1st Grade Physical Science Curriculum Map

Seventeen experiments relating to four areas of physical science. In each section, are teacher notes to provide guidance with the learning intention, the success criteria, materials needed, a lesson outline, as well as providing some insight on what results to expect when the experiments are conducted. Suggestions for differentiation are also included so that all students can be successful in the learning environment.

The experiments in this book, relate to four aspects of physical science:

1. **Materials, Objects, and Building Things**
2. **Energy In Our Lives**
3. **Force and Motion**
4. **Creating Color**

17 Experiments:

Experiment One: Materials Are Everywhere

Students will learn about the physical properties of matter and make connections between material properties and function.

Experiment Two: Natural Or Man-Made?

Students will learn about physical properties of natural and man-made materials and make connections between material properties and function.

Experiment Three: Waterproof Or Waterlogged?

Students will learn about the properties of various materials, in particular, the materials that absorb water and the best materials for repelling water.

Experiment Four: Use Your Senses

Students will learn about the function or purpose of various objects and structures by gathering information through their senses.

Experiment Five: Let's Go Green!

Students will learn about minimizing waste by recycling, reusing, and reducing materials in order to help the environment.

Experiment Six: Constructing A Birdfeeder

Students will learn using problem solving skills and knowledge acquired from previous investigations to design and build a birdfeeder.

Experiment Seven: Sources Of Energy

Students will learn that energy is needed to make things happen, and there are different kinds of energy.

Experiment Eight: Energy From The Sun

Students will learn that the sun provides light and heat energy.

Experiment Nine: Food Energy

Students will learn that food is a source of energy for people and other living things.

Experiment Ten: Energy Use And Conservation

Students will learn that energy resources are limited and we must reduce our energy consumption.

Experiment Eleven: Force And Motion

Students will learn that different forces can change the speed or direction of a moving object.

Experiment Twelve: The Friction Effect!

Students will learn about the effect friction can have on the movement of an object over different surfaces.

Experiment Thirteen: Magnetic Force

Students will learn that magnets attract certain materials.

Experiment Fourteen: Let's Get Magnetized!

Students will learn that certain materials can be temporarily or permanently magnetized.

Experiment Fifteen: Exploring The Poles

Students will learn that all magnets have a north and a south pole, and that same type poles repel while opposite poles attract.

Experiment Sixteen: Primary And Secondary Colors

Students will learn that red, yellow, and blue are primary colors that can be used to create secondary colors such as orange, green, and purple.

Experiment Seventeen: Let's Get Painting

Students will learn to describe colors and work with different materials to create, modify, and apply color.

Natural Or Man-Made?

Learning Intention:

Students will learn about physical properties of natural and man-made materials and make connections between material properties and function.

Success Criteria:

- identify different types of natural and man-made materials that objects are made from
- investigate what materials some objects in the classroom are made from
- gather, sort, and record information in a list
- make conclusions about the materials used to make objects
- make connections to the environment

Materials Needed:

- small objects made of man-made materials such as plastic, glass, metal, foam, nylon, rubber, paper
- small objects made of natural materials such as wood, wool, leather, cotton, silk, stone
- a copy of "Natural Or Man-Made?" worksheet 1 and 2 for each student
- a copy of "Natural and Man-Made Tic-Tac-Toe Cards" sheet for each student
- a copy of "Material Tic-Tac-Toe Game Board" sheet (one for each pair of students)
- a copy of "Let's Classify" worksheet 3 for each student
- pencils

Procedure:

1. Introduce to students, the different natural material types that objects can be made from by showing examples of different objects that are made of wood, wool, leather, cotton, silk, stone. Also introduce to students the different man-made material types that objects can be made from by showing examples of different objects that are made of plastic, glass, metal, foam, nylon, paper.
2. Give students worksheet 1. Instruct them to draw a picture of a natural material and explain what object that material could be used to make. Then ask students to list five items in their classroom that are made using a natural material. Students can follow the same direction in regards to man-made materials, using worksheet 2.
3. Give students worksheet 3. Instruct them to identify and sort natural and man-made objects by drawing a line from the given pictures of objects to the correct source of origin (mountain = natural, factory = man-made).
4. Give two sets of tic-tac-toe cards and one copy of the tic-tac-toe game board to each pair of students. Explain the game by reading through the instructions with the students.

Differentiation:

Slower learners may benefit by focusing on making a list of only two different types of natural materials (e.g., wood, cotton), and two different types of man-made materials (e.g., metal, plastic), and locating objects in the classroom that are made of only those determined materials.

For enrichment, faster learners can also identify objects made of natural and man-made materials that are found not only in their classrooms, but in their homes too.

Worksheet 1

Name: _____

Natural Or Man-Made?

Some materials are found in nature. For example, stone is found in nature. Other kinds of natural materials are ones found in plants or animals. For example, wool is sheared off a sheep.

Draw a picture of another material found in nature.

What object could your natural material be used to make?

_____

_____

List five objects in your classroom that are made using a natural material.

- ❍ _____
- ❍ _____
- ❍ _____
- ❍ _____
- ❍ _____

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Worksheet 2

Name: _____

Some materials are made by humans. They are called man-made materials. These materials are shaped by humans to make an object. For example, plastic is a man-made material.

Draw a picture of another material that is man-made.

What object could your man-made material be used to make?

_____

_____

List five objects in your classroom that are made using a man-made material.

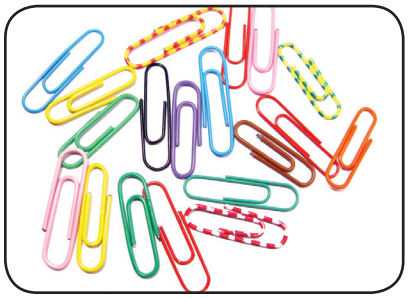
- _____
- _____
- _____
- _____
- _____

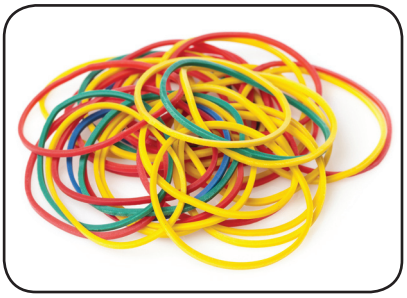
Worksheet 3

Name: _____

Let's Classify

Classify the objects below as natural or as man-made by sorting them. If the object is natural, draw a line from it to the mountain. If the object is man-made, draw a line from it to the factory.





Natural

Man-Made

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Natural And Man-Made Tic-Tac-Toe Cards

Instructions: Photocopy cards onto stiff paper. Make two sets of cards per pair of students. Laminate for longer life. Students decide beforehand who is "man-made" and who is "natural." The man-made student is given five factory cards and the natural student is given five mountain cards. Students sit opposite each other and take turns drawing a material card. If the material card shown is man-made, the student with the factory cards places one on the tic-tac-toe game board, on a square of their choice. If the material is natural, the student with the mountain cards places a mountain card on a square of their choice. The game ends when one player has three of their cards in a row.

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Name: _____

Material Tic-Tac-Toe

Do you know which materials are natural and which are man-made?

MATERIALS NEEDED

- five "factory" cards
- five "mountain" cards
- a pile of "materials" cards
- a tic-tac-toe game board
- a partner

WHAT TO DO

1. One person takes five factory cards, the other person takes five mountain cards.
2. Turn over a materials card from the pile. If the object on the card is a man-made material, the player with the factory cards can put a factory on any square on the game board. If it is a natural material, the player with the mountain cards can put a mountain on any square.
3. The first player with three of their cards in a row wins the game!

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