

STATE ASSESSMENT

LIFE SCIENCE STRATEGIES

COMMON SCIENCE STANDARDS

Life Science: Know the characteristics, life processes, and interactions of organisms.

Physical Science: Understand natural phenomena associated with non-living objects, including the properties and interactions of matter and energy. Know and apply safety practices.

Earth Science: Understand relationships within and among Earth and space systems from various perspectives.

Inquiry: Demonstrate the ability to question, investigate, and use observations to generate reasonable explanations about our world.

Science and Technology: Apply technological knowledge and skills to design, create, use, and assess products and systems.

Environmental Awareness: Examine interactions between humans and the environment, including the sustainable utilization of resources.

Connections: Link ideas between and across disciplines and to real-life situations using precise communication.

- Project: Research how animals make homes that meet their needs.
- Use tables, graphs, and charts during daily presentations.
- Provide students with opportunities to use a microscope.
- Model responsible care of animals in the classroom.
- Compare and contrast various systems.
- Allow students to role-play the life cycles of different plants and animals.
- Ask, "How do these two things differ?"
- Stress that food web arrows point to the organism that does the eating.

GROW PLANTS!

THE SCIENTIFIC METHOD AT HAND!

Use the fingers on the hand to teach the steps of the scientific method:

1. Ask a question.
2. Gather information.
3. Form an educated guess (hypothesis).
4. Test hypothesis by doing an experiment.
5. Report results.

SCIENCE IS LEARNED THROUGH EXPERIENCE.

SCIENCE GRADE 3

THE HOME CONNECTION

Send parents information about how to increase their child's knowledge of science.

PARENTS, TRY THESE ACTIVITIES WITH YOUR CHILD:

- Spend time with your child. Grow plants. Pet animals. Look at the night sky.
- Talk about the weather: precipitation, temperature, humidity, clouds, wind, etc.
- Visit your child's teachers. Ask questions about projects!
- Ask your child to explain what he or she is learning right now. Praise your child every day.
- Reinforce skills by having your child measure, tell time, read the thermometer, cook with recipes, and use a magnifying glass. Talk about health and safety.
- Put together puzzles. Build models together. Supervise your child taking apart discarded appliances.
- When in the car, talk about distance and directions. Help your child read roadmaps.
- Create collections of rocks, leaves, feathers, and fossils. Talk about patterns in nature.
- At the grocery, point out different fruits and vegetables and different cuts of meat. Weigh produce.
- Visit a pet store, a river, a farm, a garden, a construction site, and a quarry.

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SAFE PRACTICES

PHYSICAL SCIENCE

EARTH SCIENCE

INQUIRY

ENVIRONMENTAL AWARENESS

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STATE ASSESSMENT

EARTH AND SPACE SCIENCE

STRATEGIES

COMMON SCIENCE STANDARDS

- Life Science:** Know the characteristics, life processes, and interactions of organisms.
- Physical Science:** Understand natural phenomena associated with non-living objects, including the properties and interactions of matter and energy. Know and apply safety practices.
- Earth and Space Science:** Understand relationships within and among Earth and space systems from various perspectives.
- Inquiry:** Demonstrate the ability to question, investigate, and use observations to generate reasonable explanations about our world.
- Science and Technology:** Apply technological knowledge and skills to design, create, use, and assess products and systems.
- Environmental Awareness:** Examine interactions between humans and the environment, including the sustainable utilization of resources.
- Connections:** Link ideas between and across disciplines and to real-life situations using precise communication.

- Use a rain gauge to teach mean and median rainfall.
- Make sure students can explain the cause of seasons.
- Current events board: weather-related phenomena.
- Make sure students know the position of planets.
- Display student-made models of rock layers.
- Team up! Build models of the water cycle.
- Team up! Make posters showing forces that alter the Earth's surface.
- Explain rainfall in terms of gravity.

INQUIRY!

THE FORMAT OF THE SCIENTIFIC METHOD

1. Define the problem or question.
2. Research: Look up information about the topic. Use different sources, take notes, and include a bibliography.
3. Hypothesis: Write down exactly what you expect to happen before you try the experiment.
4. Test hypothesis: Perform the experiment. Record observations and measurements.
5. Check hypothesis: Interpret results.
6. Conclusions: Explain what was learned from the experiment. Communicate results using graphs, tables, maps, and charts.

SCIENCE GRADE 6

THE HOME CONNECTION

Send parents information about how to increase their child's knowledge of science.

PARENTS, TRY THESE ACTIVITIES WITH YOUR CHILD:

- Spend time with your child. Grow plants. Find constellations in the night sky. Go hiking and fishing.
- Talk about the weather: precipitation, temperature, humidity, clouds, wind, etc. Visit <http://www.fema.gov/kids/dizarea.htm> and learn about weather disasters.
- Visit your child's teachers. Ask questions about projects and homework.
- Ask your child to explain what he or she is learning right now. Encourage your child daily.
- Reinforce skills by having your child measure, read thermometers, cook with recipes, and work with machines using metric and standard tools. Play games and work puzzles together.
- When in the car, talk about landforms, distance, and directions. Help your child read roadmaps.
- Create collections of bugs, rocks, leaves, feathers, and fossils.
- At the grocery, point out unfamiliar fruits and vegetables and different cuts of meat. Weigh produce.
- Visit a zoo, a beach, a science museum, a wildlife preserve, a machine shop, and a quarry.

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SAFE PRACTICES

MUSICAL SCIENCE

ENVIRONMENTAL AWARENESS

LIFE SCIENCE

SCIENTIFIC INVESTIGATION

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STATE ASSESSMENT BIOLOGY/LIFE SCIENCE STRATEGIES

COMMON SCIENCE STANDARDS

Earth and Space Science: Understand relationships within and among Earth and space systems.

Biology/Life Science: Know the characteristics, life processes, and interactions of organisms.

Physics: Understand matter and energy and how they interact with each other.

Chemistry: Understand properties of matter, interactions, and energy flow. Investigate the nature of chemical changes.

Environmental Science: Examine interactions between humans and the natural environment, including the sustainable utilization of resources.

Scientific Investigation: Demonstrate the ability to question, investigate, and use observations to generate reasonable explanations and to build an evidence-based understanding of our world. Know and apply safety practices.

Science and Technology: Apply technological knowledge and skills to design, create, use, and assess products and systems.

Connections: Link ideas between and across disciplines and to real-life situations using precise communication.

- Team up! Illustrate food concepts: chains, webs, and pyramids.
- Match animals' scientific names to common names.
- Project: Illustrate the functions of organ systems.
- Include examples of regional food webs.
- Students must know locations on maps.
- View Fleming's sample of penicillin! Visit www.fi.edu/pieces/burr/.
- Review Mendelian inheritance.
- Diagram energy flow.
- Visit a fishery.

EXAMINE CELLS!

THE FORMAT OF THE SCIENTIFIC METHOD

1. Define your problem or question.
2. Research: Look up information about the topic. Use different sources, take notes, and include a bibliography.
3. Hypothesis: Write down exactly what you expect to happen before you try the experiment.
4. Design an experiment. Plan how you will test your hypothesis.
5. Test hypothesis: Perform the experiment or study with proper controls. Record observations and measurements.
6. Check hypothesis: Interpret results.
7. Conclusions: Explain what was learned from the experiment. Communicate results using graphs, tables, maps, and charts.

SCIENCE GRADE 9

THE HOME CONNECTION

Send parents and young adults information about how to increase science knowledge.
TIPS FOR YOUNG ADULTS AND PARENTS

- Spend time together landscaping, hiking, fishing, and finding constellations in the night sky.
- Talk about local, national, and global weather conditions.
- Make education important! Parents, visit your teen's teachers. Teens, ask your teacher for help when you are unclear about something. Do homework!
- Parents, ask your teen to explain what he or she is studying right now. Encourage your teen daily.
- Reinforce skills by sewing, cooking with recipes, and working with machines using metric and standard tools together. Play games and work puzzles together.
- When in the car, talk about landforms, distance, and directions. Use roadmaps.
- Look for interesting birds, animals, bugs, rocks, leaves, feathers, and fossils.
- At the grocery, find unusual fruits and vegetables and unfamiliar cuts of meat. Weigh produce.
- Visit a zoo, a beach, a science museum, a wildlife preserve, a machine shop, and a quarry.

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ENVIRONMENTAL SCIENCE

PHYSICS

CHEMISTRY

EARTH AND SPACE SCIENCE

SCIENTIFIC INVESTIGATION

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