.1, SC.H.3.2.2, SC.H.3.2.3, SC.H.3.2.4	
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Kits must include instructions and materials for at least one COMPLETE* SCIENTIFIC METHOD EXPERIMENT PER GRADE LEVEL as follows:

<u>GRADE LEVEL</u>	<u>STRAND</u>	<u>TOPIC</u>
K	STRAND C Force and Motion	Push & Pull
1	STRAND F Processes of Life	Plants
2	STRAND A The Nature of Matter	Phase Changes
3	STRAND B Energy	Heat Transfer
4	STRAND D Processes that Shape the Earth	Weathering and Erosion
5	STRAND C Force and Motion	Newton's Laws

*Contains all steps in the scientific method in the form of a science fair type project.

Title, Statement of the Problem, Background Information, Hypothesis, Variables (Independent, Dependent, Controlled), Materials, Procedure, Data (Qualitative and Quantitative) with graphs, charts and observations, Data Analysis, Conclusion, Recommendations, Acknowledgments, Bibliography