

GRADE 6 SCIENCE PROGRAM 2011-2012

Resources:

- Silver Burdett & Ginn *Science Horizons*
- Prentice Hall *Science Explorer – Earth Science and Life Science*
- Class notes and handouts

CALENDAR	LESSONS	OBJECTIVES	ACTIVITIES/PROJECTS/ LABS/TESTS
<i>September</i>	Introduction to the Scientific method Procedure	Students should be able to follow the scientific method procedure in preparing for a laboratory experiment and in discussing the lab results.	Activity: quantitative and qualitative observations
<i>September</i>	PHYSICAL SCIENCE Chapter: Classifying Matter Matter The Elements	Students should be able to <ul style="list-style-type: none"> • define the terms matter, mixture, and substance; • describe how elements and compounds differ; • define the term property; • compare and contrast between physical and chemical properties of matter; • explain how elements are organized in the periodic table of the elements; • name properties to identify metals, non-metals, semi-metals and noble gases; • define and model the atom and subatomic particles; • state the differences between atoms of different elements; • define the term molecule; • demonstrate how chemical symbols are written; • describe what constitutes a chemical formula. 	Activity: Measuring and estimating volume Mid CHAPTER TEST Laboratory: Using indirect observations. End of CHAPTER TEST
<i>September - October</i>	Chapter: Changes in Matter Physical changes; Mixtures; Solutions; Chemical changes	Students should be able to <ul style="list-style-type: none"> • define the term physical change; • describe the relationship between heat and changes in state; • explain how matter expands and contracts during state changes; • define and explain what a mixture is; • identify ways to separate a mixture using physical means; • contrast the properties of a solution with the properties of a mixture that is not a solution; • name and describe solute, solvent, solution. 	Activity: Observing different kinds of paper CHAPTER TEST

		<ul style="list-style-type: none"> • understand corrosion; • define chemical change; • describe oxidation. 	
<i>November</i>	Changes of state Solids, liquids, gasses	<p>Students should be able to</p> <ul style="list-style-type: none"> • describe the changes of state relative to temperature changes; • describe how matter expands and contracts relative to temperature changes. 	Laboratory: Separating a Martian Mixture. CHAPTER TEST
<i>December - March</i>	EARTH SCIENCE Soil Its formation Water The water cycle Water is a precious resource. What can we do to preserve it? The Atmosphere Definition; composition; the ozone layer	<p>Students should be able to</p> <ul style="list-style-type: none"> • define what soil is; • describe how soil is produced; • explain what lives in soil and how these organisms contribute to a “healthy” soil; • describe what characteristics an earthworm has and observe how an earthworm contributes to soil making; • define the water cycle; • explain what makes fresh water a precious resource; • keep a diary of daily water consumption; • explain what behaviour can help preserve this resource; • define what chemical composition air has; • define the layers of the atmosphere; • explain the relationship between air pressure and altitude; • describe how temperature affects air density; • define the ozone layer and its characteristics; • describe what chemicals have depleted the ozone layer; • explain global warming and its effects on weather patterns. 	Laboratory: Air density vs. Temperature PROJECT: How much water do you use? PROJECT: the earth worm and soil transformation CHAPTER TESTS + QUIZZES Documentaries: “An Inconvenient Truth”; “Deep Blue”
<i>February - April</i>	Full Earth Day Preparation	<p>During the Earth Day preparation period students will apply the notions learned during science laboratories to specific environmental studies. The students will work on projects that will involve the other classes as they prepare to become “environmental ambassadors” for the Earth Day anniversary. The objectives of Earth Day will be to</p> <ul style="list-style-type: none"> • raise awareness about environmental issues; • involve students in environmentally friendly activities; 	Students will be assessed for all of their work during the Earth Day preparatory period.

		<ul style="list-style-type: none"> • help the St. Francis community understand what they can do individually, on a daily basis, to help the environment. <p>Students will be required to work independently on their project, using class time wisely when given, respecting deadlines and continuing their grade 6 science program.</p>	
<i>April</i>	<p>LIFE SCIENCE Characteristics of Living Things The Kingdoms, Linnaeus Viruses and Bacteria Protists and Fungi</p>	<p>Students should be able to</p> <ul style="list-style-type: none"> • describe what characteristics define a living organism; • define what living organisms need to survive; • describe the Kingdoms and major phyla in the “tree of life”; • explain who Carl Linnaeus was and how his binomial system of classification is used today; • explain who Charles Darwin was and how his Theory on Evolution was developed; • define and understand taxonomy; • state how living and non-living things differ; • compare between unicellular and multi-cellular organisms; • state how Protists are alike; • differentiate between animal-like and plant-like Protists; • list ways diatoms are used industrially; • describe traits of Fungi; • list ways fungi are helpful and harmful; • describe traits of Archaeobacteria and Eubacteria and how they are helpful and harmful. 	<p>CHAPTER TESTS + QUIZZES Laboratory: microscope observations and drawings. Laboratory: microscope observations of cells PROJECT. The tree of life Laboratory: yeast growth</p>
<i>May</i>	<p>LIFE SCIENCE Plant structure and reproduction Invertebrates (Sponges, Cnidarians, Worms, Mollusks, Arthropods, Echinoderms) Animal behavior</p>	<p>Students should be able to</p> <ul style="list-style-type: none"> • describe plant structure and reproduction; • explain growth patterns of plants; • distinguish between grass-like plants, shrubs, trees and vines; • list factors plants need for growth in their environment; • identify parts that produce stems, leaves and flowers; • identify the tissues xylem and phloem; • name stimuli plants respond to; 	<p>Laboratory: dissection of a flower PROJECT: herbarium – learning how to identify and classify plant species PROJECT: adopt an arthropod ACTIVITIES</p>

		<ul style="list-style-type: none"> • define adaptation; • distinguish between vertebrates and invertebrates; • describe major traits of Sponges, Worms, Mollusks, Arthropods and Echinoderms. 	CHAPTER TESTS + QUIZZES
<i>June</i>	Animals (vertebrates) Birds and Mammals	Students should be able to define the groups of vertebrates and describe major traits of mammals and birds.	Laboratory: the sights and sounds of nature Documentary: Migratory Birds

QUIZZES: Depending on length of chapter and student responsiveness, quizzes may be done in the middle of a chapter to assess if students are assimilating concepts correctly.

STUDENT ASSESSMENT: Homework, class notebooks, tests/quizzes, activities, projects

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