

# 5<sup>th</sup> Grade

## Meet the Creatures

### NYS Standard 4 (Science): Living Environment

- ✓ **Key Idea 4:** The continuity of life is sustained through reproduction and development.
- ✓ **Key Idea 5:** Organisms maintain a dynamic equilibrium that sustains life.

### NYS Standard 1 (Analysis, Inquiry, and Design): Mathematical Analysis (MA)

- ✓ **Key Idea 1:** Abstraction and symbolic representation are used to communicate mathematically

### NYS Standard 1 (Analysis, Inquiry, and Design): Scientific Inquiry (SI)

- ✓ **Key Idea 1:** The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.
- ✓ **Key Idea 2:** Beyond the use of reasoning and consensus, scientific inquiry involves the testing of proposed explanations involving the use of conventional techniques and procedures and usually requiring considerable ingenuity.
- ✓ **Key Idea 3:** The observations made while testing proposed explanations, when analyzed using conventional and invented methods, provide new insights into phenomena.

Major Understandings	Learning Experience/Objectives	Supporting Terms
<p><i>4.3c Various body structures and functions change as an organism goes through its life cycle.</i></p> <p><i>4.3d Patterns of development vary among animals. In some species the young resemble the adult, while in others they do not. Some insects and amphibians undergo metamorphosis they mature.</i></p> <p><i>4.3f As an individual organism ages, various body structures and functions change.</i></p> <p><i>5.1g The survival of an organism depends on its ability to sense and respond to its external environment.</i></p>	<p><b>Care of Mealworms:</b> Students will prepare a mealworm culture and discuss the humane treatment of mealworms.</p> <p><b>Meet the Creatures:</b> Students will observe and identify the body parts of the mealworm and explain their function.</p> <p><b>Life Cycle of the Grain Beetle:</b> Students will identify the stages of the life cycle of the grain beetles and explain the importance of each stage.</p> <p><b>Mazes and Mealworms:</b> Students will construct a maze, observe a mealworm's behavior in the maze, and formulate a hypothesis as to how it senses where to move.</p>	<p>humane, care, handle, adopt, segment, antennae, skeleton, magnify, observe, thorax, abdomen, metamorphosis, larva, larvae, pupa, pupae, population, maze, hypothesis, accurate, centimeters,</p>
<p><i>M1.1a Identify independent and dependent variables.</i></p> <p><i>S1.2a Independently formulate a hypothesis.</i></p> <p><i>S2.2b Design scientific investigations (e.g., observing, describing, and comparing; collecting samples; seeking more information, conducting a controlled experiment; discovering new objects or phenomena; making models)</i></p> <p><i>S2.2c Design a simple controlled experiment.</i></p> <p><i>S2.2d Identify independent variables (manipulated), dependent variables (responding), and constants in a simple controlled experiment.</i></p> <p><i>S3.1a Organize results, using appropriate graphs, diagrams, data tables, and other models to show relationships.</i></p> <p><i>S3.2a Accurately describe the procedures used and the data gathered.</i></p> <p><i>S3.2d Formulate and defend explanations and conclusions as they relate to scientific phenomena.</i></p> <p><i>S3.2g Suggest improvements and recommendations for further studying.</i></p>	<p><b>Writing Experiments:</b> Students will demonstrate their understandings of the types of variables in an experiment by identifying the variable in sample scenarios and explaining their importance.</p> <p><b>Mealworm Color Preference:</b> Students will identify the variables and constants for an experiment concerning color preference of their mealworms and develop title and hypothesis using the variables. Students will conduct an experiment and gather and analyze data from the results to formulate a conclusion.</p> <p><b>Backing Up:</b> Students will identify the variables, constants, control, title and hypothesis for an experiment that helps identify if the mealworm has a sense of smell.</p> <p><b>Procedures:</b> Students will develop a procedure for an experiment.</p> <p><b>Writing Your Own Experiments:</b> Students will write a new experiment by changing one of the variables/constants in a previously conducted experiment.</p>	<p>variables, independent variable, dependent variable, fair test, constant, results, conclusion, hypothesis, data, prediction, repeated trials, control, ammonia, procedure, results,</p>

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