

Science & Health Curriculum  
Van Buren Community Schools

K-6

Developed Summer of 2004 by  
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## Title Page – Science and Health Curriculum

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## **ACKNOWLEDGEMENT**

In June of 2004, a committee of teachers and administrators was formed to develop a Science and Health Curriculum with a K-12 continuum. The committee members combined their unique competencies and interests in a joint effort to develop this curriculum, which is the result of the interactions and idea exchanges among the committee members, from teachers and administrators within the school system.

This curriculum should assist teachers in determining the expected concept and performance level at the various grades. It is not designed to restrict or limit the creativity or imagination of the teachers. The guide serves as a springboard for the development of additional concepts and masters of skills, depending on the ability and interests of each student.

This project was successfully completed because of the dedication and consistent efforts of the committee members who participated in this project.

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**Talented and Gifted**

Penny Jones

We are grateful to these committee members, and support and compliment their fine efforts.

**FREEDOM TO TEACH, TO LEARN, AND TO EXPRESS IDEAS IN THE PUBLIC SCHOOLS**

The freedom to teach, to learn, and to express ideas without fear of censorship are fundamental rights held by public school teachers and students as well as all other citizens. These freedoms, expressed and guaranteed in the First Amendment to the U.S. Constitution, must be preserved in the teaching/learning process in a society of diverse beliefs and viewpoints and shared freedoms. Public schools must promote an atmosphere of free inquiry and a view of subject matter reflecting a broad range of ideas so that students are prepared for responsible citizenship. However, criticism of educational resources and teaching methods and the advocacy of additional educational resources are also essential First Amendment rights of students, faculty, parents, and other members of the community.

Public school personnel should:

1. Select curriculum, teaching methods, resources, and materials appropriate to the education objectives and the maturity and skill levels of the students based on their professional competence as educators and according to established school board policies and procedures. However, teachers should not be allowed to indoctrinate students with their own personal views.
2. Provide students with access to a broad range of ideas and viewpoints.
3. Encourage students to become decision makers, to exercise freedom of thought, and to make independent judgments through the examination and evaluation of relevant information, evidence, facts, and differing viewpoints.
4. Support students' rights to present their ideas even if some people might find the ideas objectionable.
5. Discuss issues, including those viewed by some as controversial, since such discussion is essential to students' development of critical thinking and other skills which prepare them for full participation as citizens in a democratic society.

Individuals or groups outside the public schools should not be allowed to:

1. Use the public schools to indoctrinate students with particular viewpoints or beliefs.
2. Determine which viewpoints will be presented or avoided in public schools.
3. Require the disciplining of professional staff for including issues or resources considered controversial in their classes if the reasons for including them are educationally sound.

Date of Adoption: August 13, 1986

Date of Review: March 14, 2001

Date of Revision: \_\_\_\_\_

## **FORWARD**

The purpose of this guide is to assist teachers in the organization and instruction of Science classes in the Van Buren Community School District.

This guide provides direction for teachers of grades kindergarten through sixth, and is adaptable for individual and class needs. It is, however, important that teachers follow the suggested Standards and Benchmarks of lesson content to ensure systematic and comprehensive instruction concepts and skills.

Committee members established basic agreement on the philosophy and goals of Science in our school system.

This guide, prepared by classroom teachers, for use by classroom teachers, provides Standards and Benchmarks for instruction which reflects a sense of wonder and appreciation for the gifts within and around us.

## **DIVISION V** **EDUCATION PROGRAM**

**281-12.5(256) Education program.** The following education program standards shall be met by schools and school districts for accreditation with the start of the 1989-1990 school year.

**12.5(2) Kindergarten program, grades 1-6.** The kindergarten program shall include experiences designed to develop healthy emotional and social habits and growth in the language arts and communication skills, as well as a capacity for the completion of individual tasks, and protect and increase physical well-being with attention given to experiences relating to the development of life skills and human growth and development. A kindergarten teacher shall be license/certified to teach in kindergarten. An accredited nonpublic school must meet the requirements of this subsection only if the nonpublic school offers a kindergarten program.

**12.5(3) Elementary program, grades 1-6.** The following areas shall be taught in grades one through six: English-language arts, social studies, mathematics, science, health, human growth and development, physical education, traffic safety, music, and visual art.

In implementing the elementary program standards, the elementary program standards, the following general curriculum definitions shall be used.

*d. Science.* Science instruction shall include life, earth, and physical science and shall incorporate hands-on process skills; scientific knowledge; application of the skills and knowledge to students and society; conservation of natural resources; and environmental awareness.

## **EDUCATIONAL PHILOSOPHY**

The Board of Directors of the Van Buren Community School District is committed to the operation of schools whose purpose is to serve by assisting each learner to develop into a mature individual and contributing member of society. The goals of education and the goals of democracy are fundamentally the same. The board believes the nature of learning is a continuous experience throughout the life of each individual. This experience is influenced by a variety of factors including the environment surrounding the learner. The Board also believes, and recognizes, the stages of development associated with growth. It is believed all have the capability of learning given appropriate opportunity.

The Board of Directors recognizes the guardianship of public education is a trust and an obligation. Consequently, the Board believes that a desirable learning atmosphere must be provided which includes the following: (1) Appropriate facilities; (2) Competent staff; (3) Appropriate educational and instructional materials; (4) Assurance of safety; (5) Recognition of individual dignity and worth; (6) A scope of educational experiences to challenge each student; and (7) Periodic review, revision, and evaluation.

The Board further believes the scope of educational experience should meet the needs of varied learners and include experience should meet the needs of varied learners and include experiences that encompass the intellect and associated basic and developmental skills, as well as aesthetic, physical, civic, social, vocational, multicultural, and technological awareness.

## EDUCATIONAL EQUITY POLICY

1. It is the policy of Van Buren Community School District to provide equal educational and employment opportunities and not to illegally discriminate on the basis of gender, race, national race, creed, age, marital status or disability in its educational programs, activities or its employment and personnel policies.
2. This district shall provide program activities, a curriculum and instructional resources which will reflect the racial and cultural diversity present in the United States and the variety of careers, roles and life styles open to both men and women in our society. One of the objectives of the district's programs, curriculum, services and teaching strategies is to reduce stereotyping and to eliminate bias on the basis of gender, race, ethnicity, religion, age, marital status and disability. The curriculum, programs and services shall foster respect and appreciation for the cultural diversity found in our country and an awareness of the rights, duties and responsibilities of each individual as a member of a pluralistic society.
3. It is the policy of this district to affirmatively recruit women and men, members of diverse racial/ethnic groups and persons with disabilities for job categories where they are underrepresented. A fair and supportive environment will be provided for all students and employees regardless of their gender, race, national origin, creed, age, marital status or disability. Harassment of sexual nature or with demeaning intent related to race, national origin, gender, disability, age or religion, made from one employee to another, from an employee to a student or vice versa, and from one student to another is a violation of this policy.
4. Inquiries regarding compliance of equity policies may be directed to the following:  
Title IX – High School Principal; Title VI and Section 504 – Associate Superintendent, Van Buren Jr/Sr. High School, 503 Henry Street, Keosauqua, Iowa 52565, 319-293-3334, to the Director of the Iowa Civil Rights Commission, Des Moines, Iowa, or to the Director of the Region VII Office of Civil Rights, Department of Education, Kansas City, Missouri.
5. The Affirmative Action Coordinator for the district shall be the Superintendent. The Educational Equity Coordinator for the district will be the Associate Superintendent. Inquiries concerning a grievance procedure should be addressed to either coordinator.

*Federal and state regulations require that the non-discrimination policy, the identity of the designated local coordinator and notification about the existence of the grievance procedure be disseminated to employees, students and parents on an annual or ongoing basis. This notification must be included in major annual or general publications such as:*

*Student Handbooks*

*Local Newspapers*

*Registration Handbook*

*Agreement forms with labor organizations and businesses which hold professional agreements with the school or agency.*

*School Newsletters*

*Employee (Staff) Handbooks*

*Program Brochures & Publications*

*Teacher Handbooks*

*Employment Application Forms*

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May 9, 1990

Date of Review:

August 14, 2002

Date of Revision:

September 16, 2002

## **A PHILOSOPHY OF SCIENCE**

Science education is the link between science and society. Its ultimate goal is to DEVELOP SCIENTIFICALLY LITERATE CITIZENS who understand the impact, and uses the knowledge and processes of science to solve problems and improve life within the limits of the total environment. Science education is any set of activities that develop scientific literacy.

A new generation of scientifically literate citizens is needed to cope with our scientific and technological society and to deal with a complex set of technical and ethical questions. It is recommended that all students receive an appropriate education in science to develop the intellectual skills that are basic to critical observation, problem resolution, decision-making, and valuing.

The study of science offers a KNOWLEDGE OF NATURAL PHENOMENA that uniquely rests upon the notion that humans can test and understand the orderly nature of the universe. Fundamental to SCIENCE AS A PART OF THEIR BASIC LEARNING, these processes are best developed through a well-articulated science program that includes experimentation and manipulation of materials.

Science activities built upon each individual's natural curiosity allows for self-motivation. This involvement can result in personal gain for students who discover and develop a confidence in their own ability to make the decisions that can form a basis for COMPREHENDING THE IMPACT of science and technology on the individual, cultural and society.

In addition to the development of logical thought and personal growth, research indicates that involvement with activities in science facilities growth in the other curricular areas. The Science curriculum should further reading readiness, the motivation to learn, and the ability to acquire oral and written communication skills.

## **RATIONALE**

Science education is essential in the total education process. We live in a scientific and technological society; therefore science must occupy a place of prominence in the total curriculum.

Science education is the study of processes of investigation, the knowledge such investigations provide, and the impact and use of such knowledge upon the individual society. The science curriculum reflects a balance of these three components.

## **EDUCATIONAL OBJECTIVES**

### **I. OUR FRAME OF REFERENCE**

We believe that the school as a public institution should provide insofar as possible:

1. A well-qualified and efficient corps of teachers.
2. A physical plant and equipment adequate to meet the needs of every learner.
3. Experiences for effective learning.
4. An educational leadership which leads to continuous improvement of the school.

We believe there is a common set of skills, knowledge, and attitudes essential to the total development of all Van Buren students. These learning's have intrinsic value, independent of a student's background, for the fulfillment of future aspirations. We further believe that these skills, knowledge and attitudes constitute a set of expectations that all students can achieve regardless of diverse learning rates and styles. Such achievement will help students create and attain meaningful goals and engage in life long learning.

The skills and competencies, later listed, establish a vision of what a Van Buren High School graduate should know and be able to do within the identified areas. Recognizing that students begin their schooling at different levels of readiness, and some have developmental handicaps, the listed skills and competencies are not meant to define minimum competencies but set a standard for an educated citizen that is essential to becoming a productive and contributing member of society.

### **II. SKILLS AND COMPETENCIES** Reading

As a result of education in grades K-12, each student should be able to:

- \* identify and comprehend the main and subordinate ideas, details and facts in written work and summarize the ideas in his/her own words;
- \* identify, comprehend and infer comparisons, contrasts, sequences and conclusions in written work;
- \* recognize different purposes and methods of writing, identify a writer's point of view and tone, and interpret a writer's meaning inferentially as well as literally;
- \* set purposes, ask questions and make predictions prior to and during reading and draw conclusions from reading;
- \* make critical judgments about written work including separating fact from opinion, recognizing propaganda, stereotypes and statements of bias, recognizing inconsistency and judging the validity of evidence and sufficiency of support;
- \* vary his/her reading speed and method based on the type of material and the purpose for reading;
- \* use the feature of books and other reference materials, such as table of contents, preface, introduction, titles and subtitles, index, glossary, appendix and bibliography.

### **Writing**

As a result of education in grades K-12, each student should be able to

- \* write standard English sentences with correct sentence structure, verb forms,

- \* punctuation, capitalization, possessives, plural forms, word choice and spelling;
- \* select, organize and relate ideas and develop them in coherent paragraphs;
- \* organize sentences and paragraphs into a variety of forms and produce writing of an appropriate length using a variety of composition types;
- \* use varying language, information, style and format appropriate to the purpose and the selected audience;
- \* conceive ideas and select and use detailed examples, illustrations, evidence and logic to develop the topic;
- \* gather information from primary and secondary sources; write a report using that information; quote, paraphrase and summarize accurately, and cite sources properly;
- \* improve his or her own writing by restructuring, correcting errors and rewriting.

### **Speaking and Listening**

As a result of education in grades K- 12, each student should be able to

- \* engage critically and constructively in an oral exchange of ideas;
- \* ask and answer questions correctly and concisely;
- \* understand spoken instructions and give spoken instructions to others;
- \* distinguish relevant from irrelevant information and the intent from the details of an oral message;
- \* identify and comprehend the main and subordinate ideas in speeches, discussions, audio and video presentations, and report accurately what has been presented;
- \* comprehend verbal and nonverbal presentations at the literal, inferential and evaluative levels;
- \* deliver oral presentations using a coherent sequence of thought, clarity of presentation, suitable vocabulary and length, and nonverbal communication appropriate for the purpose and audience.

### **Mathematics**

As a result of education in gradesK-12, each student should be able to

- \* add, subtract, multiply and divide using whole numbers, decimals, fractions and integers;
- \* make and use measurements in both traditional and metric units to measure lengths, areas, volumes, weights, temperatures and times;
- \* use ratios, proportions and percents, powers and roots;
- \* understand spatial relationships and the basic concepts of geometry;
- \* make estimates and approximations, and judge the reasonableness of results;
- \* understand the basic concepts of probability and statistics;
- \* organize data into tables, charts and graphs, and read and interpret data presented in these forms;
- \* formulate and solve problems in mathematical terms.

### **Reasoning**

As a result of education in grades K-12, each student should be able to:

- \* recognize and use inductive and deductive reasoning, recognize fallacies and examine arguments from various points of view;
- \* draw reasonable conclusions from information found in various sources, and defend his/her conclusions rationally;
- \* formulate and test predictions and hypotheses based on appropriate data;

- \* comprehend, develop and use concepts and generalizations;
- \* identify cause and effect relationships;
- \* identify and formulate problems;
- \* gather, analyze, synthesize and evaluate information pertinent to the problem;
- \* develop alternative solutions to problems, weight relative risks and benefits, make logical decisions and verify results;
- \* use critical and creative thinking skills to respond to unanticipated situations and recurring problems.

### **Studying**

As a result of education in grades K-12, each student should be able to

- \* set learning goals and priorities consistent with stated objectives and progress made, and allocate the time necessary to achieve them.
- \* determine what is needed to accomplish a task and establish habits conducive to learning independently or with others;
- \* follow a schedule that accounts for both short- and long-term project accomplishment;
- \* locate and use a variety of sources of information including print and nonprint materials, computers and other technologies, interview and direct observations;
- \* reader listens to specific information and takes effective and efficient notes.

### **Technological Literacy**

As a result of education in grades K-12, each student should be able to:

- \* identify and design techniques for recognizing and solving problems in science, including the development of hypotheses and the design of experiments to test them - the gathering of data, presenting them in appropriate formats, and drawing inferences based upon the results;
- \* use observation and analysis of similarities and differences in the study of natural phenomena;
- \* demonstrate the ability to work with laboratory measuring, manipulating and sensing devices;
- \* understand the implications of existing and emerging technologies on our society and our quality of life; including personal, academic and work environments;
- \* recognize the potential and the limitations of science and technology in solving societal problems.

## **III. ATTRIBUTES AND ATTITUDES**

A positive self-image and self-esteem are crucial to learning. These attributes determine goals, behaviors and responses to others. Furthermore, people depend on and influence one another. Therefore, it is important that students take responsibility for their lives and set appropriate goals for themselves. In doing so, they develop lifelong attitudes.

The family and societal forces other than schools play major roles in fostering student growth, and schools can provide a supportive climate for that growth. While it is inappropriate for schools to accept the sole or even primary responsibility for developing these attributes and attitudes, it is also inappropriate to deny the critical importance of these factors as preconditions to learning, as consequences of the teaching of all disciplines, and as desired outcomes for all students.

## **Positive Self-Concept**

As a result of education in grades K-12, each student should be able to:

- \* appreciate his/her worth as a unique and capable individual and exhibit self esteem;
- \* develop a sense of personal effectiveness and a belief in his/her ability to shape his/her future;
- \* develop and understanding of his/her strengths and weaknesses and the ability to maximize strengths and rectify or compensate for weaknesses.

## **Motivation and Persistence**

As a result of education in grades K-12, each student should be able to:

- \* experience the pride of accomplishment that results from hard work and persistence;
- \* act through a desire to succeed rather than a fear of failure, while recognizing that failure is part of everyone's experience
- \* strive toward and take the risks necessary for accomplishing tasks and fulfilling personal ambitions.

## **Responsibility and Self-Reliance**

As a result of education in grades K-12, each student should be able to:

- \* assume the primary responsibility for identifying his/her needs and setting reasonable goals;
- \* initiate actions and assume responsibility for the consequences of those actions;
- \* demonstrate dependability;
- \* demonstrate self-control.

## **Intellectual Curiosity**

As a result of education in grades K-12, each student should be able to:

- \* demonstrate a questioning attitude, open-mindedness and curiosity;
- \* demonstrate independence of thought necessary for leadership and creativity;
- \* pursue lifelong learning.

## **Interpersonal Relations**

As a result of education in grades K-12, each student should be able to:

- \* develop productive and satisfying relationships with others based upon mutual respect;
- \* develop a sensitivity to and an understanding of the needs, opinions, concerns and customs of others;
- \* participate actively in reaching group decisions;
- \* appreciate the roles and responsibilities of parents, children and families.

## **Sense of Community**

As a result of education in grades K-12, each student should be able to:

- \* develop a sense of belonging to a group larger than friends, family and coworkers;

- \* develop an understanding of the importance of each individual to the improvement of the quality of life for all in the community;
- \* examine and assess the values, standards and traditions of the community;
- \* understand and appreciate his/her own historical and ethnic heritage as well as that of others represented within the larger community.

#### Moral and Ethical Values

As a result of education in grades K-1 2, each student should be able to:

- \* recognize the necessity for moral and ethical conduct in a society;
- \* recognize that values affect choices and conflicts;
- \* develop personal criteria for making informed moral judgments and ethical decisions.

Date of Adoption: March 13, 1991

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## **Science Standards and Benchmarks**

### **Standard 1:**

**SCIENTIFIC INQUIRY-** The student knows that scientific knowledge is gained through experiments, research and use of technology

#### **Benchmarks**

- A. **Processes and Skills** – {Nature of scientific knowledge- experiments (equipment, tools, methods, inquiry, makes inferences based on data, infer unstated relationships, define problem)}
- B. **Analysis and Interpretation-** Scientific enterprise, technology, distinguish among hypotheses, judge relevance, reliability of sources, science answers questions.

### **Standard 2:**

**LIFE SCIENCES-** The students know about the diversity and unity that characterizes life both inside and outside an organism

#### **Benchmarks:**

- A. **Structure of living things** (Knows major categories of living organisms, variety of internal and external structures, inherited characteristics, evolution, how species depend on one another and the environment)
- B. **Life Cycles** (Organisms are growing, dying, new ones produced)
- C. **Health and Safety** (nutrition, personal safety, growth and development)

### **Standard 3:**

**EARTH AND SPACE SCIENCES** – The students understand basic earth features and processes and the earth's position in the galaxy

#### **Benchmarks:**

- A. Earth's composition (Knows characteristics of water, soil & air as liquid, gas)
- B. Changes in Earth (Knows wind, water, ice, waves, soil change constantly)
- C. The Universe (Properties of sun, moon and stars)

### **Standard 4:**

**PHYSICAL UNIVERSE** – The students understand the physical and chemical properties that govern the universe.

#### **Benchmarks**

- A. **Mechanics force and motion** (Understands energy types, sources, conversions, motion, sound, electricity, gravity and magnets).
- B. **Characteristics of matter** (Knows the structure, function & properties of matter that can be measured and has different states).

## **K-6 CURRICULUM OVERVIEW AND EVALUATION**

The K-6 science curriculum is comprised of four major areas of science study. There are: Life Science, Earth Science, Physical Science, and Health, Safety, and the Human Body. Within each of these areas are 1 – 3 units of study per grade level.

Materials selected are: Grade K-2 – FOSS (Full Option Science System), 1995.  
Grade 3-6 – Silver Burdette Ginn Science Discovery Work, 1996

The materials chosen are based on research that says “If students are to learn science and become scientifically literate, both science content and science experiments must be chosen to match the cognitive capacities of students at different stages of their development.” (FOSS & Discovery Works text) Each unit allows students to investigate experiment, gather data, organize results, and draw conclusions based on their own actions. The information gathered in these hands-on investigations enhances the development of scientific thinking.

Additional resources that may be utilized are “Go Girl Go”, guest speakers, “Heart Healthy”, Farm Safety Day Camp, Fire Prevention Week, various substance abuse resistance programs, AEA safety resources, AAA’s Traffic Safety program, and additional school assemblies and field trips. These resources involve the contributions of community organizations and therefore the learning’s are not teacher evaluated.

All materials are multicultural and nonsexist and meet the career and science/health/safety education standards in accordance with the code of Iowa to the best of our knowledge.

Evaluations of student’s learning’s will accommodate all learning styles and will include performance assessments and checklists, written reviews and test, and portfolios and notebooks.

## Scope and Sequence K-6

	<b>K</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>SCIENTIFIC INQUIRY</b>	X	X	X	X	X	X	X
<b>LIFE SCIENCES</b>							
Animals	X	X		X	X		
Plants	X		X	X		X	
Ecosystems	X			X		X	
Cells and Microbes							X
Health and Safety (Traffic)	X	X	X	X	X	X	X
<b>EARTH AND SPACE</b>							
Land Resources		X	X	X	X	X	X
Solar System and Beyond			X	X		X	
Changing Earth		X		X	X	X	X
Weather			X		X		
Oceanography							X
<b>PHYSICAL UNIVERSE</b>							
Nature of Matter	X	X	X	X	X		X
Electricity and Magnetism						X	
Energy				X		X	
Light and Sound				X		X	
Forces in Motion		X			X	X	

## **Course Outline – Kindergarten**

### **Life Science**

#### **Unit – Trees**

##### **A. Fall Trees**

1. Looking at Schoolyard Trees
2. Tree Puzzles
3. Tree-Silhouette Cards
4. Tree-Part Cards
5. Tree-Part Booklets
6. Adopt Schoolyard Trees

##### **B. Leaves**

1. Leaf Walk
2. Leaf Silhouettes and Outlines

##### **C. Trees through the Seasons**

1. Fall-What Comes from a Tree
2. Visiting Adopted Trees in Fall
3. Winter-Evergreen Hunt (adapted)
4. Winter Twigs
5. Visiting Adopted Trees in Winter
6. Spring-Forcing Twigs
7. Visiting Adopted Trees in Spring

### **Physical Science**

#### **Unit – Paper**

##### **A. Getting to Know Paper**

1. Matching Paper Samples
2. Paper Collage
3. Writing and Drawing on Paper

##### **B. Paper Constructions**

1. Folding Paper
2. Paper Envelopes
3. Paper Boxes

##### **C. Paper Interactions**

1. Paper and Water
2. Paper Maché
3. Paper Recycling

### **Physical Science**

#### **Unit – Wood**

##### **A. Properties of Wood**

1. Introduction to Wood Samples
2. Wood Hunt
3. Wood and Water
4. Sink the Pine and Plywood

- 5. Sinking Investigation
- B. Woodworking
  - 1. Sanding Wood
  - 2. Sawdust and Shavings
  - 3. Making Sawdust Wood
  - 4. Making Sandwich Wood
  - 5. Staining
  - 6. Wood Sculptures

### **Life Science**

#### **Unit – Animals Two-By-Two**

- A. Goldfish and Guppies
  - 1. The Structure of Goldfish
  - 2. Goldfish Behavior
  - 3. Fish Tunnels
  - 4. Comparing Guppies to Goldfish
- B. Big and Little Worms
  - 1. The Structure of Earthworms
  - 2. Earthworm Behavior
  - 3. Comparing Redworms to Night Crawlers
- C. Pillbugs and Sowbugs
  - 1. Isopod Observations
  - 2. Identifying Isopods
  - 3. Animals Living Together

### **Health**

#### **Unit – Human Body**

- A. Body Parts You Can See
- B. Body Parts You Cannot See
- C. Keeping Clean
- D. Exercise and Rest
- E. Healthful Foods
- F. Bus Safety (Traffic)

## Subject Area: SCIENCE - Kindergarten

### **Standard 1:**

**SCIENTIFIC INQUIRY** - The student knows that scientific knowledge is gained through experiments, research and use of technology

#### **Benchmarks:**

- A. **Processes and Skills** – {Nature of scientific knowledge- experiments (equipment, tools, methods, inquiry, makes inferences based on data, infer unstated relationships, define problem)}
- B. **Analysis and Interpretation**- Scientific enterprise, technology, distinguish among hypotheses, judge relevance, reliability of sources, science answers questions.

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	Tree Unit Paper Unit Wood Unit Animals Two by Two	Knowing that learning can come from careful observation.  Understands that learning can come from sharing findings from others.	Teacher Observation	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS
	Paper Unit Wood Unit Animals Two by Two	Understands that experiments/investigations help answer questions.	Teacher Observation	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS
B				

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## **Subject Area: SCIENCE - Kindergarten**

### **Length of Unit: On-going**

#### **Standard 2:**

**LIFE SCIENCES** - The students know about the diversity and unity that characterizes life both inside and outside an organism

#### **Benchmarks:**

- A. **Structure of living things** (Knows major categories of living organisms, variety of internal and external structures, inherited characteristics, evolution, how species depend on one another and the environment)
- B. **Life Cycles** (Organisms are growing, dying, new ones produced)
- C. **Health and Safety** (nutrition, personal safety, growth and development)

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	Tree Unit Animals Two by Two	Knows that plants and animals have external features that help them thrive in different environments.  Knows that there is variation amongst individuals.  Knows that animals closely resemble their parents.  Knows that plants and animals have life cycles.	Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUD, T & G, LS, CS, GS
B	Tree Unit Animals Two by Two		Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUD, T & G, LS, CS, GS
C	Supplemental Materials	Classifies food according to food groups.  Knows basic personal hygiene habits required to maintain health.  Understands importance of exercise and sleep on person's health.  Knows names of basic body parts.  Knows basic fire and bus safety practices.	Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUD, T & G, LS, CS, GS

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUD), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area:** SCIENCE - Kindergarten**Length of Unit:** NA**Standard 3:** EARTH AND SPACE SCIENCES - The students understand basic earth features and processes and the earth's position in the galaxy**Benchmarks:**

- A. Earth's composition (Knows characteristics of water, soil & air as liquid, gas)
- B. Changes in Earth (Knows wind, water, ice, waves, soil change constantly)
- C. The Universe (Properties of sun, moon and stars)

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## **Subject Area: SCIENCE – Kindergarten**

**Length of Unit:** 8 weeks total

### **Standard 4:**

**PHYSICAL UNIVERSE** – The students understand the physical and chemical properties that govern the universe.

#### **Benchmarks:**

- A. Mechanics, force and motion (Understands energy types, sources, conversions, motion, sound, electricity, gravity and magnets).
- B. Characteristics of matter (Knows the structure, function & properties of matter that can be measured and has different states).

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	Wood Unit	Knows that wood can be classified according to its physical properties (color, size and shape).  Knows that properties of wood can be changed.	Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS
B	Paper Unit	Knows that paper can be classified according to its physical properties (color, size and shape).  Knows that properties of paper can be changed.	Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Unit: Trees**

**Teacher: Kindergarten**

**Time: 4 weeks, then seasonal throughout the school year**

<b>STANDARDS/ BENCHMARKS</b>	<b>ACTIVITIES</b>	<b>MATERIALS</b>	<b>EVALUATION</b>
1A	Looking at Schoolyard Trees	Pencil, crayons, paper Parent letter 2-tree rounds tree posters Labels for tree poster Master Velcro dots Library pockets Old catalogs or phone books Labels “Looking at Schoolyard Tree” instruction card	
2A	Tree Puzzles	Tree puzzles Puzzle frames Tree posters “Tree poster” Instruction card	
2A	Tree Silhouette	Tree Silhouette cards Tree Silhouette Instruction card	
2A	Tree Part Card	“Tree part Cards” Instruction card	
2A	Tree Part Booklets	Tree Part Booklet Handout Tree Part Label Handout Paper Scissors Glue Crayons Stapler Camera Film String Crayons White paper Scissors Permanent Markers Tree observation Recording sheet “Adopt Schoolyard Trees” Instruction card	Teacher checklist
1A; 2B	Adopt Schoolyard Trees	Zip bags Catalogs Labels “Leaf Walk” instruction card	Student tree folder
1A; 2A	Leaf walk		Teacher observation

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
1A; 2A	Leaf Silhouettes and outlines	4 sets Leaf Silhouettes and Outlines (laminated, transparencies and instruction card)	
2B	What Comes from a Tree? (Fall)	“Key to Leaf Names” ref. sheet Zip bags Chart paper Markers	
2B	Visiting Adopted Trees (Fall)	“What Comes from a Tree” instruction card Tree drawing folders Camera Film String Scissors Markers Pencil “Visiting Adopted Trees” Instruction card	Student tree folder
2A	Evergreen Hunt (Winter activity as adopted to fit our schoolyard)	Evergreen leaves Zip bags Camera whistle “Evergreen Hunt”	
2B	Winter Twigs (Winter activity)	Instruction card Book – “Our Very Own Tree” Tree round Magnifiers Twigs for the class Knife	
2B	Visiting adopted tree in winter	“Winter Twigs” instruction card Tree drawing folders Pencil Markers	Student tree folder
2B	Forced Twigs (Spring activity)	Scrapbook “Visiting Adopted Trees” Instruction card Twigs for students tape 2 liter soda bottles for vases gravel and rock scissors water “Forcing Twigs” instruction cards.	

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
2B	Visiting Adopted Tree in spring	Tree drawing folder String Scrapbook Camera, film Scissors Markers “Visiting Adopted Tree” instruction card	Student tree folder

Unit: Paper

Teacher: Kindergarten

Time: 4 weeks

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
1A	Getting to Know Paper:	T.M. p4	
1B	Matching Paper Samples		Teacher checklist
4B	Paper collage	T.M. p7	
1B	Drawing and writing on paper	T.M. p9	
4B	Paper Constructions:	T.M. p4	
	Folding Paper		
4B	Paper envelopes	T.M. p6	
4B	Paper boxes	T.M. p8	
4B	Paper sculptures	T.M. p13	Teacher checklist
4B	Paper interactions		
4B	Paper and Water	T.M. p4	
4B	Paper Mache	T.M. p6	
4B	Paper Recycling	T.M. p9	

Unit: Wood

Teacher: Kindergarten

Time: 4 weeks

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
1A	Properties of Wood		
4B	Introduction of Wood samples	T.M. p4	
4B	Wood Hunt	T.M. p6	
1B	Wood and Water	T.M. p8	
1B; 4B	Sink the Pine and Plywood	T.M. p10	
4B	Sinking Investigation	T.M. p12	
4B	Wood working: Sanding Wood	T.M. p4	
1B	Sawdust and Shavings	T.M. p6	
1B	Making Sawdust Wood	T.M. p8	
1B	Making Sandwich Wood	T.M. p10	
4B	Staining	T.M. p14	Student portfolio of projects
4B	Wood Sculptures	T.M. p16	

Unit: Animals: Two by Two

Teacher: Kindergarten

Time: Ongoing

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
1A 2A	Goldfish Guppies: The Structure of Goldfish	"Fish Outline" handout "Parent Letter" handout Clear basins with lids Fish food Fish net Water dechlorinator Labels Paper Pencil or markers Elodea 3 goldfish 8 guppies water "Structure of Goldfish" Instruction card	Teacher made checklist of selected concepts
1A 1B	Goldfish Behavior	Aquarium Fish food Elodea "Goldfish Behavior" Instruction card and handouts	
1B 1A	Fish Tunnels	Scissors Envelopes "Paper Aquarium" Handout Aquarium Fish Tunnel Tape "Fish Tunnels" Instruction card and handout	
2A 2B	Comparing Goldfish to Guppies	Goldfish Aquarium Guppy Aquarium Book about fish "Comparing Guppies to Goldfish" instruction card and handout.	

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
1A	Structure of earth worms	Construction paper Bag of assorted shells "Shells" instruction card Plastic cup clear basin with lid Plastic wrap, soil ½ liter container with lid 30 red worms Nightcrawlers Leaf litter Oatmeal Water Paper towel "Structure of Earthworms" Instruction card	
1A 1B	Earthworm Behavior	Plastic cup Earthworm terrarium ½ liter containers water paper towels 8 objects to use as barriers Earthworm Behavior instruction card	
2A	Comparing Red worms to Nightcrawlers	Plastic cup Earthworm terrarium Soil Water Barrier objects Container of nightcrawlers Instruction card	
1A	Isopod observations	Plastic cup ½ liter containers with lids Plastic wrap 25 pill bugs 25 sow bugs Potato or carrot pieces Set of objects Paper towels "Isopod Observations" Instruction card	
2A	Identifying Isopods	3 plastic cups "Isopod Sorting" handouts for students "Identifying Isopods" Instruction card 2 containers of Isopods Damp paper towels	

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
2A	Animals Living Together	Earthworm Terrarium Containers of Isopods Land snail terrarium Book: Animals Two by Two Plan litter Small garden plant or grass seed 2 flat stones Tree bark Lettuce Potato pieces “Animals Living Together” instruction card	
2B	Eggs and Chicks (optional)	See Teacher Manual – Activity 5	

Unit: Health and Safety

Teacher: Kindergarten

Time: 4 weeks

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
2C	About the Body: Body Parts You Can See	Student book p2-3 Act. Master 4	
2C	Body Part You Cannot See	Student book p4-5 Act. Master 5-6	
2C	Keeping Clean	Student book 6-7 Act. Master 8	
2C	Exercise and Rest	Student book 8-9 Act. Master 10 Stethoscope	
2C	Healthful Foods	“Food Pyramid” Puzzle “Collage Food” Act. “Classroom Cooking” Act. Supplemental Materials	Student Portfolio Teacher checklist
2C	Bus Safety		
2C	Fire Safety		

## **Course Outline – First Grade**

### **Earth Science**

#### **Unit – Pebbles, Sand, and Silt**

##### **A. First Rocks**

1. Three Rocks
2. Washing Three Rocks
3. First Sorting
4. Sorting Games
5. Start a Rock Collection

##### **B. River Rocks**

1. Screening River Rocks
2. River Rocks by Size
3. Sand and Silt
4. Exploring Clay
5. Observing the Clay and Water in Vials

##### **C. Using Rocks**

1. Looking At Sandpaper
2. Sand Sculptures
3. Clay Beads
4. Rocks in Use

##### **D. Soil Explorations**

1. Homemade Soil

### **Physical Science**

#### **Unit – Balance and Motion**

##### **A. Balance**

1. Trick Crayfish
2. Triangle and Arch
3. The Pencil Trick
4. Mobiles

##### **B. Spinners**

1. Tops
2. Zoomers
3. Twirlers

##### **C. Rollers**

1. Rolling Wheels
2. Rolling Cups

### **Life Science**

#### **Unit – Insects**

##### **A. Mealworms**

1. Mealworms
2. Larva, Pupa, Adult
3. Life Cycle

##### **B. Milkweed Bugs**

1. Eggs
2. Habitats

3. Growing Milkweed Bugs

C. Butterflies

1. Caterpillars
2. Chrysalises
3. Butterflies

**Physical Science**

**Unit-Fabric**

A. Getting to Know Fabric

1. Match Fabric Samples
2. Fabric and Water
3. Take Fabric Apart
4. Weave

B. Fabric Construction

1. Fabric Collage
2. Sew Fabric

C. Fabric Interactions

1. Stains Fabric
2. Clean Fabric
3. Dye Fabric

**Health and Safety**

**Unit – Health**

- A. Dental Health  
B. Heart Health

**Unit- Traffic Safety**

- A. Bus Safety  
B. Fire Safety  
C. Pedestrian Safety

**Subject Area: SCIENCE - Grade 1**

**Standard 1: SCIENTIFIC INQUIRY-** The student knows that scientific knowledge is gained through experiments, research and use of technology

**Benchmarks:**

- A. Processes and Skills – {Nature of scientific knowledge- experiments (equipment, tools, methods, inquiry, makes inferences based on data, infer unstated relationships, define problem)}
- B. Analysis and Interpretation - Scientific enterprise, technology, distinguishing among hypotheses, judge relevance, reliability of sources, science answers questions.

Benchmarks	Section From Text	Critical Objectives	Assessments	Infusions/Provisions
A	Pebbles, Sand, Silt Insects Fabric	Knowing that learning can come from careful observation. Understands that learning can come from sharing findings from others	Teacher Observation	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS
	Pebbles, Sand, Silt Balance & Motion Fabric	Understands that experiments/investigations help answer questions	Teacher Observation	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS
B				

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## Subject Area: Science – Grade 1

### Length of Unit: On-going

**Standard 2:** LIFE SCIENCES – the students know about the diversity and unity that characterizes life both inside and outside an organism

#### Benchmarks:

- A. Structure of living things (Knows major categories of living organisms, variety of internal and external structures, inherited characteristics, evolution, how species depend on one another and the environment)
- B. Life Cycles (Organisms are growing, dying, new ones produced)
- C. Health and Safety (nutrition, personal safety, growth and development)

Benchmarks	Section From Text	Critical Objectives	Assessments	Infusions/Provisions
A	Insect Unit	<p>Knows that insects have external features that help them thrive in different environments.</p> <p>Knows that there is variation amongst insects.</p> <p>Knows that insects require air, water, and food to live</p>	Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, T & G, LS, CS, GS
B	Insects Unit	Knows that insects have life cycles.	Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, T & G, LS, CS, GS
C	Supplemental Materials	<p>Knows how to care for teeth.</p> <p>Understands importance of exercise and good diet to keep heart healthy.</p> <p>Knows basic fire, bus and pedestrian safety practices.</p>	Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## Subject Area: Science – Grade 1

Length of Unit: 6 weeks

**Standard 3: Earth and Space Sciences** – The students understand basic earth features and processes and the earth's position in the galaxy

### Benchmarks:

- A. Earth's composition (Knows characteristics of water, soil and air as liquid, gas)
- B. Changes in Earth (Knows wind, water, ice, waves, soil change constantly)
- C. The Universe (Properties of sun, moon and stars)

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/Provisions
A	Pebbles, Sand, Silt	Knows that Earth consists of rocks and soil. Knows that rocks come in all sizes – from boulders to grains of sand to silt	Assessment checklist provided in Teacher's Manual	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: Science – Grade 1****Length of Unit: 4 weeks****Standard 4: PHYSICAL UNIVERSE – The students understand the physical and chemical properties that govern the universe.****Benchmarks:**

- A. Mechanics, force and motion (Understands energy types, sources, conversions, motion, sound, electricity, gravity and magnets).
- B. Characteristics of matter (Knows the structure, function and properties of matter that can be measured and has different states).

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/Provisions
A	Balance and Motion	Knows where to place counterweights in order to balance an object.  Knows how to keep round objects in motion	Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS
B	Fabric Unit	Classifies fabric.  Understands how fabrics are made.  Knows that properties of fabric can be changed (color, size and shape)	Teacher Checklist	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Unit: Sand, Pebbles and Silt**

Teacher: 1<sup>st</sup>

Time: 6 Weeks

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
1A	First Rocks: Three Rocks	T.M. p4	Teacher Observation Labels – See p4 of Assess. Section of Manual
(1A) (1B)	Washing Three Rocks	T.M. p6	
3A	First Sorting	T.M. p8	
3A	Sorting Games	T.M. p10	
3A	Start A Rock Collection	T.M. p12	
1B	River Rocks: Screening River Rocks	T.M. p4	Assessment Checklist (p6 of T.M. Assess. Section) “Separate a Rock Mixture” “Earth Materials in Avail” “Bottle Drawing”
3A	River Rocks By Size Sand And Silt	T.M. p7 T.M. p9	
(1B) (1A)	Exploring Clay	T.M. p12	
1B	Using Rocks: Looking at Sandpaper	T.M. p4	Checklist Assessment (p6 T.M. Assessment Section) “How People Use Earth”
1B	Sand Sculptures	T.M. p6	
1B	Clay Beads	T.M. p8	
1A	Rocks in Use	T.M. p10	Assessment Checklist “Describe Soil” (See Asses. Section of T.M. p6)
3A	Soil Explorations: Homemade Soil	T.M. p4	

Unit: Balance and Motion

Teacher: 1<sup>st</sup>

Time: 6 Weeks

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
1B 4A	Balance: Trick Crayfish	T.M. p4	Assessment Checklist (T.M. Assess. Section p6) “Balance Homemade Shapes”
4A	Triangle and Arch	T.M. p6	
4A	The Pencil Trick	T.M. p9	
4A	Mobiles	T.M. p12	
4A	Spinners: Tops	T.M. p4	Teacher Observation (T.M. Assess. Section p4)
4A	Zoomers	T.M. p8	
4A	Twirlers	T.M. p12	
4A	Rollers: Rolling Wheels	T.M. p4	Teacher Observation
4A	Rolling Cups	T.M. p8	

Unit: Insects

Teacher: 1<sup>st</sup>

Time: 4 Weeks and ongoing throughout their life cycles.

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
1A 2A	Mealworms Mealworms	T.M. p5  T.M. p9	Use Teacher Observation Labels (See T.M. Assess. Sections p4)
2A 1A 2B	Larva, Pupa, Adult Life Cycle of Mealworm	T.M. p12	
2A	Milkweed Bugs Milkweed Bugs Eggs	T.M. p4  T.M. p6	Assessment Checklist “Needs of Insects”
2A (2A) (2B) (1A) (2A)	Milkweed Bug Habitat Growing Milkweed Bugs Butterflies Pupae and Adults	T.M. p11  T.M. p16	
2B	Caterpillars	T.M. p5 T.M. p9	Assessment Checklist “Square Moth”
2B	Chrysalises	T.M. p12	
2B	Butterflies		

Unit: Health and Safety

Teacher: 1<sup>st</sup>

Time: 4 Weeks

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
2C	Health: Dental Health	Supplemental Materials	Student Portfolio
2C	Heart Health		
2C	Traffic Safety: Bus Safety	Supplemental Materials	Teacher Checklist
2C	Fire Safety		
2C	Pedestrian Safety		

Unit: Fabric

Teacher: 1<sup>st</sup>

Time: 4 Weeks

STANDARDS/ BENCHMARKS	ACTIVITIES	MATERIALS	EVALUATION
1A 4B 1B 4B	Match Fabric Samples	Samples from Kit	Student Portfolio of Projects
4B	Fabric Water	Blue fabric samples From kit Eye droppers Water Waxed Paper	
4B	Taking Fabric Apart	Burlap Samples from kit Wool Samples from kit	
4B	Weaving Fabric	Cardboard Looms 4 colors of yarn cut into lengths	
4B	Fabric Collage	Tag board Fabric scraps Glue	
4B	Sew Fabric	Fabric scraps Needles Thread Scissors	
4B	Stain Fabric	Muslin squares Mustard Ketchup Dirt Grass	
4B	Clean Fabric	Stained muslin Detergent Water	
4B	Dye Fabric	Food Coloring Clean Muslin square	

## **Course Outline – Second Grade**

### **Life Science**

#### **New Plants**

##### **A. Brassica Seeds**

1. Introduce Recording
2. Planting Brassica
3. Observing Brassica Growth

##### **B. Grass and Grain Seeds**

1. Lawns
2. Mowing the Lawn
3. Wheat

##### **C. Stems**

1. Rooting Stem Cuttings
2. New Plants from Cuttings
3. Spuds

##### **D. Bulbs and Roots**

1. Bulbs
2. Roots

##### **E. Health and Traffic Safety**

1. Home Safety
2. Bicycle Safety
3. Traveling Safely
4. Playing Safely

### **Physical Science**

#### **Solids and Liquids**

##### **A. Solids**

1. Introduce Solids
2. Sort Solid Objects
3. Construct with Solids

##### **B. Bits and Pieces**

1. Solids in Containers
2. Separating Soup Mix
3. Solid Materials in Bottles
4. Separating Beads with a Screen

##### **C. Liquids**

1. Liquids in Bottles
2. Properties of Liquids
3. Liquid Levels

**D. Solids and Liquids with Water**

1. Solids and Water
2. Liquids and Water
3. Toothpaste Investigation

**Earth Science**

**Air and Weather**

**A. Observing Weather**

1. Weather Journals
2. Weather Calendars
3. Record Temperature
4. Measure the Wind
5. Rain Gauges and Clouds
6. Weather Graphs

**B. Air Explorations**

1. Exploring the Air
2. Syringes and Tubes
3. Syringes, Air, and Water
4. Bubbles

**C. Using Air**

1. Parachutes
2. Propellers
3. Balloon Rockets
4. Gliders
5. Build Your Own Air User

**D. Wind Catchers**

1. Streamers
2. Pinwheels
3. Wind Socks
4. Wind Vanes and Kites
5. Whirligigs

**Subject Area: SCIENCE - 2<sup>nd</sup> Grade****Length of Unit: Ongoing****Standard 1:**

**SCIENTIFIC INQUIRY.** The student knows that scientific knowledge is gained through experiments, research and use of technology

**Benchmarks:**

- A. **Processes and Skills** – {Nature of scientific knowledge- experiments (equipment, tools, methods, inquiry, makes inferences based on data, infer unstated relationships, define problem)}
- B. **Analysis and Interpretation-** Scientific enterprise, technology, distinguish among hypotheses, judge relevance, reliability of sources, science answers questions.

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	New Plants, Solids and Liquids, Air and Weather	Knows that learning can come from careful observations and simple experiments.	Checklists, teacher observations.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG
		Knows that tools like thermometers, magnifiers, rulers, and balances add to information from our senses.		
B	New Plants, Solids and Liquids, Air and Weather	Understands that in science it is helpful to work with a team and share findings with others.	Checklists, teacher observations.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## Subject Area: SCIENCE - 2<sup>nd</sup> Grade

## Length of Unit: 10 Weeks

### **Standard 2:**

**LIFE SCIENCES** - The students know about the diversity and unity that characterizes life both inside and outside an organism

#### **Benchmarks:**

- A. **Structure of living things** (Knows major categories of living organisms, variety of internal and external structures, inherited characteristics, evolution, how species depend on one another and the environment)
- B. **Life Cycles** (Organisms are growing, dying, new ones produced)
- C. **Health and Safety** (nutrition, personal safety, growth and development)

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	New Plants	Knows that animals require air, water, and food; plants require air, water, and light.	Checklists, Teacher observations.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG
B	New Plants	Knows that plants and animals have life cycles.	Checklists, Teacher observations.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG
C	Health	Knows basic fire, traffic, bus, and bicycle safety practices.  Knows precautions that should be taken in special conditions.  Knows behaviors that are safe, risky, or harmful to self and others.	Checklists, Teacher observations.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE - 2<sup>nd</sup> Grade****Length of Unit: 10 Weeks****Standard 3:****EARTH AND SPACE SCIENCES** – The students understand basic earth features and processes and the earth's position in the galaxy**Benchmarks:**

- A. Earth's composition (Knows characteristics of water, soil & air as liquid, gas)
- B. Changes in Earth (Knows wind, water, ice, waves, soil change constantly)
- C. The Universe (Properties of sun, moon and stars)

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	Air and Weather	Knows that Earth materials consist of solid rocks and soils.  Knows that some objects occur in nature, whereas others have been designed and made by people to solve human problems.	Checklist, teacher observations.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG
B	Air and Weather	Understands energy types and sources, and their relationship to heat and temperature.	Checklist, teacher observations.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG
C	Air and Weather	Knows that the Sun applies heat and light to earth.		HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE - 2<sup>nd</sup> Grade****Length of Unit: 6 Weeks****Standard 4:**

**PHYSICAL UNIVERSE** – The students understand the physical and chemical properties that govern the universe.

**Benchmarks**

- A. Mechanics force and motion (Understands energy types, sources, conversions, motion, sound, electricity, gravity and magnets).
- B. Characteristics of matter (Knows the structure, function & properties of matter that can be measured and has different states).

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	Solids and Liquids	Knows that things can be done to materials to change some of their properties, but not all materials respond the same way to what is done to them.	Checklists, teacher observations.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG
B	Solids and Liquids	Knows that objects can be described and classified by their composition (wood, metal) and their physical properties (color, size, shape.)		HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, TAG

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

Teacher: 2<sup>nd</sup> Grade

Unit: New Plants

Time: 6 weeks (and ongoing with observation of growth of plants up to 10 weeks)

Standards/ Benchmarks	Activities	Materials	Evaluation – Possible Tools
1A	Brassica Seeds: Introduce Recording	TM p4 (Brassica Seeds)	Assessment Checklist #1, p6 TM Teacher Observation
2A	Planting Brassica	TM p6 (Brassica Seeds)	Assessment Checklist #1, p6 TM Teacher Observation
2B	Observing Brassica	TM p12	Assessment Checklist #1, p6 TM Teacher Observation
1A	Growth	(Brassica Seeds)	Assessment Checklist #1, p6 TM Teacher Observation
2A	Grass and Grains Lawns	TM p4 (Grass and Grains)	Assessment Checklist #2, p6 TM Teacher Observation
1A	Mowing the Lawn	TM p8 (Grass and Grains)	Assessment Checklist #2, p6 TM Teacher Observation
2B/1A	Wheat	TM p10 (Grass and Grains)	Assessment Checklist #2, p6 TM Teacher Observation
1A	Stems: Rooting Stem Cutting	TM p4	Teacher Observation Labels p4 TM Teacher Observation
2A/1A	New Plants From Cutting	TM p8	Teacher Observation Labels p4 TM Teacher Observation
2A/1A	Spuds	TM p10	Teacher Observation Labels p4 TM Teacher Observation
2B/1A	Bulbs and Roots	TM p4	Assessment Checklist #3, p6 TM Teacher Observation
2A/1A	Planting Roots	TM p7	Assessment Checklist #3, p6 TM Teacher Observation

Teacher: 2<sup>nd</sup> Grade Teacher

Unit: Solids and Liquids

Time: 6 weeks

Standards/ Benchmarks	Activities	Materials	Evaluation – Possible Tools
1A	Solids: Introduce Solids	TM p4	Teacher Observation , Labels p4 TM, Assessment Checklist #1, p 6 TM Teacher Observation
4B/ 1A	Sort Solid Objects	TM p8	Teacher Observation Labels p4 TM, Assessment Checklist #1, p 6 TM Teacher Observation
4B/1A/ 1B	Construct Solids	TM p8	Teacher Observation Labels p4 TM, Assessment Checklist #1, p 6 TM Teacher Observation

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation – Possible Tools</b>
4B/ 1A/ 1B	Bits and Pieces: Solids in Containers	TM p6	Teacher Made Checklist, Teacher Observation, Labels p4 TM, Assessment Checklist #2, p6 TM Teacher Observation
4B/ 1A/ 1B	Separating Soup Mix	TM p10	Teacher Made Checklist, Teacher Observation, Labels p4 TM, Assessment Checklist #2 p6 TM Teacher Observation
4B/ 1A	Solid Materials in Bottles	TM p14	Teacher Made Checklist, Teacher Observation, Labels p4 TM, Assessment Checklist #2 p6 TM Teacher Observation
4B/ 1A	Separating Beads with a Screen	TM p17	Teacher Made Checklist, Teacher Observation, Labels p4 TM, Assessment Checklist #2 p6 TM Teacher Observation
1A/ 1B	Liquids: Liquids in Bottles	TM p5	Teacher Made Checklist, Assessment Checklist #4, p6 TM Teacher Observation
4B/ 1B	Properties of Liquid	TM p8	Teacher Made Checklist, Assessment Checklist #4, p6 TM Teacher Observation
4B/ 1A/ 1B	Liquid Levels	TM p12	Teacher Made Checklist, Assessment Checklist #4, p6 TM Teacher Observation
4A/ 1A	Solids and Water	TM p4	Assessment Checklist #5, p6 TM Teacher Observation
4A/ 1A	Liquids and Water	TM p10	Assessment Checklist #5, p6 TM Teacher Observation
4B/ 4A 1A/ 1B	Toothpaste Investigation	TM p13	Assessment Checklist #5, p6 TM Teacher Observation

Teacher: 2<sup>nd</sup> Grade

Unit: Air and Water

Time: 10 weeks

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation – Possible Tools</b>
3C/ 3A 1A/ 1B	Observing Weather: Weather Journals	TM p4	Assessment Checklist #1, p6 TM Teacher Checklist (Journal Info) Teacher Observation
3A/ 1A	Weather Calendars	TM p6	Assessment Checklist #1, p6 TM Teacher Checklist (Journal Info) Teacher Observation
3A/ 1A	Record Temperature	TM p8	Teacher Checklist (Journal Info) Teacher Observation
3A/ 1A	Measure The Wind	TM p10	Teacher Checklist (Journal Info) Teacher Observation
3A	Rain Gauges and Clouds	TM p13	Teacher Checklist (Journal Info) Teacher Observation

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation – Possible Tools</b>
1A	Weather Graphs	TM p16	Teacher Checklist (Journal Info) Teacher Observation
1A/ 1B	Air Explorations: Exploring Air	TM p4	Assessment Checklist #2, p6 TM Teacher Observation
1A/ 1B	Syringes and Tubes	TM p6	Assessment Checklist #2, p6 TM Teacher Observation
1A	Syringes, Air, Water	TM p9	Assessment Checklist #2, p6 TM Teacher Observation
1A	Bubbles	TM p13	Assessment Checklist #2, p6 TM Teacher Observation
1A/ 1B 3A	Using Air: Parachutes	TM p4	Assessment Checklist #3, p6 TM Teacher Observation
1A/ 3A	Propellers (Opt. Learn. Ctr)	TM p7	Assessment Checklist #3, p6 TM Teacher Observation
1A/ 3A	Balloon Rockets (Opt. Learn Ctr)	TM p10	Assessment Checklist #3, p6 TM Teacher Observation
1A/ 3A	Gliders (Opt. Learn Ctr)	TM p13	Assessment Checklist #3, p6 TM Teacher Observation
1A/ 3A	Build Your Own Air User	TM p16	Assessment Checklist #3, p6 TM Teacher Observation
1A/ 1B	Wind Catchers: Steamers	TM p4	Assessment Checklist #4, p6 TM Teacher Observation
1A/ 3A	Pinwheels (Opt Learn Ctr)	TM p6	Assessment Checklist #4, p6 TM Teacher Observation
1A/ 3A	Wind Socks (Opt Learn Ctr)	TM p9	Assessment Checklist #4, p6 TM Teacher Observation
1A/ 1B/ 3A	Wind Vanes and Kites	TM p12	Assessment Checklist #4, p6 TM Teacher Observation
1A/ 3A	Whirligigs (Opt Learn Ctr)	TM p16	Assessment Checklist #4, p6 TM Teacher Observation

Teacher: 2<sup>nd</sup> Grade Science  
 Unit: Health and Traffic Safety  
 Time: 4 weeks

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation – Possible Tools</b>
2C	Keeping Safe: Home Safety	Supplemental Materials	Teacher Observation
2C	Bicycle Safety	Supplemental Materials	Teacher Observation
2C	Traveling Safely	Supplemental Materials	Teacher Observation
2C	Playing Safely	Supplemental Materials	Teacher Observation

## **Course Outline - Grade Three**

### **Life Science**

#### **UNIT A - Life Cycles**

1. Life Cycles of Animals
2. Life Cycles of Plants

#### **UNIT E - Roles of Living Things**

1. Relationships Among Living Things
2. How Living Things Are Adapted
3. Living Things in the Environment

#### **UNIT F - What's for Lunch?**

1. Foods We Eat
2. How the Body Uses Food

#### **UNIT G - Personal and Traffic Safety**

1. Street Safety
  - a. Walking
  - b. Bicycle
2. Bus Safety

### **Physical Science**

#### **UNIT C - Forms of Energy** 1. Energy

2. Heat and Temperature
3. Using and Saving Energy

### **Earth Science**

#### **UNIT B - Sun, Moon, and Earth**

1. Comparing Sun, Moon, and Earth
2. Motions of Earth and the Moon
3. Effects of Earth and Moon Motions

#### **UNIT D - Earth's Water**

1. Water, Water Everywhere
2. Wonders of Water
3. Caring for Our Water

## Subject Area: SCIENCE - 3rd Grade

### Length of Unit: Ongoing

#### **Standard 1:**

**SCIENTIFIC INQUIRY-** The student knows that scientific knowledge is gained through experiments, research and use of technology

#### **Benchmarks:**

- A. Processes and Skills – {Nature of scientific knowledge- experiments (equipment, tools, methods, inquiry, makes inferences based on data, infer unstated relationships, define problem)}**
- B. Analysis and Interpretation - Scientific enterprise, technology, distinguish among hypotheses, judge relevance, reliability of sources, science answers questions.**

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	Life Cycles, Roles of Living Things, Forms of Energy, Sun, Moon, and Earth, Earth's Water, What's for Lunch	<p>Knows that scientists use different kinds of investigations depending on the questions they are trying to answer.</p> <p>Plans and conducts a simple investigation.</p> <p>Knows that scientific investigations involve asking and answering a question and comparing that answer to what scientists already know about the world.</p> <p>Knows that scientists develop explanations using observations and what they already know about the world; good explanations are based on evidence from investigations.</p> <p>Knows that tools help scientists make better observations, measurements, and equipment for investigations.</p> <p>Knows that people continue inventing new ways of doing things, solving problems, and getting work done. These new ideas and inventions often affect other people; sometimes the effects are good, and sometimes they are bad.</p>	<p>Written Assessment/Assessment Guide, Science notebook, chapter tests, teacher observations.</p>	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
B	Life Cycles, Roles of Living Things, Forms of Energy, Sun, Moon, and Earth, Earth's Water, What's for Lunch	<p>Plans and conducts a simple investigation.</p> <p>Knows that people have always had questions about their world; science is one way of answering questions and explaining the natural world.</p> <p>Knows that the same scientific investigation often gives slightly different results when it is carried out by different persons, or at different times or places.</p>	<p>Written Assessment/Assessment Guide, Science notebook, chapter tests, teacher observations.</p>	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE - 3rd Grade****Length of Unit: 13 - 16 Weeks****Standard 2:**

LIFE SCIENCES - The students know about the diversity and unity that characterizes life both inside and outside an organism

**Benchmarks:**

- A. Structure of living things (Knows major categories of living organisms, variety of internal and external structures, inherited characteristics, evolution, how species depend on one another and the environment)
- B. Life Cycles (Organisms are growing, dying, new ones produced)
- C. Health and Safety (nutrition, personal and traffic safety, growth and development)

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	Roles of Living Things	<p>Knows that plants and animals have external features that help them thrive in different environments.</p> <p>Knows that an organism's patterns of behavior are related to the nature of that organism's environment.</p> <p>Knows that when an environment changes, some plants and animals survive and reproduce and others die or move to new locations.</p> <p>Knows that some source of energy is needed for organisms to live and grow.</p> <p>Knows that all organisms cause changes in the environment where they live.</p>	Written Assessments, Science notebook, Chapter tests.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
B	Life Cycles	<p>Knows that plants and animals have life cycles which include birth, growth and development, reproduction, and death; the details of this life cycle are different for different organisms.</p> <p>Knows that each plant or animal has different structures which serve different functions in growth.</p>	Written Assessments, Science notebook, Chapter tests.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G
C	What's For Lunch?	<p>Knows that over the whole earth, organisms are growing, dying, decaying, and new organisms are being produced by the old ones.</p> <p>Knows nutrition is essential to health.</p> <p>Knows recommendations for good nutrition include eating a variety of foods, eating less sugar, and eating less fat.</p>	Written Assessments, Science notebook, Chapter tests.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G
C	Personal & Traffic Safety (supplemental materials)	<p>Knows individuals have some responsibility for their own health. Students should engage in personal care – dental hygiene, cleanliness, and exercise – that will maintain and improve health.</p> <p>Knows the basic structure and functions of the human body system.</p> <p>Knows safe pedestrian habits.</p> <p>Knows safe bicycle habits.</p> <p>Knows safe bus riding habits.</p>	Written Assessments, Science notebook.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE – 3<sup>rd</sup> Grade****Length of Unit: 9 – 11 Weeks****Standard 3:****EARTH AND SPACE SCIENCES** – The students understand basic earth features and processes and the earth's position in the galaxy**Benchmarks:**

- A. Earth's composition (Knows characteristics of water, soil & air as liquid, gas)
- B. Changes in Earth (Knows wind, water, ice, waves, soil change constantly)
- C. The Universe (Properties of sun, moon and stars)

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	Earth's Water	Knows the major differences between fresh and ocean waters.  Knows that humans depend on their natural and constructed environments. Humans change environments in ways that can be either beneficial or detrimental.	Written Assessments, Science notebooks, Chapter tests.	HOTS, LS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G
B	Earth's Water	Knows that materials have different states (solid, liquid, and gas.)  Knows some common materials, such as water, can be changed from one state to another by heating or cooling.	Written Assessments, Science notebooks, Chapter tests.	HOTS, LS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
C	Sun, Moon, and Earth	<p>Knows that the rotation of the Earth on its axis every 24 hours produces the night and day cycle.</p> <p>Knows that because of the tilt of the Earth's axis, sunlight and its heat fall more intensely on one part or another of the Earth during its one-year revolution around the Sun; the difference in heating of the Earth's surface produces the planet's seasons and weather patterns.</p> <p>Knows that the Sun provides the light and heat necessary to maintain the temperature of the Earth.</p> <p>Knows that the Sun, moon, and stars all have properties, locations, and movements that can be observed and described.</p>	<p>Written Assessments, Science notebooks, Chapter tests.</p>	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE – 3<sup>rd</sup> Grade****Length of Unit: 4 – 5 Weeks****Standard 4:****PHYSICAL UNIVERSE** – The students understand the physical and chemical properties that govern the universe.**Benchmarks**

- A. Mechanics force and motion (Understands energy types, sources, conversions, motion, sound, electricity, gravity and magnets).
- B. Characteristics of matter (Knows the structure, function & properties of matter that can be measured and has different states).

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
A	Forms of Energy	<p>Knows that humans depend on their natural and constructed environments. Humans change environments in ways that can be either beneficial or detrimental.</p> <p>Knows that heat can be produced in many ways.</p> <p>Knows that heat can move from one object to another by conduction.</p> <p>Knows that the position and motion of objects can be changed by pushing or pulling.</p>	Written Assessments, Science notebooks, Chapter tests, Teacher observations.	HOTS, LS, CS, GS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G
B	Forms of Energy	<p>Knows that clouds, like fog or steam from a kettle, are made of tiny droplets of water.</p> <p>Knows that things have properties.</p> <p>Knows that materials have different states (solid, liquid, gas,) and some common materials such as water can be changed from one state to another by heating or cooling.</p> <p>Knows that sound is produced by vibrating objects.</p>	Written Assessments, Science notebooks, Chapter tests, Teacher observations.	HOTS, LS, CS, MCGF, TECH, MEDIA, GUID, SPECIAL, T&G

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

Teacher: 3<sup>rd</sup> Grade Science

Unit: Life Cycles

Time: 4-5 weeks

Standards/ Benchmarks	Activities	Materials	Evaluation - Possible Tools
2B/ 2A 1A/ 1B	What is a Life Cycle	1. Resource book p A8 –11	1. Science Journal 2. Teacher Observation
2A/ 2B 1A/ 1B	What is the First Stage in an Animals Life Cycle?	1. Resource book p A12 –19 2. Science Notebook p 8-9 3. Materials p A12	1. Written assessment Guide p22 2. Science notebook p8-9 3. Science Journal 4. Teacher Observation
2A/ 2B 1A/ 1B	How Do Adult Animals Care for Their Young?	1. Resource book p A28 –34 2. Science Notebook p 17-18 3. Materials p A28	1. Written assessment Guide p24 2. Science notebook p17-18 3. Science Journal 4. Teacher Observation
2A/ 2B 1A/ 1B	What is the First Stage in the Life Cycle of a Flowering Plant?	1. Resource book p A38-43 2. Science Notebook p 25-26 3. Materials p A38	1. Written assessment Guide p27 2. Science notebook p25-26 3. Science Journal 4. Teacher Observation
2A/ 2B 1A/ 1B	How Do Flowering Plants Make Seeds?	1. Resource book p A44-49 2. Science Notebook p 28-29 3. Materials p A44	1. Written assessment Guide p28 2. Science notebook p28-29 3. Science Journal 4. Teacher Observation
2A/ 2B 1A/ 1B	How Do Plants With Cones Make and Protect Seeds?	1. Resource book p A50-55 2. Science Notebook p31 3. Materials p A50	1. Written assessment Guide p29 2. Science notebook p31 3. Science Journal 4. Teacher Observation
2A/ 2B 1A/ 1B	How Do Plants Change During Their Life Cycles?	1. Resource book p A58-62 2. Science Notebook p35-36 3. Materials p A58	1. Science Journal 2. Teacher Observation

Teacher: 3<sup>rd</sup> Grade Science

Unit: Sun, Moon, and Earth

Time: 5-6 weeks

Standards/ Benchmarks	Activities	Materials	Evaluation - Possible Tools
3C/ 1A 1B	What is the Moon Like?	1. Resource book p B6-17 2. Science Notebook p47-50 3. Materials p B6 4. CD Investigation 1 p.B1m	1. Written assessment Guide p41 2. Science notebook p47-50 3. Science Journal 4. Teacher Observation
3C/ 1A 1B	What is Being on the Moon Like?	1. Resource book p B18-B23 2. Science Notebook p54-57 3. Materials p B18 4. CD Investigation 2 pB1m	1. Written assessment Guide p42 2. Science notebook p54-57 3. Science Journal 4. Teacher Observation
3C/ 1A 1B	What is the Sun Like?	1. Resource book p B24-30 2. Science Notebook p59-61 3. Materials p B24 4. CD Investigation 1 p.B1m CD Investigation 2 pB1m	1. Written assessment Guide p43 2. Science notebook p59-61 3. Science Journal 4. Teacher Observation
3C/ 1A 1B	How Does Earth Move Each Day?	1. Resource book p B34-41 2. Science Notebook p67-70 3. Materials p B34 4. CD Investigation 3 p.B1m	1. Written assessment Guide p46 2. Science notebook p67-70 3. Science Journal 4. Teacher Observation

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation - Possible Tools</b>
3C/ 1A 1B	How Does Earth Move Throughout the Year?	1. Resource book p B42-49 2. Science Notebook p73-76 3. Materials p B42 4. CD Investigation 3 p.B1m	1. Written assessment Guide p47 2. Science notebook p73-76 3. Science Journal 4. Teacher Observation
3C/ 1A 1B	What Causes Seasons?	1. Resource book p B60-71 2. Science Notebook p89-91 3. Materials p B60 4. CD Investigation 4 p.B1m	1. Written assessment Guide p51 2. Science notebook p89-91 3. Science Journal 4. Teacher Observation
1A/ 1B	What Are Eclipses?	1. Resource book p B72-78 2. Science Notebook p95-98 3. Materials p B72	1. Written assessment Guide p52 2. Science notebook p95-98 3. Science Journal 4. Teacher Observation

Teacher: 3<sup>rd</sup> Grade Science

Unit: Forms of Energy

Time: 4-5 weeks

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation - Possible Tools</b>
4A/ 4B 1A/ 1B	What is Energy?	Resource book C6-C13 Science notebook 109-112 3. Materials p C4a 4. CD Investigation 1 pC1m	1. Written assessment Guide p63 2. Science notebook p109-112 3. Science Journal 4. Teacher Observation
4B/ 1A 1B	What Can Happen to Energy?	Resource book C14-20 Science notebook 115-119 3. Materials p C14 4. CD Investigation 2 pC1m	1. Written assessment Guide p64 2. Science notebook p115-119 3. Science Journal 4. Teacher Observation
4A/ 4B 1A/ 1B	What is Heat and How is it Produced and Measured?	Resource book C24-29 Science notebook 125-128 3. Materials p C24 4. CD Investigation 2 pC1m	1. Written assessment Guide p67 2. Science notebook p125-128 3. Science Journal 4. Teacher Observation
4A/4B 1A 1B	How can Heat Move	Resource book C30-39 2. Science notebook 130-134 3. Materials p C30	1. Written assessment Guide p68 2. Science notebook p130-134 3. Science Journal 4. Teacher Observation
4B/ 1A 1B	How can Heat Change Materials	Resource book C40-44 Science notebook 137-139 3. Materials p C40	1. Written assessment Guide p69 2. Science notebook p137-139 3. Science Journal 4. Teacher Observation
4A/4B 1A/ 1B	What Energy Sources Do People Use?	Resource book C48-55 Science notebook 145 3. Materials p C48 4. CD Investigation 3 pC1m	1. Written assessment Guide p72 2. Science notebook p145 3. Science Journal 4. Teacher Observation
4A/ 1A 1B	How Can People Save Energy?	Resource book C6-C13 Science notebook 109-112 3. Materials p C6 4. CD Investigation 3 pC1m	1. Written assessment Guide p73 2. Science notebook p147-148 3. Science Journal 4. Teacher Observation

Teacher: 3<sup>rd</sup> Grade Science

Unit: Earth's Water

Time: 4-5 weeks

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation - Possible Tools</b>
3A/ 1A 1B	Where is Water Found on Earth and Why is Water Important?	1. Resource book p D6-11 2. Science notebook 159-161 3 Materials pD4a	1. Written assessment Guide p84 2. Science notebook p159-161 3. Science Journal 4. Teacher Observation
3A/ 1A 1B	How Does Nature Move Water?	1. Resource book p D14-19	1. Science Journal 2. Teacher Observation
1A/ 1B	Where Are Sources of Fresh Water Found?	1. Resource book p D20-28 2. Science notebook 166-167 3 Materials pD20	1. Written assessment Guide p86 2. Science notebook p166-167 3. Science Journal 4. Teacher Observation
3A/ 1A 1B	What Happens to Water in Pipes?	1. Resource book p D32-39 2. Science notebook 175-178 3 Materials pD32	1. Written assessment Guide p89 2. Science notebook p175-178 3. Science Journal 4. Teacher Observation
3A/ 1A 1B	How Does Drinking Water Vary?	1. Resource book p D40-45 2. Science notebook 181-183 3 Materials pD40	1. Written assessment Guide p90 2. Science notebook p181-183 3. Science Journal 4. Teacher Observation
3A/ 1A 1B	What Things in Water Can Be Harmful?	1. Resource book p D46-52 2. Science notebook 185-187 3 Materials pD46 4. CD Investigation 2 p. D1m	1. Written assessment Guide p91 2. Science notebook p185-187 3. Science Journal 4. Teacher Observation
3A/ 1B	What Can Happen to Clean Water?	1. Resource book p D56-63 2. Science notebook 193 3 Materials pD56	1. Written assessment Guide p94 2. Science notebook p193 3. Science Journal 4. Teacher Observation
3A/ 1B	How Does Water Pollution Move From Place to Place?	1. Resource book p D64-71 2. Science notebook 196-199 3 Materials pD64	1. Written assessment Guide p95 2. Science notebook p196-199 3. Science Journal 4. Teacher Observation
3A/ 1B	How Can We Save and Protect Water?	1. Resource book p D72-78 2. Science notebook 202-203 3 Materials pD72 4. CD Investigation 3 & 4 p. D1m	1. Written assessment Guide p96 2. Science notebook p202-203 3. Science Journal 4. Teacher Observation

Teacher: 3<sup>rd</sup> Grade Science

Unit: Roles of Living Things

Time: 4-5 weeks

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation - Possible Tools</b>
2A/ 1A 1B	What Do Living Things Need?	1. Resource book p E6-13 2. Science notebook 213-215 3. Materials p. E6	1. Written assessment Guide p107 2. Science notebook p213-215 3. Science Journal 4. Teacher Observation
2A/ 1A 1B	How Do Living Things Get the Food They Need?	1. Resource book p E14-21 2. Science notebook 217-219 3. Materials p. E14	1. Written assessment Guide p107 2. Science notebook p217-219 3. Science Journal 4. Teacher Observation

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation - Possible Tools</b>
2A/ 1A 1B	What are Food Chains and Food Webs?	1. Resource book p E22-35 2. Science notebook 221-224 3. Materials p. E22	1. Written assessment Guide p107 2. Science notebook p221-224 3. Science Journal 4. Teacher Observation
2A/ 1A 1B	How Are Living Things Adapted for Getting Food?	1. Resource book p E38-45 2. Science notebook 231-232 3. Materials p. E38	1. Written assessment Guide p107 2. Science notebook p231-232 3. Science Journal 4. Teacher Observation
2A/ 1A 1B	How Are Living Things Adapted for Protection?	1. Resource book p E46-59 2. Science notebook 234-238 3. Materials p. E46	1. Written assessment Guide p107 2. Science notebook p234-238 3. Science Journal 4. Teacher Observation
2A/ 1A 1B	How Can Living Things Change the Environment?	1. Resource book p E62-69 2. Science notebook 245 3. Materials p. E62	1. Written assessment Guide p107 2. Science notebook p116 3. Science Journal 4. Teacher Observation
2A/ 1A 1B	How Are Living Things Adapted to Their Environment?	1. Resource book p E70-79 2. Science notebook 248-249 3. Materials p. E70	1. Written assessment Guide p117 2. Science notebook p248-249 3. Science Journal 4. Teacher Observation

Teacher: 3<sup>rd</sup> Grade Science

Unit: What's for Lunch?

Time: 4-5 weeks

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation - Possible Tools</b>
2C	Why Does Your Body Need Food?	1. Resource book p F6-15 2. Science notebook 261-262 3. Materials p. F6	1. Written assessment Guide p128 2. Science notebook p261-262 3. Science Journal 4. Teacher Observation
2C	How Does Your Diet Stack Up?	1. Resource book p F16-23 2. Science notebook 265-266 3. Materials p. F16	1. Written assessment Guide p129 2. Science notebook p265-266 3. Science Journal 4. Teacher Observation
2C	How Can You Make the Right Food Choices?	1. Resource book p F24-31 2. Science notebook 268-271 3. Materials p. F24	1. Written assessment Guide p130 2. Science notebook p268-271 3. Science Journal 4. Teacher Observation
2C	How Clean is Clean Enough?	1. Resource book p F32-38 2. Science notebook 274-275 3. Materials p. F32	1. Written assessment Guide p131 2. Science notebook p274-275 3. Science Journal 4. Teacher Observation
2C	Where Does Digestion Begin?	1. Resource book p F42-47 2. Science notebook 281-282 3. Materials p. F42	1. Written assessment Guide p117 2. Science notebook p281-282 3. Science Journal 4. Teacher Observation
2C	How Can You Keep Your Teeth Healthy?	1. Resource book p F48-53 2. Science notebook 284-286 3. Materials p. F48	1. Written assessment Guide p117 2. Science notebook p284-286 3. Science Journal 4. Teacher Observation

Teacher: 3<sup>rd</sup> Grade Science

Unit: Health

Time: 4 weeks

Standards/ Benchmarks	Activities	Materials	Evaluation - Possible Tools
2C	Knows safe pedestrian habits	Supplemental materials	Written assessment, science journal, teacher observation
2C	Knows safe bicycle habits	Supplemental materials	Written assessment, science journal, teacher observation
2C	Knows safe bus riding habits	Supplemental materials	Written assessment, science journal, teacher observation

## **Course Outline – Grade Four**

### **Life Science**

#### **UNIT C - Animals**

1. Animals Meet Their Needs
2. All Kinds of Animals

### **Physical Science**

#### **UNIT B – Properties of Matter**

1. Describing Matter
2. Observing States of Matter
3. Causing States in Matter

#### **UNIT D – Magnetism and Electricity**

1. Magnetism
2. Electrical Energy

### **Earth Science**

#### **UNIT A – Earth's Land Resources**

1. The Shape of the Land
2. The Importance of Natural Resources
3. The Problem With Trash

#### **UNIT E – Weather and Climate**

1. Weather Patterns

### **The Human Body**

#### **UNIT F – The Body's Delivery System**

1. The Ins and Outs of Breathing
2. Keeping Your Systems Healthy
3. Personal and Traffic Safety

## Subject Area: SCIENCE - 4th

### Length of Unit: On going \_\_\_\_\_

#### **Standard 1:**

**SCIENTIFIC INQUIRY.** The student knows that scientific knowledge is gained through experiments, research and use of technology

#### **Benchmarks:**

- A. **Processes and Skills** – {Nature of scientific knowledge- experiments (equipment, tools, methods, inquiry, makes inferences based on data, infer unstated relationships, define problem)}
- B. **Analysis and Interpretation-** Scientific enterprise, technology, distinguish among hypotheses, judge relevance, reliability of sources, science answers questions.

<b>Standards/ Benchmarks</b>	<b>Section from Text</b>	<b>Critical Objectives</b>	<b>Assessments</b>	<b>Infusions/ Provisions</b>
1 A & 1 B	Units A thru F  Pgs. H2 – H 17  student6t text	Knows that scientists formulate and test their inquiries of nature using observations, experiments, and models.	Performance Assess.(Lab reports)  ITBS  Teacher observation	HOTS, SPECIAL,  MEDIA, TECH, MCGF,  GUID,T & G, LS,  CS, GS, HGD
1A & 1 B	Units A thru F  Pgs. H2 – H17  student text	Uses appropriate tools and techniques to gather, analyze, and interpret scientific data.	Performance Assess.(Lab reports)  ITBS  Teacher observation	HOTS, SPECIAL,  MEDIA, TECH, MCGF,  GUID,T & G, LS,  CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE - 4th****Length of Units: C & F-7 wks. each****Standard 2**

LIFE SCIENCES- The students know about the diversity and unity that characterizes life both inside and outside an organism

**Benchmarks**

- A. Structure of living things (Knows major categories of living organisms, variety of internal and external structures, inherited characteristics, evolution, how species depend on one another and the environment)
- B. Life Cycles (Organisms are growing, dying, new ones produced)
- C. Health and Safety (nutrition, personal safety, growth and development)

Standards/ Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
2 A & 2 B	Unit C Supplemental sources	Knows that an organism's has structural adaptations and behavior necessary for survival.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID,T & G, LS, CS, GS, HGD
2 A	Unit C Supplemental sources	Knows basic classifications of animals.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID,T & G, LS, CS, GS, HGD
2 C	Unit F Supplemental sources	Knows the basic structure of the human body systems and how to keep them healthy.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID,T & G, LS, CS, GS, HGD
2 C	Unit F Unit E Pg. H8 & 9 student text Supplemental sources	Knows that individuals have some responsibility for their own health and safety. (traffic and personal).	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID,T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE - 4th****Length of Units: A & E - 7 weeks each****Standard 3:  
EARTH AND SPACE SCIENCES** – The students understand basic earth features and processes and the earth's position in the galaxy**Benchmarks:**

- A. Earth's composition (Knows characteristics of water, soil & air as liquid, gas)
- B. Changes in Earth (Knows wind, water, ice, waves, soil change constantly)
- C. The Universe (Properties of sun, moon and stars)

Standards/ Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
3 A	Unit A Supplemental sources	Knows that Earth materials are solid (rocks and soil), water, and the gases of the atmosphere.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID,T & G, LS, CS, GS, HGD
3 B	Unit A Supplemental sources	Knows that waves, wind, water, and ice constantly change the Earth's land surface.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID,T & G, LS, CS, GS, HGD
3 C	Unit E Supplemental sources	Knows that the Sun causes changes in Earth's environment.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID,T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE - 4th****Length of Units: B & D - 13 weeks****Standard 4:****PHYSICAL UNIVERSE** – The students understand the physical and chemical properties that govern the universe.**Benchmarks:**

- A. Mechanics force and motion (Understands energy types, sources, conversions, motion, sound, electricity, gravity and magnets).
- B. Characteristics of matter (Knows the structure, function & properties of matter that can be measured and has different states).

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
4 B	Unit B	Knows basic properties of matter.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
4 B	Unit B	Knows the characteristics of physical and chemical changes.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
4 A	Unit D	Knows that electrical circuits provide a means of converting electrical energy into heat, light, sound., chemical, or other forms of energy,	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
4 A	Unit D	Understands basic properties of magnets and their fields.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## 4<sup>th</sup> Grade Activities

Standards/ Benchmarks	Activities	Materials	Evaluation
1A, 1B, 3B	How Does the Moving Water Shape the Land	Resource book A4-A15, See materials list p.4a	(1) written assessment p 21 in Assessment Guide, (2) chapter tests
1A, 1B, 3B	How Do Wind and Ice Shape Land	Resource book A15-A25, see materials list p.4a	(1) written assessment p 22 in Assessment Guide, (2) chapter tests
1A, 1B, 3A	Why is Soil an Important Resource	Resource book A26-33, see materials list p.26a	(1) written assessment p 25 in Assessment Guide, (2) chapter tests
1A, 1B, 3B	Why are Rocks and Minerals Important	Resource book A34-43, see materials list p.26a	(1) written assessment p 26 in Assessment Guide, (2) chapter test
1A, 1B, 3A	Why are Energy Resources so Important	Resource book A44-A51, see materials list p.26a	(1) written assessment p 27 in Assessment Guide, (2) chapter test
1A, 1B, 4B	How Can Matter Be Described	Resource book B4-B13, See materials list p.4a	(1) written assessment p 43 in Assessment Guide, (2) chapter tests
1A, 1B, 4B	How Can Matter Be Measured	Resource book B14-B23, see materials list p.4a	(1) written assessment p 44 in Assessment Guide, (2) chapter tests
1A, 1B, 4B	What is Matter Like	Resource book B24-B35, see materials list p.26a	(1) written assessment p 47 in Assessment Guide, (2) chapter tests
1A, 1B, 4B	How Can Matter Change State	Resource book B36-B43, see materials list p.26a	(1) written assessment p 48 in Assessment Guide, (2) chapter test
1A, 1B, 4B	What Are Physical Changes	Resource book B44-B55, see materials list p.26a	(1) written assessment p 51 in Assessment Guide, (2) chapter test
1A, 1B, 4B	What Are Chemical Changes	Resource book B56-B63, see materials list p.52a	(1) written assessment p 52 in Assessment Guide, (2) chapter test
1A, 1B, 2A, 2B	What Basic Needs Do Animals Share	Resource book C4-C13, See materials list p.4a	(1) written assessment p 63 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2B	How Do Body Parts Help Animals Meet their Needs	Resource book C14-C23, see materials list p.4a	(1) written assessment p 64 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2B	How Do Behaviors Help Animals Meet their Needs	Resource book C24-C31, see materials list p.26a	(1) written assessment p 65 in Assessment Guide, (2) chapter tests
1A, 1B, 2A	How Can Living Things be Classified	Resource book C34-C41, see materials list p.32a	(1) written assessment p 68 in Assessment Guide, (2) chapter test
1A, 1B, 2A	How Do Vertebrae Differ	Resource book C44-C53, see materials list p.32a	(1) written assessment p 69 in Assessment Guide, (2) chapter test
1A, 1B, 2A	How Do the Groups of Invertebrates Differ	Resource book C54-C63, see materials list p.32a	(1) written assessment p 70 in Assessment Guide, (2) chapter test
1A, 1B, 4A	What are Magnets	Resource book D4-D14, See materials list p.4a	(1) written assessment p 81 in Assessment Guide, (2) chapter tests
1A, 1B, 4A	What are Magnetic Force Fields	Resource book D15-D25, see materials list p.4a	(1) written assessment p 82 in Assessment Guide, (2) chapter tests
1A, 1B, 4A	What is Static Electricity	Resource book D26-D35, see materials list p.26a	(1) written assessment p 85 in Assessment Guide, (2) chapter tests
1A, 1B, 4A	What is the Current Electricity	Resource book D36-D43, see materials list p.32a	(1) written assessment p 86 in Assessment Guide, (2) chapter test
1A, 1B, 4A	How Do Electric Circuits Differ	Resource book D44-D53, see materials list p.32a	(1) written assessment p 87 in Assessment Guide, (2) chapter test
1A, 1B, 3C, 3B	What Can Clouds Tell You About the Weather	Resource book E50-E56, see materials list p.24a	(1) written assessment p 111 in Assessment Guide, (2) chapter test
1A, 1B, 3C, 3B	How Can Maps Help You Predict Weather	Resource book E57-E65, see materials list p.50a	(1) written assessment p 112 in Assessment Guide, (2) chapter test
1A, 1B, 3C, 3B, 2C	How Can You Stay Safe During Dangerous Weather	Resource book E66-E75, See materials list p.50a	(1) written assessment p 113 in Assessment Guide, (2) chapter tests

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation</b>
1A, 1B, 2C,	What Happens when You Breathe	Resource book F4-F13, See materials list p.4a	(1) written assessment p 102 in Assessment Guide, (2) chapter tests
1A, 1B, 2C,	How Does the Respiratory System Work	Resource book F14-F21, see materials list p.4a	(1) written assessment p 103 in Assessment Guide, (2) chapter tests
1A, 1B, 2C,	How Does Blood Flow Through your Body	Resource book F22-F35, see materials list p.22a	(1) written assessment p 106 in Assessment Guide, (2) chapter tests
1A, 1B, 2C,	How Do Diseases Spread	Resource book F46-F57, see materials list p.46a	(1) written assessment p 108 in Assessment Guide, (2) chapter test
1A, 1B, 2C,	What Are Harmful and Helpful Drugs	Resource book F58-F63, see materials list p.46a	(1) written assessment p 111 in Assessment Guide, (2) chapter test

## **Course Outline – Grade Five**

### **Life Science**

#### **UNIT A – Plants**

1. Plants – Inside and Out
2. Plant Processes

#### **UNIT D – Populations and Ecosystems**

1. Living things and Environments
2. Energy and Matter in Ecosystems
3. Different Kinds of Ecosystems

### **Physical Science**

#### **UNIT C – Energy, Work, and Machines**

1. Energy and Work
2. Work and Machines

#### **UNIT F – Light and Sound**

1. Properties of Light
2. Light, Lenses and Color
3. Properties of Sound
4. Hearing and Recording Sound

### **Earth Science**

#### **UNIT B – The Solar System and Beyond**

1. Exploring the Night Sky
2. The Solar System
3. How Do the Planets Differ?
4. Living in Space

#### **UNIT E – The Solid Earth**

1. Minerals
2. Rocks
3. Earth's Structure

### **The Human Body**

#### **UNIT G – Movement and Control**

1. Bones and Muscles
2. The Nervous System
3. Staying in Control
4. Personal and Traffic Safety

## Subject Area: SCIENCE - 5th

### Length of Unit: On going

**Standard 1:**  
**SCIENTIFIC INQUIRY.** The student knows that scientific knowledge is gained through experiments, research and use of technology

#### Benchmarks:

- A. **Processes and Skills** – {Nature of scientific knowledge- experiments (equipment, tools, methods, inquiry, makes inferences based on data, infer unstated relationships, define problem)}
- B. **Analysis and Interpretation-** Scientific enterprise, technology, distinguish among hypotheses, judge relevance, reliability of sources, science answers questions.

Standards/ Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
1A & 1B	Units A thru G Pgs. H2 – H 17 student text	Knows that scientists formulate and test their inquiries of nature using observations, experiments, and models.	Performance Assess. (Lab reports) ITBS Teacher observation	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
1A & 1 B	Units A thru G Pgs. H2 – H17 student text	Uses appropriate tools and techniques to gather, analyze, and interpret scientific data.	Performance Assess. (Lab reports) ITBS Teacher observation	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## Subject Area: SCIENCE - 5<sup>th</sup>

**Length of Units:** A, D, & G - 5 wks. each

### **Standard 2:**

LIFE SCIENCES - The students know about the diversity and unity that characterizes life both inside and outside an organism

#### **Benchmarks:**

- A. Structure of living things (Knows major categories of living organisms, variety of internal and external structures, inherited characteristics, evolution, how species depend on one another and the environment)
- B. Life Cycles (Organisms are growing, dying, new ones produced)
- C. Health and Safety (nutrition, personal safety, growth and development)

Standards/ Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
2A & 2 B	Unit A Unit D Supplemental sources	Knows that animals and plants have a variety of body and internal structures that contribute to their being able to make or find food, grow, and reproduce.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
	Unit A Supplemental sources	Knows that major categories of all living things are plants and animals.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
2A & 2B	Unit A Unit D Unit G Supplemental sources	Knows that all organisms must be able to obtain and use resources, grow, reproduce, and maintain a relatively stable internal environment while living in a constantly changing external environment.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
	Unit G Pg. H8 & 9 student text Supplemental sources	Knows strategies for managing a range of situations involving injury. (personal and traffic safety)	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE - 5th****Length of Units: B & E - 9 weeks****Standard 3:****EARTH AND SPACE SCIENCES** – The students understand basic earth features and processes and the earth's position in the galaxy**Benchmarks:**

- A. Earth's composition (Knows characteristics of water, soil & air as liquid, gas)
- B. Changes in Earth (Knows wind, water, ice, waves, soil change constantly)
- C. The Universe (Properties of sun, moon and stars)

Standards/ Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
3A & 3B	Unit E Supplemental sources	Knows that the solid Earth is layered with a thin crust (components), mantle, and core.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS
3A & 3B	Unit E Supplemental sources	Knows that the surface of the Earth changes through a combination of constructive and destructive forces.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS
3C	Unit B Supplemental sources	Knows that nine planets of differing sizes and surface features and with differing compositions move around the Sun in nearly circular orbits.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS
3C	Unit E Supplemental sources	Understands that stars and galaxies exist and possess varying characteristic.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## Subject Area: SCIENCE - 5th

### Length of Unit: On going

**Standard 1:**  
**SCIENTIFIC INQUIRY.** The student knows that scientific knowledge is gained through experiments, research and use of technology

#### Benchmarks:

- A. **Processes and Skills** – {Nature of scientific knowledge- experiments (equipment, tools, methods, inquiry, makes inferences based on data, infer unstated relationships, define problem)}
- B. **Analysis and Interpretation-** Scientific enterprise, technology, distinguish among hypotheses, judge relevance, reliability of sources, science answers questions.

Standards/ Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
1A & 1B	Units A thru G Pgs. H2 – H17 student text	Knows that scientists formulate and test their inquiries of nature using observations, experiments, and models.	Performance Assess.(Lab reports) ITBS Teacher observation	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
1A & 1 B	Units A thru G Pgs. H2 – H17 student text	Uses appropriate tools and techniques to gather, analyze, and interpret scientific data.	Performance Assess.(Lab reports) ITBS Teacher observation	HOTS, SPECIAL, MEDIA, TECH, MCGF, GUID, T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## 5<sup>th</sup> Grade Activities

### Life Science

#### Unit A

Standards/ Benchmarks	Activities	Materials	Evaluation
1A, 1B, 2A	Examine parts of plants	Resource book A4-A21, See materials list p.4a	(1) written assessment p 21 in Assessment Guide, (2) chapter tests
1A, 1B, 2A	Observing Plant Cells	Resource book A22-A27, see materials list p.4a	(1) written assessment p 22 in Assessment Guide, (2) chapter tests
1A, 1B, 2A	How Plants Make Food	Resource book A28-A39, see materials list p.28a	(1) written assessment p 25 in Assessment Guide, (2) chapter tests
1A, 1B, 2A	How Do Plants Help Recycle Matter	Resource book A40-A47, see materials list p.28a	(1) written assessment p 26 in Assessment Guide, (2) chapter test
1A, 1B, 2A	How Do Plants React to Light and Gravity	Resource book A48-A53, see materials list p.28a	(1) written assessment p 27 in Assessment Guide, (2) chapter test
1A, 1B, 2B	How Do Plants Reproduce	Resource book A54-A63, see materials list p.54a	(1) written assessment p 30 in Assessment Guide, (2) chapter test
1A, 1B, 2B	Stages in the Life of a Seed Plant	Resource book A64-A73, see materials list p.54a	(1) written assessment p 31 in Assessment Guide, (2) chapter test
1A, 1B, 2A	How are Plants Classified	Resource book A74-A83, see materials list p.74a	(1) written assessment p 34 in Assessment Guide, (2) chapter test
1A, 1B, 2A	How are Plants Adapted to Different Environment	Resource book A84-A95, see materials list p.74a	(1) written assessment p 35 in Assessment Guide, (2) chapter test

#### Unit D

Standards/ Benchmarks	Activities	Materials	Evaluation
1A, 1B, 2A, 2B	What is an ecosystem	Resource book D4-D13, See materials list p.4a	(1) written assessment p 91 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2B	How are Living things in an Ecosystem Related	Resource book D14-D23, See materials list p.4a	(1) written assessment p 92 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2B	How does energy flow in an ecosystem	Resource book D24-D31, see materials list p.24a	(1) written assessment p 95 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2B	How is matter cycled in an ecosystem	Resource book D32-D43, see materials list p.24a	(1) written assessment p 96 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2B	How do earth's major ecosystems differ	Resource book D44-D55, see materials list p.44a	(1) written assessment p 99 in Assessment Guide, (2) chapter test
1A, 1B, 2A, 2B	What is biodiversity and how is it changing	Resource book D56-D63, see materials list p.44a	(1) written assessment p 100 in Assessment Guide, (2) chapter test

## Physical Science

#### Unit C

Standards/ Benchmarks	Activities	Materials	Evaluation
1A, 1B, 4A	What are some Different forms of Energy	Resource book B4-B17, See materials list p.4a	(1) written assessment p 46 in Assessment Guide, (2) chapter tests
1A, 1B, 4A, 4B	How Can Energy be Changed to other Forms	Resource book B18-B27, See materials list p.4a	(1) written assessment p 47 in Assessment Guide, (2) chapter tests
1A, 1B, 4A, 4B	What are Work and Friction	Resource book B28-B41, see materials list p.28a	(1) written assessment p 50 in Assessment Guide, (2) chapter tests
1A, 1B, 4A, 4B	How Do Ramps Help Us Work	Resource book B42-B51, see materials list p.28a	(1) written assessment p 51 in Assessment Guide, (2) chapter tests
1A, 1B, 4A	What are Levers and Pulleys	Resource book B52-B57, see materials list p.52a	(1) written assessment p 54 in Assessment Guide, (2) chapter test
1A, 1B, 4A	What is a Wheel and Axle	Resource book B58-B61, see materials list p.52a	(1) written assessment p 55 in Assessment Guide, (2) chapter test

## Unit F

Standards/ Benchmarks	Activities	Materials	Evaluation
1A, 1B, 4A, 4B	What is Light and Where Does it Come From	Resource book F4-F13, See materials list p.4a	(1) written assessment p 134 in Assessment Guide, (2) chapter tests
1A, 1B, 4A, 4B	How Does Light Travel	Resource book F14-F19, see materials list p.4a	(1) written assessment p 135 in Assessment Guide, (2) chapter tests
1A, 1B, 4A, 4B	How Does Light Behave	Resource book F20-F27, see materials list p.4a	(1) written assessment p 136 in Assessment Guide, (2) chapter tests
1A, 1B, 4A, 4B	How Do Lenses Control Light	Resource book F28-F35, see materials list p.28a	(1) written assessment p 139 in Assessment Guide, (2) chapter test
1A, 1B, 4A, 4B	How are Lenses Used in Telescopes and Microscopes	Resource book F36-F43, see materials list p.28a	(1) written assessment p 140 in Assessment Guide, (2) Chapter test
1A, 1B, 4A, 4B	How are Light and Color Related	Resource book F44-F51, see materials list p.28a	(1) written assessment p 141 in Assessment Guide, (2) chapter test
1A, 1B, 4A, 4B	What is Sound	Resource book F52-F59, see materials list p.52a	(1) written assessment p 144 in Assessment Guide, (2) chapter test
1A, 1B, 4A, 4B	How Does Affect How Sound Travels	Resource book F60-F63, see materials list p.52a	(1) written assessment p 145 in Assessment Guide, (2) chapter test
1A, 1B, 4A, 4B	How Do High Sounds Differ from Low Sounds	Resource book F64-F73, see materials list p.52a	(1) written assessment p 146 in Assessment Guide, (2) chapter test
1A, 1B, 4A, 4B	How Can You Control Sound	Resource book F74-F81, see materials list p.74a	(1) written assessment p 149 in Assessment Guide, (2) chapter test
1A, 1B, 4A, 4B	How Do People Hear	Resource book F82-F87, see materials list p.74a	(1) written assessment p 150 in Assessment Guide, (2) chapter test
1A, 1B, 4A, 4B	How is Sound Transmitted and Recorded	Resource book F88-F95, see materials list p.74a	(1) written assessment p 151 in Assessment Guide, (2) chapter test

## Earth Science

### Unit B

Standards/ Benchmarks	Activities	Materials	Evaluation
1A, 1B, 3C	What Can You See in the Night Sky	Resource book B4-B17, See materials list p.4a	(1) written assessment p 46 in Assessment Guide, (2) chapter tests
1A, 1B, 3C	How Do Astronomers Learn about Space	Resource book B18-B27, See materials list p.4a	(1) written assessment p 47 in Assessment Guide, (2) chapter tests
1A, 1B, 3C	What is the Solar System Made of	Resource book B28-B41, see materials list p.28a	(1) written assessment p 50 in Assessment Guide, (2) chapter tests
1A, 1B, 3C	How Do Planets Differ	Resource book B42-B51, see materials list p.28a	(1) written assessment p 51 in Assessment Guide, (2) chapter tests
1A, 1B, 3C	What are Stars and How Do They Differ	Resource book B52-B57, see materials list p.52a	(1) written assessment p 54 in Assessment Guide, (2) chapter test
1A, 1B, 3C	How Far Away are the Stars	Resource book B58-B61, see materials list p.52a	(1) written assessment p 55 in Assessment Guide, (2) chapter test
1A, 1B, 3C	What is the Life Cycle of a Star	Resource book A, see materials list p.52a	(1) written assessment p 56 in Assessment Guide, (2) chapter test
1A, 1B, 3C	What are Galaxies and How Do They Differ	Resource book A64-A73, see materials list p.52a	(1) written assessment p 57 in Assessment Guide, (2) chapter test
1A, 1B, 3C	What is it Like to Travel in Space	Resource book A74-A83, see materials list p.74a	(1) written assessment p 60 in Assessment Guide, (2) chapter test
1A, 1B, 3C	How Do Humans Survive in Space	Resource book A84-A95, see materials list p.74a	(1) written assessment p 51 in Assessment Guide, (2) chapter test
1A, 1B, 3C	Is There Other Life in the Universe	Resource book A4-A21, See materials list p.74a	(1) written assessment p 62 in Assessment Guide, (2) chapter tests

**Unit E**

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation</b>
1A, 1B, 3A,3B	How Can You Identify Minerals	Resource book E4-E21, See materials list p.4a	(1) written assessment p 111 in Assessment Guide, (2) chapter tests
1A, 1B, 3A,3B	What Are Minerals Used for	Resource book E22-E33, see materials list p.4a	(1) written assessment p 112 in Assessment Guide, (2) chapter tests
1A, 1B, 3A,3B	How are Rocks Classified	Resource book E34-E49, see materials list p.34a	(1) written assessment p 115 in Assessment Guide, (2) chapter tests
1A, 1B, 3A,3B	How Do the Properties of Rocks Make Them Useful	Resource book E50-E55, see materials list p.34a	(1) written assessment p 116 in Assessment Guide, (2) chapter test
1A, 1B, 3A,3B	How Do Rocks Change Over Time	Resource book E56-E63, see materials list p.34a	(1) written assessment p 117 in Assessment Guide, (2) chapter test
1A, 1B, 3A,3B	What is the Earth's Structure	Resource book E64-E71, see materials list p.64a	(1) written assessment p 120 in Assessment Guide, (2) chapter test
1A, 1B, 3A,3B	How Can Fossils Help Tell Us How Old a Rock is	Resource book E72-E79, see materials list p.64a	(1) written assessment p 121 in Assessment Guide, (2) chapter test
1A, 1B, 3A,3B	How Do Rocks Bend	Resource book E80-E87, see materials list p.64a	(1) written assessment p 122 in Assessment Guide, (2) chapter test
1A, 1B, 3A,3B	What is a Fault and How Can it Make Mountains	Resource book E88-E95, see materials list p.64a	(1) written assessment p 123 in Assessment Guide, (2) chapter test

**The Human Body****Unit G**

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation</b>
1A, 1B, 2A, 2C	What are the Parts of the Skeletal System	Resource book G4-G13, See materials list p.4a	(1) written assessment p 162 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2C	How do Bones and Muscles Cause Movement	Resource book G14-G23, see materials list p.4a	(1) written assessment p 163 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2C	What Role do the Brain and Nerves Play	Resource book G24-G33, see materials list p.24a	(1) written assessment p 166 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2C	How Can You Respond to things Around You	Resource book G34-G45, see materials list p.24a	(1) written assessment p 167 in Assessment Guide, (2) chapter test
1A, 1B, 2A, 2C	How Do Drugs Affect the Body	Resource book G46-G55, see materials list p.46a	(1) written assessment p 170 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2C	How does Alcohol Affect the Body	Resource book G56-G63, see materials list p.46a	(1) written assessment p 171 in Assessment Guide, (2) chapter test
1A, 1B, 2C	Traffic Safety	Supplemental Resources	Teacher Observation

## **Course Outline – Grade Six**

### **Life Science**

#### **UNIT A – Cells and Microbes**

1. Cells
2. Protists and Fungi
3. Bacteria and Viruses

#### **UNIT D – Continuity**

1. Reproduction
2. Heredity
3. Change Through Time

### **Physical Science**

#### **UNIT C – The Nature of Matter**

1. Characteristics of Matter
2. Kinds of Matter
3. How Matter Changes

#### **UNIT E – Forces and Motion**

1. Moving On
2. Getting a Grip on Gravity
3. Making and Measuring Motion
4. Forces in Pairs
5. Real – World Forces

### **Earth Science**

#### **UNIT B – The Changing Earth**

1. Cracked Crust
2. Tectonic Plates and Mountains
3. Shake, Rattle, and Roll
4. Volcanoes

#### **UNIT E – Oceanography**

1. Moving Ocean Water

### **The Human Body**

#### **UNIT G – Growing Up Healthy**

1. The Human Life Cycle
2. The Immune System
3. Making Healthful Choices
4. Personal and Traffic Safety

## Subject Area: SCIENCE - 6th

### Length of Unit: On going

#### **Standard 1:**

**SCIENTIFIC INQUIRY-** The student knows that scientific knowledge is gained through experiments, research and use of technology

#### **Benchmarks**

- A. **Processes and Skills** – {Nature of scientific knowledge- experiments (equipment, tools, methods, inquiry, makes inferences based on data, infer unstated relationships, define problem)}
- B. **Analysis and Interpretation-** Scientific enterprise, technology, distinguish among hypotheses, judge relevance, reliability of sources, science answers questions.

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
1A & 1B	Units A thru G Pgs. H2 – H17 student text Supplemental sources	Knows that scientists formulate and test their inquiries of nature using observations, experiments, and models.	Performance Assess.(Lab reports) ITBS Teacher observation	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
1A & 1 B	Units A thru G Pgs. H2 – H17 student text Supplemental sources	Uses appropriate tools and techniques to gather, analyze, and interpret scientific data.	Performance Assess.(Lab reports) ITBS Teacher observation	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## Subject Area: SCIENCE - 6th

**Length of Units:** A, D, & G - 18 weeks

### **Standard 2:**

LIFE SCIENCES- The students know about the diversity and unity that characterizes life both inside and outside an organism

#### **Benchmarks:**

- A. Structure of living things** (Knows major categories of living organisms, variety of internal and external structures, inherited characteristics, evolution, how species depend on one another and the environment)
- B. Life Cycles** (Organisms are growing, dying, new ones produced)
- C. Health and Safety** (nutrition, personal safety, growth and development)

<b>Standards/ Benchmarks</b>	<b>Section from Text</b>	<b>Critical Objectives</b>	<b>Assessments</b>	<b>Infusions/ Provisions</b>
2A & 2B	Unit A Unit D Unit G Supplemental sources	Knows that animals and plants have a variety of body and internal structures (specialized cells) that contribute to their being able to make or find food, grow, and reproduce.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
2A & 2B	Unit A Supplemental sources	Knows that specialized cells perform specialized functions in multi-cellular organisms.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
2C	Unit G Supplemental sources	Knows strategies for managing a range of situations involving injury. (traffic and personal safety)	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
2 A	Unit D Supplemental sources	Knows that the characteristics of an organism can be described in terms of a combination of traits: some traits are inherited (genes) and others result from interactions with its environment.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

**Subject Area: SCIENCE - 6th****Length of Units: B & E - 7 weeks****Standard 3: EARTH AND SPACE SCIENCES – The students understand basic earth features and processes and the earth's position in the galaxy****Benchmarks:**

- A. Earth's composition (Knows characteristics of water, soil & air as liquid, gas),
- B. Changes in Earth (Knows wind, water, ice, waves, soil change constantly)
- C. The Universe (Properties of sun, moon and stars)

Standards/ Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
3B	Unit B	Knows that the surface of the Earth changes through a combination of constructive and destructive forces.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS
3A	Unit B	Knows that the Earth's surface is made up of tectonic plates that are in constant motion.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS
3C	Unit E	Knows that the Sun and moon affect ocean currents.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

<b>Standards/ Benchmarks</b>	<b>Section from Text</b>	<b>Critical Objectives</b>	<b>Assessments</b>	<b>Infusions/ Provisions</b>
2B	Unit D Supplemental sources	Knows that in sexual reproduction, an egg from a female unites with a sperm from a male to begin the development of a new individual that has an equal contribution of information from its mother and its father.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS, HGD
2C	Unit G Supplemental sources	Knows strategies for coping with concerns that occur during adolescence as related to nutrition, exercise, and substance abuse education.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS, HGD

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUD), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## Subject Area: SCIENCE - 6th

Length of Units: C & F - 5 weeks each

### **Standard 4:**

**PHYSICAL UNIVERSE** – The students understand the physical and chemical properties that govern the universe.

#### **Benchmarks**

- A. Mechanics force and motion (Understands energy types, sources, conversions, motion, sound, electricity, gravity and magnets).
- B. Characteristics of matter (Knows the structure, function & properties of matter that can be measured and has different states).

Benchmarks	Section from Text	Critical Objectives	Assessments	Infusions/ Provisions
4 A	Unit F	Knows that an object at rest will stay at rest, object in motion will stay in motion (inertia) until a force act on it.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS
4 A	Unit F	Know that for every action force there is an equal and opposite reaction force.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS
4 B	Unit C	Knows that atoms in solids are close together and don't move about easily: in liquids atoms are close together and stick to each other, but move about easily; atoms in gas are quite far apart and move about freely.	Chapter test ITBS Teacher Observations	HOTS, SPECIAL, MEDIA TECH, MCGF, GUID, T & G, LS, CS, GS

Higher Order Thinking Skills (HOTS), Special Education (SPECIAL), Media Information Skills (MEDIA), Technology (TECH), Multi-Cultural Gender Fair (MCGF), Guidance (GUID), Talented and Gifted (T & G), Learning Skills (LS), Communication Skills (CS), Global Studies (GS), Human Growth and Development (HGD)

## Sixth Grade Activities

### Unit: Cells and Microbes

Time: 5 weeks

Standards/ Benchmarks	Activities	Materials	Evaluation
1A, 1B, 2A, 2B	What are Cells	Resource book A4-A13, See materials list p.4a	(1) written assessment p 21 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2B	What are Some Life Processes of Cells	Resource book A14-A19, see materials list p.4a	(1) written assessment p 22 in Assessment Guide, (2) chapter tests
1A, 1B, 2A	How do Cells Make More Cells	Resource book A20-A27, see materials list p.4a	(1) written assessment p 23 in Assessment Guide, (2) chapter tests
1A, 1B, 2A, 2B	What are Protist	Resource book A28-A39, see materials list p.28a	(1) written assessment p 26 in Assessment Guide, (2) chapter test
1A, 1B, 2A, 2B	What are Fungi	Resource book A40-A45, see materials list p.28a	(1) written assessment p 27 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B	What are Bacteria and Viruses	Resource book A46-A55, see materials list p.46a	(1) written assessment p 30 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B	How do Bacteria and Viruses Affect Living Things	Resource book A56-A63, see materials list p.46a	(1) written assessment p 31 in Assessment Guide, (2) chapter test

## Unit: The Changing Earth

Time: 5 weeks

Standards/ Benchmarks	Activities	Materials	Evaluation
1A, 1B, 3B	Do Continents Really Drift About	Resource book B4-B15, See materials list p.4a	(1) written assessment p 42 in Assessment Guide, (2) chapter tests
1A, 1B, 3A, 3B	What Do the Locations of Volcanoes and Earthquakes Tell Us	Resource book B16-B21, see materials list p.4a	(1) written assessment p 43 in Assessment Guide, (2) chapter tests
1A, 1B, 3A, 3B	What Does the Sea Floor Tell Us About Plate Tectonics	Resource book B22-B33, see materials list p.4a	(1) written assessment p 44 in Assessment Guide, (2) chapter tests
1A, 1B, 3A	Why Do Tectonic Plates Move	Resource book B34-B41, see materials list p.34a	(1) written assessment p 47 in Assessment Guide, (2) chapter test
1A, 1B, 3A, 3B	How Does the Motion of Tectonic Plates Build Mountains	Resource book B42-B51, see materials list p.34a	(1) written assessment p 48 in Assessment Guide, (2) Chapter test
1A, 1B, 3A, 3B	What Causes Earthquakes and How Can They Be Compared	Resource book B52-B61, see materials list p.52a	(1) written assessment p 51 in Assessment Guide, (2) Chapter test
1A, 1B, 3A, 3B	What Happens to Earth's Crust During an Earthquake	Resource book B62-B67, see materials list p.52a	(1) written assessment p 52 in Assessment Guide, (2) chapter test
1A, 1B, 3B	How Are Earthquakes Located and Measured	Resource book B68-B81, see materials list p.52a	(1) written assessment p 53 in Assessment Guide, (2) Chapter test
1A, 1B, 3A, 3B	Where Do Volcanoes Occur, and How Are They Classified	Resource book B82-B93, see materials list p.82a	(1) written assessment p 56 in Assessment Guide, (2) Chapter test
1A, 1B, 3B	How Do Volcanic Eruptions Affect Earth	Resource book B94-B99, see materials list p.82a	(1) written assessment p 57 in Assessment Guide, (2) chapter test
1A, 1B, 3A, 3B	In what other places can volcanoes occur	Resource book B100- B111, see materials list p.82a	(1) written assessment p 58 in Assessment Guide, (2) chapter test

**Unit: Nature of Matter****Time: 5 weeks**

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation</b>
1A, 1B, 4B	How Can You Describe Matter	Resource book C4-C15, see materials list p.4a	(1) written assessment p 69 in Assessment Guide, (2) chapter test
1A, 1B, 4B	What Makes Up Matter	Resource book C16-C21, see materials list p.4a	(1) written assessment p 70 in Assessment Guide, (2) Chapter test
1A, 1B, 4B	How Does Energy Affect Matter	Resource book C22-C29, see materials list p.4a	(1) written assessment p 71 in Assessment Guide, (2) Chapter test
1A, 1B, 4B	How Can Matter Be Classified	Resource book C30-C43, see materials list p.30a	(1) written assessment p 74 in Assessment Guide, (2) chapter test
1A, 1B, 4B	What is a Mixture	Resource book C44-C51, see materials list p.30a	(1) written assessment p 75 in Assessment Guide, (2) Chapter test
1A, 1B, 4B	What are Liquid Mixtures Like	Resource book C52-C61, see materials list p.30a	(1) written assessment p 76 in Assessment Guide, (2) Chapter test
1A, 1B, 4B	How Can Matter Change	Resource book C62-C77, see materials list p.(TE)	(1) written assessment p 79 in Assessment Guide, (2) chapter test
1A, 1B, 4B	What are Acids and Bases	Resource book C78-C85, see materials list p.(TE)	(1) written assessment p 80 in Assessment Guide, (2) chapter test
1A, 1B, 4B	What Do Chemist Do	Resource book C86-C95, see materials list p.(TE)	(1) written assessment p 81 in Assessment Guide, (2) chapter test

**Unit: Continuity of Life****Time: 5 weeks**

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation</b>
1A, 1B, 2A, 2B	What is Asexual Reproduction	Resource book D4-D17, see materials list p.4a	(1) written assessment p 92 in Assessment Guide, (2) chapter test
1A, 1B, 2A, 2B	What is Sexual Reproduction	Resource book D18-D27, see materials list p.4a	(1) written assessment p 93 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B	What are Inherited Traits	Resource book D28-D37, see materials list p.28a	(1) written assessment p 96 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B	How are Traits Inherited	Resource book D38-D49, see materials list p.28a	(1) written assessment p 97 in Assessment Guide, (2) chapter test
1A, 1B, 2A, 2B	What Do Fossils Tell Us About Life – Past and Present	Resource book D50-D63, see materials list p.50a	(1) written assessment p 100 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B	What Evidence Do Scientists Have that Species Change Over Time	Resource book D64-D71, see materials list p.50a	(1) written assessment p 101 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B	How Do Changes in Species Occur	Resource book D72-D79, see materials list p.50a	(1) written assessment p 102 in Assessment Guide, (2) chapter test

## **Unit: Oceanography**

**Time: 2 weeks**

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation</b>
1A, 1B, 3A, 3B	What Causes Ocean Currents	Resource book E52-E61, see materials list p.50a	(1) written assessment p 122 in Assessment Guide, (2) Chapter test
1A, 1B, 3A, 3B	What Causes Ocean Waves	Resource book E62-E67, see materials list p.50a	(1) written assessment p 123 in Assessment Guide, (2) Chapter test
1A, 1B, 3A, 3B	What Causes Tides	Resource book E68-E73, see materials list p.50a	(1) written assessment p 124 in Assessment Guide, (2) chapter test
1A, 1B, 3B	What Resources Can the Oceans Provide	Resource book E74-E87, see materials list p.74a	(1) written assessment p 127 in Assessment Guide, (2) Chapter test
1A, 1B, 3A, 3B	How Does Pollution Affect the Oceans and Their Resources	Resource book E88-E95, see materials list p.74a	(1) written assessment p 128 in Assessment Guide, (2) Chapter test

## **Unit: Forces and Motion**

**Time: 5 weeks**

<b>Standards/ Benchmarks</b>	<b>Activities</b>	<b>Materials</b>	<b>Evaluation</b>
1A, 1B, 3A	How do you Describe Motion	Resource book F4-F11, see materials list p.4a	(1) written assessment p 139 in Assessment Guide, (2) chapter test
1A, 1B, 4A	How do you Measure Speed	Resource book F12-F17, see materials list p.4a	(1) written assessment p 140 in Assessment Guide, (2) Chapter test
1A, 1B, 4A, 4B	How do you Describe Changes in Motion	Resource book F18-F27, see materials list p.4a	(1) written assessment p 141 in Assessment Guide, (2) Chapter test
1A, 1B, 4A	How Can the Forces of Gravity be measured	Resource book F28-F35, see materials list p.28a	(1) written assessment p 144 in Assessment Guide, (2) chapter test
1A, 1B, 4A	Do All Objects Fall at the Same Rate	Resource book F36-F41, see materials list p.28a	(1) written assessment p 145 in Assessment Guide, (2) chapter test
1A, 1B, 4A	How Does Air Change the Rate at Which an Object Falls	Resource book F42-F51, see materials list p.28a	(1) written assessment p 146 in Assessment Guide, (2) Chapter test
1A, 1B, 4A	How are Objects at Rest and Objects in Motion Alike	Resource book F52-F61, see materials list p.52a	(1) written assessment p 144 in Assessment Guide, (2) Chapter test
1A, 1B, 4A	How Do Forces Affect Motion	Resource book F62-F69, see materials list p.52a	(1) written assessment p 150 in Assessment Guide, (2) chapter test
1A, 1B, 4A	How Does Friction Affect the Motion of Objects	Resource book F70-F77, see materials list p.52a	(1) written assessment p 151 in Assessment Guide, (2) Chapter test
1A, 1B, 4A	What Property Do All Moving Objects Share	Resource book F78-F95, see materials list p.78a	(1) written assessment p 154 in Assessment Guide, (2) Chapter test
1A, 1B, 4A	How Do Actions Cause Reactions	Resource book F96-F103, see materials list p.78a	(1) written assessment p 155 in Assessment Guide, (2) Chapter test
1A, 1B, 4A	How are Action-Reaction Forces Used	Resource book F104-F113, see materials list p.104a	(1) written assessment p 156 in Assessment Guide, (2) Chapter test
1A, 1B, 4A	How Do Heavy Things Fly	Resource book F104-F113, see materials list p.104a	(1) written assessment p 159 in Assessment Guide, (2) chapter test
1A, 1B, 4A	How Do Rockets Use Action Reaction Forces	Resource book F114-F119, see materials list p.104a	(1) written assessment p 160 in Assessment Guide, (2) Chapter test
1A, 1B, 4A	How Do Things Float	Resource book F120-F127, see materials list p.74a	(1) written assessment p 161 in Assessment Guide, (2) Chapter test

**Unit: Growing Up Healthy****Time: 8 weeks**

Standards/ Benchmarks	Activities	Materials	Evaluation
1A, 1B, 2A, 2B	How are Traits Passed on During Reproduction	Resource book G4-G17, see materials list p.4a	(1) written assessment p 172 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B	What are the Stages of Human Growth	Resource book G18-G27, see materials list p.4a	(1) written assessment p 173 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B, 2C	How Does Your Body Protect Yourself from Disease	Resource book G30-G37, see materials list p.28a	(1) written assessment p 176 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B, 2C	What are some Challenges to the Immune System	Resource book G38-G47, see materials list p.28a	(1) written assessment p 177 in Assessment Guide, (2) chapter test
1A, 1B, 2A, 2B, 2C	What are some Health Risk	Resource book G50-G55, see materials list p.48a	(1) written assessment p 180 in Assessment Guide, (2) Chapter test
1A, 1B, 2A, 2B, 2C	What can you Make Healthful Choices	Resource book G56-G63, see materials list p.48a	(1) written assessment p 181 in Assessment Guide, (2) Chapter Test