

6th Grade Science Syllabus

Harding Middle School 2017- 2018

Contacts:

Feel free at any point in time to contact us at our email below on questions, comments, or concerns you may have! The best time to contact us during day is 7:00-7:20am, (M, T, TH, F) 12:05-12:50pm, (W) 11:45-12:15 and 2: 45-3:15. We can be reached at (515) 242-8445.

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Homework:

Students will be receiving one homework assignment per week. This will go home on Tuesday and be due on Friday. Homework is a valuable tool for both students and teachers. It allows students to practice and revisit concepts that have already been covered in the classroom and give teachers valuable information on what concepts need to be retaught. Please remind your child to do their homework each week!

Course/Unit Overview:

There are three major units in this year's 6th grade curriculum . Below is a more detailed description of the topics and goals of each unit. Students earn scores (0-4) based on their understanding for individual topics. At the end of the unit, all the topic scores come together to give an accurate unit score. You will find a link to each of the topic's scales to see exactly what the students will be learning and how their understanding is scored. Links to scales can also be accessed online at <http://science.dmschools.org/middle-school.html>.

Unit 1: Matter and Its Interactions (11 weeks)

Topic: Temperature and Particle Movement

Students will develop a model to show how thermal energy effects the movement of matter.

Topic: Atomic Composition

Students will develop a model to describe the states of matter and how atoms come together to form substances.

Topic: Chemical Reactions

Students will interpret patterns in data to determine if a chemical reaction has occurred.

Topic: Conservation of Matter

Students will develop a model to describe what conservation of matter is and how atoms are affected during a chemical reaction.

Topic: Thermal Energy

Students will use the engineering design process to construct and test a device the tracks the flow of thermal energy.



Unit 2 Part 1: Earth's Systems & Earth and Human Activity (7 weeks)

Topic: Earth's Flow of Materials

Students will develop a model to describe the flow of energy and the circular movement of matter in the Earth's interior and on it's surface.

Topic: Plate Motions

Students will provide evidence of past plate movement from patterns in data involving fossils, rocks, continental shapes and sea floor.

Topic: Shaping of Earth's Crust

Students will construct an explanation of how earth's processes like earthquakes, tsunamis, and landslides as well as erosion and plate tectonics can change the earth over time.

Unit 2 Part 2: Earth's Systems & Earth and Human Activity (6 weeks)

Topic: Distribution of Natural Resources

Student will construct an explanation of how earth's resources are the result of current and past geological processes.

Topic: Living With Natural Hazards

Students will analyze and interpret patterns in data to predict future natural disasters and to propose solutions to lessen the effects of these disasters hazards.

Unit 3:

Topic: Cell Theory

Students will conduct an investigation to provide evidence that living things are made of cells. Students will develop and use a model to describe the function of a cell as a whole, and how parts of cells contribute to how it works.

Topic: Body Organization

Students will use evidence to show how the body is organized into different systems made up of groups of cells.

Topic: Stimulus/Response

Students will develop an explanation for how the body's nervous system responds to stimuli.



Topic: Heredity

Students will develop and use a model to show how asexual reproduction result in offspring with identical genetic information.

Students will develop and use a model to show how sexual reproduction results in offspring with varying genetic information.

Safety:

Science gives students an opportunity to explore and experiments with science concepts. Being a science class, there are safety protocols that students must follow to ensure every student has the ability to learn in a safe environment. The next page is the safety contract your student will be learning and expected to follow during class.

Science Safety Contract

PURPOSE

Science is a hands-on laboratory class. However, science activities may have potential hazards. We will use some equipment that may be dangerous if not handled properly. Safety in the science classroom is an important part of the scientific process. To ensure a safe classroom, a list of rules has been developed and is called the Science Safety Contract. These rules must be followed at all times. Additional safety instructions will be given for each activity. No science student will be allowed to participate in science activities until this contract has been signed by the student.

SAFETY RULES

1. Conduct yourself in a responsible manner at all times in the science room. Horseplay, practical jokes, and pranks will not be tolerated.
2. Follow all written and verbal instructions carefully. Ask your teacher questions if you do not understand the instructions.
3. Do not touch any equipment, supplies, animals, or other materials in the science room without permission from the teacher.
4. Perform only authorized and approved experiments. Do not conduct any experiments when the teacher is out of the room.
5. Never eat, drink, chew gum, or taste anything-WITHOUT PERMISSION in the science room.
6. Keep hands away from face, eyes, and mouth while using science materials or when working with either chemicals or animals. Wash your hands with soap and water before leaving the science room.
7. Wear safety glasses or goggles when instructed. Never remove safety glasses or goggles during an experiment. There will be no exceptions to this rule!
8. Keep your work area and the science room neat and clean. Bring only your laboratory instructions, worksheets, and writing instruments to the work area.
9. Clean all work areas and equipment at the end of the experiment. Return all equipment clean and in working order to the proper storage area.
10. Follow your teacher's instructions to dispose of any waste materials generated in an experiment.
11. Report any accident (fire, spill, breakage, etc.), injury (cut, burn, etc.), or hazardous condition (broken equipment, etc.) to the teacher immediately.
12. Consider all chemicals used in the science room to be dangerous. Do not touch or smell any chemicals unless specifically instructed to do so.
13. Always carry a microscope with both hands. Hold the arm with one hand; place the other hand under the base.
14. Treat all preserved specimens and dissecting supplies with care and respect.
 - a. Do not remove preserved specimens from the science room.
 - b. Use scalpels, scissors, and other sharp instruments only as instructed.
 - c. Never cut any material towards you - always cut away from your body.
 - d. Report any cut or scratch from sharp instruments to the teacher immediately.
15. Never open storage cabinets without permission from the teacher.
16. Do not remove chemicals, equipment, or supplies from the science room without permission from the teacher.
17. Handle all glassware with care. Never pick up hot or broken glassware with your bare hands.
18. Use extreme caution when using a hot plate.
19. Dress properly—long hair must be tied back, no dangling jewelry, and no loose or baggy clothing.
20. Learn where the safety equipment is located and how to use it. Know where the exits are located and what to do in case of an emergency or fire drill.

AGREEMENT

I, _____, (student's name) have read and understand each of the above safety rules set forth in this contract. I agree to follow them to ensure not only my own safety but also the safety of others in the science classroom or laboratory. I also agree to follow the general rules of appropriate behavior for a classroom at all times to avoid accidents and to provide a safe learning environment for everyone. I understand that if I do not follow all the rules and safety precautions, I will not be allowed to participate in science activities.

Student Signature: _____ Date: _____