

School Enrichment Offerings
2004 DPI Standard Course of Study

2nd Grade – Bug Out

Competency goal 1: The learner will conduct investigations and build an understanding of animal life cycles

- 1.01 Describe the life cycle of an animal including
 - Birth
 - Developing into an adult
 - Reproducing
 - Aging and Death
- 1.02 Observe that insects need food, air, and space to grow
- 1.03 Observe the different stages of an insect life cycle
- 1.04 Compare and contrast life cycles of other animals such as mealworms, ladybugs, crickets, guppies or frogs

2nd Grade - Embryology

Competency goal 1: The learner will conduct investigations and build an understanding of animal life cycle

- 1.01 Describe the life cycle of an animal including
 - Birth
 - Developing into an adult
 - Reproducing
 - Aging and Death

3rd Grade – Soil Solutions

Competency goal 1: The learner will conduct investigations and build an understanding of plant growth and adaptations

- 1.01 Observe and measure how the quantities of nutrients, light, and water in the Environment affect plant growth
- 1.02 Observe and describe how environmental conditions determine how well plants survive and grow in a particular environment
- 1.03 Investigate and describe how plants pass through distinct stages in their life cycle including growth, survival, and reproduction
- 1.04 Explain why the number of seeds a plant produces depends on variables such as light, water, nutrients, and pollination
- 1.05 Observe and discuss how bees pollinate flowers
- 1.06 Observe, describe and record properties of germinating seeds

Competency goal 2: The learner will conduct investigations to build understanding of soil properties

- 2.01 Observe and describe the properties of soil color, texture, and capacity to hold water
- 2.02 Investigate and observe that different soils absorb water at different rates
- 2.03 Determine the ability of soil to support the growth of many plants, including those important to our food supply
- 2.04 Identify the basic components of soil: sand, clay, and humus
- 2.05 Determine how composting can be used to recycle discarded plant and animal material
- 2.06 Determine the relationship between heat and decaying plant matter in a compost pile

4th Grade - Entomology

Competency goal 1: The learner will conduct investigations to build an understanding of animal behavior and adaptation

- 1.01 Observe and describe how all living things affect the life of a particular animal including:
 - Other animals
 - Plants
 - Weather
 - Climate
- 1.02 Record and observe how animals of the same kind differ in some of their characteristics and discuss possible advantages and disadvantages of this variation
- 1.03 Observe and discuss how behaviors and body structures help animals survive in a particular habitat
- 1.04 Explain and discuss how humans and other animals can adapt their behavior to live in changing habitats
- 1.05 Recognize that humans can better understand themselves by learning about other animals

4th Grade - Electricity

Competency goal 3: The learner will make observations and conduct investigations to build an understanding of magnetism and electricity

- 3.01 Observe and investigate the pull of magnets on all materials made of iron and the pushes and pulls on other magnets
- 3.02 Describe and demonstrate how magnets can be used to generate electricity
- 3.03 Design and test an electrical circuit as a closed pathway including an energy source, energy conductor and energy receiver
- 3.04 Explain how magnetism is related to electricity
- 3.05 Describe and explain the parts of a light bulb
- 3.06 Describe and identify materials that are conductors and nonconductors of electricity
- 3.07 Observe and investigate that series and parallel circuits have different characteristics
- 3.08 Observe and investigate the ability of electrical circuits to produce light, heat, sound and magnetic effects
- 3.09 Recognize lightning as an electrical discharge and show proper safety behavior when lightning occurs

5th Grade – Eco-Wonders – Exploring Your Environment

Competency goal 1: the learner will conduct investigations to build an understanding of the interdependence of plants and animals

- 1.01 Describe and compare several common ecosystems (communities of organisms) and their interactions with the environment
- 1.02 Identify and analyze the functions of organisms within the population of the Ecosystem
 - Producer
 - Consumer
 - Decomposer
- 1.03 Explain why an ecosystem can support a variety of organisms

- 1.04 Discuss and determine the role of light, temperature, and soil composition in
In an ecosystems capacity to support life
- 1.05 Explain and evaluate some ways that humans effect ecosystems
 - Habitat reduction due to development
 - Pollutants
 - Increased Nutrients
- 1.06 Determine how materials are recycled in nature

5th Grade – Vermicomposting

Competency goal 1: The learner will conduct investigations to build an understanding of the interdependence of plants and animals

- 1.01 Describe and compare several common ecosystems (communities of organisms and their interaction with the environment)
- 1.02 Identify and analyze the functions of organisms within the population of the ecosystem:
 - Producers
 - Consumers
 - Decomposers
- 1.03 Explain why an ecosystem can support a variety of organisms
- 1.04 Discuss and determine the role of light, temperature, and soil composition in
a ecosystems capacity to support life
- 1.05 Determine the interaction of organisms within an ecosystem
- 1.06 Explain and evaluate some ways that humans effect ecosystems
- 1.07 Determine how materials are recycled in nature

6th Grade –Down to Earth

Competency goal 1: The learner will design and conduct investigations to demonstrate an understanding of scientific inquiry

- 1.01 Identify and create questions and hypotheses that can be answered through
scientific investigations
- 1.02 Develop appropriate experimental procedures for
 - Given questions
 - Student generated questions
- 1.03 Apply safety procedures in the laboratory and in field studies:
 - Recognize potential hazards
 - Manipulate materials and equipment
 - Conduct appropriate procedures
- 1.04 Analyze variables in scientific investigations
 - Identify dependent and independent
 - Use of a control
 - Manipulate
 - Describe relationships between
 - Define operationally
- 1.05 Analyze evidence to
 - Explain observations
 - Make inferences and predictions
 - Develop the relationship between evidence and explanation
- 1.05 Use mathematics to gather, organize, and present quantitative data resulting
from scientific investigations
 - Measurement

- Analysis of data
- Graphing
- Prediction models
- 1.06 Prepare models and/or computer simulations to
 - Test hypotheses
 - Evaluate how data fit
- 1.07 Use oral and written language to
 - Communicate findings
 - Defend conclusions of scientific investigations
- 1.08 Use technologies and information systems to
 - Research
 - Gather and analyze data
 - Visualize data
 - Disseminate findings to others
- 1.09 Analyze and evaluate information from a scientifically literate viewpoint by reading, hearing and/or viewing
 - Scientific text
 - Articles
 - Events in the popular press

Competency Goal 4: The learner will investigate the cycling of matter

- 4.01 Describe the flow of energy and matter in natural systems
 - Energy flows through ecosystems in one direction, from the sun to the producers, consumers and decomposers
 - Matter is transferred from one organism to another and between organisms and their environment.
 - Water, nitrogen, carbon dioxide and oxygen are substances cycled between the living and non-living environments
- 4.02 Evaluate the significant role of decomposers
- 4.03 Examine the evidence that green plants make food
 - Photosynthesis is a process carried on by green plants and other organisms containing chlorophyll
 - During photosynthesis, light energy is converted into stored energy, which the plant, in turn, uses to carry out its life processes
- 4.04 Evaluate the significance of photosynthesis to other organisms
 - The major source of atmospheric oxygen is photosynthesis
 - Carbon dioxide is removed from the atmosphere and oxygen is released during photosynthesis
 - Green plants are producers of food that is used directly or indirectly by consumers
- 4.05 Evaluate designed systems for ability to enable growth of certain plants and Animals

8th Grade – 4-H OTL (On Track Learning)

Competency Goal 1: The learner will design and conduct investigations to demonstrate an understanding of scientific inquiry.

- 1.01 Identify and create questions and hypotheses that can be answered through scientific investigations.
- 1.02 Develop appropriate experimental procedures for given questions.

- 1.03 Apply safety procedures in the lab and in field studies.
- 1.04 Analyze variables in scientific investigations.
- 1.05 Analyze evidence to make inferences and predictions.
- 1.06 Use mathematics to gather, organize and presentation data resulting from scientific investigations.
- 1.07 Prepare models to test hypotheses, evaluate how data fit and make predictions
- 1.08 Use oral and written language to communicate findings, defend conclusions and describe strengths and weaknesses of claims, arguments, and/or data.
- 1.09 Use technologies and information system to research, gather and analyze data, visualize data, disseminate findings.
- 1.10 Analyze and evaluate information from a scientifically literate viewpoints

Competency Goal 2: The learner will demonstrate an understanding of technological design.

- 2.01 Explore evidence that technology has many definitions
- 2.02 Use information systems to identify scientific needs, human needs or problems that are subject to technological solution.
- 2.03 Evaluate technological designs for application of scientific principles, risk and benefits, constraints of design and consistent testing protocols.