



monarch

Curriculum Catalog

Science 400

Table of Contents

| | |
|---|---|
| UNIT 1: PLANTS..... | 1 |
| UNIT 2: ANIMALS..... | 1 |
| UNIT 3: MAN, AND HIS ENVIRONMENT | 2 |
| UNIT 4: MACHINES..... | 3 |
| UNIT 5: ELECTRICITY AND MAGNETISM | 4 |
| UNIT 6: WATER AND MATTER..... | 6 |
| UNIT 7: WEATHER..... | 7 |
| UNIT 8: OUR SOLAR SYSTEM AND THE UNIVERSE..... | 7 |
| UNIT 9: THE PLANET EARTH | 8 |
| UNIT 10: UNDERSTANDING GOD’S WONDERFUL CREATION | 9 |

UNIT 1: PLANTS

| Assignment | Summary | Video Demo | Supplies |
|----------------------------------|--|------------|---|
| *Project: Things Made of Wood | In this project, you will think about other objects that are made of wood. | No | <ul style="list-style-type: none"> things made of wood |
| *Report: Read and Write | In this report, you will learn about a fruit from another country. | No | <ul style="list-style-type: none"> research resources |
| Report: Flowers as State Symbols | In this report, you will learn about state flowers. | No | <ul style="list-style-type: none"> research resources |
| *Report: Flower Paragraph | In this report, you will learn more about state flowers. | No | <ul style="list-style-type: none"> research resources |
| Experiment: Celery | In this experiment, you will learn why these strings are important. | Yes | <ul style="list-style-type: none"> fresh celery stalk (stem) with leaves on top a glass of water a magnifying glass red ink or food coloring a knife |
| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | N/A |

UNIT 2: ANIMALS

| Assignment | Summary | Video Demo | Supplies |
|-----------------------------|--|------------|---|
| Report: Types of Whales | In this report, you will learn more about three types of whales. | No | <ul style="list-style-type: none"> research resources |
| *Report: Writing about Fish | In this report, you will learn more about fish characteristics and behavior. | No | <ul style="list-style-type: none"> research resources |
| *Project: Observing Fish | In this project, you will learn more about how fish swim. | No | <ul style="list-style-type: none"> fish in an aquarium |
| Report: Honeybee Habits | In this report, you will learn more about the work and behavior of bees. | No | <ul style="list-style-type: none"> research resources |
| *Project: Animal Scrapbook | In this project, you will practice sorting animals into different groups. | No | <ul style="list-style-type: none"> pictures of animals construction paper glue scissors notebook or folder |
| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | N/A |

UNIT 3: MAN, AND HIS ENVIRONMENT

| Assignment | Summary | Video Demo | Supplies |
|-----------------------------------|--|------------|---|
| *Project: Your Environment | In this project, you will take a closer look at your environment. | No | <ul style="list-style-type: none"> • drawing paper |
| *Project: Populations | In this project, you will take a closer look at the populations in your environment. | No | <ul style="list-style-type: none"> • paper |
| *Project: Make a Pyramid | In this project, you will create a population pyramid. | No | <ul style="list-style-type: none"> • access to a printer • paper |
| *Report: Rabbits in Australia | In this report, you will create a population pyramid. | No | <ul style="list-style-type: none"> • research resources |
| *Experiment: Still Water Life | In this experiment, you will create a population pyramid. | Yes | <ul style="list-style-type: none"> • one or more kitchen strainers • at least 5 wide-mouthed jars • hand magnifying glass • cloth or netting • string • microscope (if available) |
| Project: Human Communities | Write about the needs and structure of your community | No | N/A |
| *Report: Read and Write | In this report you will learn about the role of a honeybee in a community. | No | <ul style="list-style-type: none"> • research resources |
| *Project: Terrarium or Diorama | In this project, you will make your own desert community. | No | <ul style="list-style-type: none"> • a clean, empty two-liter plastic bottle (with the top cut off) • one cup of gravel • one-half cup of broken pieces charcoal • two cups of sand • a handful of Spanish moss or sphagnum • one or two cups of potting soil • desert plants (Like cactus) • water |
| *Report: Forest Community | In this report, you will learn more about forest communities around the world. | No | <ul style="list-style-type: none"> • research resources |
| *Project: Ask an Expert | In this project, you will learn more about forest communities around the world. | No | <ul style="list-style-type: none"> • contact with the agricultural agent in your county |
| *Report: Endangered Species | In this report, you will learn about one endangered animal. | No | <ul style="list-style-type: none"> • research resources |
| *Report: How To Save Energy | In this report, you will learn more about renewable energy and ways to conserve it. | No | <ul style="list-style-type: none"> • research resources |

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| *Report: Special Treasures | In this report, you will learn more about a United States National park. | No | <ul style="list-style-type: none"> research resources |
| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | N/A |

UNIT 4: MACHINES

| Assignment | Summary | Video Demo | Supplies |
|-----------------------------|---|------------|--|
| *Report: Galileo | In this report, you will learn more about this important man. | No | <ul style="list-style-type: none"> research resources |
| *Experiment: Gravity | In this experiment, you are going to examine how air friction affects gravity | No | <ul style="list-style-type: none"> two or three pieces of newspaper a marble a piece of paper a chair a partner |
| Experiment: Lever | In this experiment, You will explain how a lever works | Online Lab | <ul style="list-style-type: none"> 30 pennies a sturdy wooden ruler a large binder clip 2 small clear cups, one labeled "Load", one labeled "Effort" tape |
| *Experiment: Seesaw | In this experiment, you are going to examine how fulcrum location affects amount of work needed for a lever | No | <ul style="list-style-type: none"> a seesaw a friend who weighs about the same as you |
| *Experiment: Inclined Plane | In this experiment, you are going to compare work with and without use of a simple machine | Yes | <ul style="list-style-type: none"> four textbooks (3 inches thick) a toy truck or car a spring scale a board about 1 meter long (should be wider than the toy truck) |
| *Experiment: Screw and Nail | In this experiment, you are going to compare the strength of a nail and a screw | Yes | <ul style="list-style-type: none"> two thin pieces of wood (less than 1 cm thick) a hammer |
| *Experiment: Pulleys | In this experiment, you are going to compare the mechanical advantage of two pulley types | Yes | <ul style="list-style-type: none"> two pulleys a light rope about two meters long scissors 500-gram weight a spring scale a meter stick two ring stands |

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| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | N/A |
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UNIT 5: ELECTRICITY AND MAGNETISM

| Assignment | Summary | Video Demo | Supplies |
|--------------------------------|--|------------|---|
| Report: Thomas Edison | In this report, you will learn more about Thomas Edison. | No | <ul style="list-style-type: none"> research resources |
| Experiment: Static Electricity | In this experiment, you will "charge" objects and create static electricity. | Online Lab | <ul style="list-style-type: none"> string two balloons piece of woolen cloth a wool sweater |
| Project: Conductors | In this project, you will classify items as conductors or nonconductors | No | <ul style="list-style-type: none"> metal spoon screwdriver handle screwdriver blade chalkboard eraser glass dish tin can rubber ball paper paper clip wood |
| *Experiment: Wet Cell | In this experiment, you will make your own electric cell. | Yes | <ul style="list-style-type: none"> three strips each of copper and zinc (15 x 3 cm) four lengths of covered copper wire, each about 50 cm long. a glass of vinegar a juicy lemon a galvanometer a sharp knife |
| *Project: Electric Objects | In this project you will take a closer look at the electrical objects in your home. | No | <ul style="list-style-type: none"> various object around your house |
| Project: Fuses In Use | In this project, you will study and write about car fuses. | No | <ul style="list-style-type: none"> access to a car |
| Experiment: Use a Magnet | In this experiment you will test different objects to see which ones are attracted to a magnet and which ones are not. | No | <ul style="list-style-type: none"> one magnet one small piece of paper two paper clips five pens one small plastic cup one penny two rubber bands one nickel one tin can One piece of chalk Two sewing needles |

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| Experiment: Make A Magnet | In this experiment you will turn a nail into a magnet. | Yes | <ul style="list-style-type: none"> • some iron filings • a large iron nail • a bar magnet |
| *Experiment: Magnet Poles | In this experiment you will use iron fillings to "see" the magnetic field around the poles. | Yes | <ul style="list-style-type: none"> • bar magnet • iron filings • one sheet of paper |
| *Experiment: Testing A Magnet | In this experiment you will use a compass to find the north pole of a magnet. | Yes | <ul style="list-style-type: none"> • a compass • about 40 cm of heavy string • a bar magnet • a stack of books • meter stick |

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| *Experiment: Generate Electricity | In this experiment you will use a magnet to make an electrical current. | Yes | <ul style="list-style-type: none"> a galvanometer a mailing tube or the cardboard tube from a roll of paper towels a bar magnet bell wire |
| *Experiment: Electromagnet | In this experiment you will use electricity to turn a nail into an electromagnet. | Yes | <ul style="list-style-type: none"> a large iron nail a knife switch thin copper wire electrical tape small metal objects like paper clips a 6 or 12-volt lantern battery(drycell) |
| *Report: Explorers | In this report you will learn about the people who discovered these areas. | No | <ul style="list-style-type: none"> research resources |
| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | N/A |

UNIT 6: WATER AND MATTER

| Assignment | Summary | Video Demo | Supplies |
|--------------------------|--|------------|---|
| Experiment: Ice | In this experiment you will test what you know about this property of ice. | Yes | <ul style="list-style-type: none"> a plastic bowl large enough to hold 3 or 4 cups of water 2 or 3 ice cubes cold water |
| *Experiment: Ice Volume | In this experiment you will test what you know about the volume of ice. | Yes | <ul style="list-style-type: none"> a measuring cup or small beaker two mL of water a piece of tape |
| *Experiment: Potato | In this experiment you will measure the water in a potato. | Yes | <ul style="list-style-type: none"> 1 raw potato 1 scale (to weigh ounces or grams) 1 heavy-duty plastic knife a paper towel |
| *Experiment: Forming Dew | In this experiment you will see water change state. | Yes | <ul style="list-style-type: none"> 1 small tin can, fruit juice type (be sure there are no sharp edges) enough ice to fill the can |
| Experiment: Solubility | In this experiment you will test the solubility of salt, sugar, sand, and oil. | Yes | <ul style="list-style-type: none"> 4 plastic glasses 1 tsp of salt 1 tsp of sugar 1 tsp of sand 1 tsp of salad or cooking oil plastic spoon |

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| *Experiment: Molecules | In this experiment you will smell different odors. | No | <ul style="list-style-type: none"> 1 bottle of strong-smelling perfume household ammonia A room about 12 x 12 in dimensions. | <ul style="list-style-type: none"> An adult to help perform experiment. A clock with a second hand. A couple of sheets of paper. |
| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | | N/A |

UNIT 7: WEATHER

| Assignment | Summary | Video Demo | Supplies | |
|----------------------------|--|------------|--|-----|
| *Experiment: Air and Space | In this experiment you will answer this question. | Yes | <ul style="list-style-type: none"> two small clear plastic cup, one with a hole in the bottom two paper towels tape a large clear container | |
| Experiment: Temperature | In this experiment you will test the heat absorption of different materials. | No | <ul style="list-style-type: none"> sheet of black paper window sunlight shining through the window | |
| Experiment: Pressure | In this experiment you will see the strength of air pressure. | Yes | <ul style="list-style-type: none"> clear drinking glass full of water piece of cardboard large enough to cover the glass a sink or tub to catch the water | |
| *Report: Hurricanes | In this report you will learn more about these dangerous storms. | No | <ul style="list-style-type: none"> research resources | |
| *Project: Thermometers | In this project you will learn more about the two most common thermometers. | No | <ul style="list-style-type: none"> research resources | |
| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | | N/A |

UNIT 8: OUR SOLAR SYSTEM AND THE UNIVERSE

| Assignment | Summary | Video Demo | Supplies |
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| Report: Astronomy Instruments | In this report you will learn more about one type of instrument. | No | <ul style="list-style-type: none"> research resources |

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| *Essay: Astronomy | In this report you will think about an astronomer's most important instrument... their mind. | No | N/A |
| *Essay: Ancient People | In this essay you will write about ancient beliefs. | No | N/A |
| *Report: Isaac Newton | In this report you will learn more about this famous English scientist. | No | <ul style="list-style-type: none"> research resources |
| Experiment: Moon Phases | In this experiment you will use a model to show the moon's phase changes. | No | <ul style="list-style-type: none"> 8 Oreo cookies paper plate |
| *Essay: Astrology | In this essay you will explain why astrology should not be studied. | No | N/A |
| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | N/A |

UNIT 9: THE PLANET EARTH

| Assignment | Summary | Video Demo | Supplies |
|--------------------------|---|------------|--|
| Experiment: Condensation | In this experiment you will watch water vapor change state. | Yes | <ul style="list-style-type: none"> a drinking glass some ice cubes some flavored beverage a clean cloth or tissue |
| *Essay: Psalm 147 | In this essay you will read a Psalm and discuss its meaning. | No | N/A |
| *Experiment: Currents | In this experiment you will use differences in water temperature to create a current. | Yes | <ul style="list-style-type: none"> a clear plastic tub or container a jug full of tap water a spoon blue and red food coloring a small plastic bottle without lid a small funnel an ice cube tray |
| Experiment: Shadows | In this experiment you will see how shadows helped scientists and explorers discover that the earth was not flat. | Yes | <ul style="list-style-type: none"> a ball (3 to 5 inches) a light source |
| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | N/A |

UNIT 10: UNDERSTANDING GOD’S WONDERFUL CREATION

| Assignment | Summary | Video Demo | Supplies |
|------------------------------|--|------------|--|
| Project: Weather Scrapbook | In this project you will review what you know about the forces of weather. | No | <ul style="list-style-type: none"> • magazines • newspaper |
| *Project: Thomas Alva Edison | In this project you will review important facts about Edison. | No | <ul style="list-style-type: none"> • the news story you wrote in unit 5 |
| *Report: Passenger Pigeon | In this report you will learn about an extinct animal called the Passenger Pigeon. | No | <ul style="list-style-type: none"> • research resources |
| *Special Project | Use this Special Project template to create your own assignment for this unit. | N/A | N/A |

* indicates an alternative assignment