

SCIENCE "I CAN" STATEMENTS

Kindergarten

Earth Science

- 1. I can see (observe) the sun in the daytime and the moon at night and sometimes in the day.
- 2. I can explore how plants and animals cause changes to their living space (surroundings).
- 3. I can explore that sometimes change is too fast or too slow for me to see how it happens.
- 4. I can observe and describe the daily weather.
- 5. I can observe and describe seasonal weather changes.

Life Science

- 1. I can explore differences between something that is living and not living.
- 2. I can realize plants and animals may talk in cartoons but not in real life.
- 3. I can explain how plants and animals will grow up to look like its mom or dad.
- 4. I can investigate differences among the same kind of a plant or animal.
- 5. I can describe features of a plant or animal that helps them live in different kinds of places.
- 6. I can investigate the habitats of different kinds of local plants and animals and ways animals need plants to survive in our community.

Physical Science

- 1. I can demonstrate that objects are made of parts.
- 2. I can examine and describe what objects are made of.
- 3. I can describe and sort objects by one or more characteristics.
- 4. I can explore things and make them move in different ways such as straight, zigzag, and up and down.
- 5. I can investigate ways to change how something is moving (push, pull).

Science and Technology

- 1. I can tell the difference between natural and man-made objects.
- 2. I can understand that some materials can be used more than one time.
- 3. I can tell that each tool has its own use.

Scientific Inquiry

- 1 & 2. I can ask "What if?" questions and investigate the answers.
- 3. I can use the correct safety rules when I investigate.
- 4. I can use my five senses to describe things in nature.
- 5. I can draw pictures to describe what I see.
- 6. I can use numbers to count things I collect.
- 7. I can use tools like a magnifier to safely gather information.
- 8. I can use different objects to make my measurements.
- 9. I can make graphs to describe my observations and draw conclusions (information).
- 10. I can use information from other people to add to my observations.

SCIENCE "I CAN" STATEMENTS

Scientific Ways of Knowing (KDG continued)

- 1. I can know that investigations start with questions like "How?" or "What if?"
- 2. I can know people will like my ideas if I give good reasons for them.
- 3. I can treat living things and the environment the correct way (with respect).
- 4. I can show how people use science every day.

SCIENCE "I CAN" STATEMENTS

Grade 1

Earth and Space Sciences

- 1 a. I can identify resources are things that we get from the living and non-living things.
- 1 b. I can identify resources are necessary to meet the needs and wants of people.
- 2. I can explain reducing, reusing, and recycling.
- 3. I can explain that all living things cause change in their environment; the changes can be fast or slow (tree roots breaking through the sidewalk).

Life Sciences

- 1. I can explain that all living things have basic needs which are air, water, food, living space and shelter.
- 2. I can explain that food comes from places other than grocery stores (farm crops, farm animals, oceans, lakes and forests).
- 3. I can explore that humans and other animals have body parts that help to seek, find and take in food when they are hungry (sharp teeth, flat teeth, good nose, and sharp vision).
- 4. I can investigate that animals eat plants and/or other animals for food and may also use plants or other animals for shelter and nesting.
- 5. I can explain that the seasons can influence the health, survival or activities of plants, animals and people.

Physical Sciences

- 1. I can sort objects by the materials they are made of and their physical properties.
- 2. I can investigate that water can change from liquid to solid or solid to liquid.
- 3. I can explore and observe that things can be done to materials to change their properties (heating, freezing, mixing, cutting, wetting, dissolving, bending and exposing to light).
- 4. I can explore changes that greatly change the properties of an object (burning paper) and changes that leave the properties largely unchanged (tearing paper).
- 5. I can explore the effects some objects have on others- even when the two objects might not even touch (magnets).
- 6. I can investigate ways to make things move and what causes them to change speed, direction and/or stop.
- 7. I can explore how energy makes things work (batteries in a toy).
- 8. I can recognize that the sun is an energy source that warms the land, air and water.
- 9. I can describe that we can get energy from many sources in many ways (food, gasoline, electricity or batteries).

Science and Technology

- 1. I can explore that some kinds of materials are better than others for making something new (building materials used in the Three Little Pigs).
- 2. I can explain that when trying to build something or get something, it helps to follow directions and ask for help.
- 3. I can name some materials that can be saved for recycling projects (newspapers, glass).
- 4. I can explore ways people use energy to cook their food and warm their home (wood, coal, natural gas, electricity).
- 5. I can identify how people can save energy by turning things off when they are not using them (lights and motors).

SCIENCE "I CAN" STATEMENTS

Science and Technology (Grade 1 continued)

- 6. I can investigate that tools are used to help make things and some things cannot be made without tools.
- 7. I can explain that several steps are usually needed to make things (building with blocks).
- 8. I can investigate that when parts are put together they can do things that they could not do by themselves (blocks, gears and wheels).

Scientific Inquiry

- 1. I can ask "what happens when" questions.
- 2. I can explore my "what happens when" questions.
- 3. I can use safety practices when doing scientific investigations.
- 4. I can work in a small group to complete an investigation and then share findings with others.
- 5. I can create my own conclusions about group investigations.
- 6. I can use tools and equipment to safely collect scientific data (magnifiers, timers, etc).
- 7. I can make estimates to compare lengths, weights and time intervals.
- 8. I can communicate my work using words, sentences and pictures.
- 9. I can describe things correctly and compare what I observe with others.

Scientific Ways of Knowing

- 1. I can discover that when a science investigation is done the same way many times, I can expect to get almost the same results each time.
- 2. I can give good explanations from data collected from investigations and observations.
- 3. I can explain that everybody can do science, invent things and have scientific ideas no matter where they live.

SCIENCE "I CAN" STATEMENTS

Grade 2

Earth and Space Sciences

- 1. I can tell that there are more stars in the sky than anyone can count.
- 2. I can observe and describe how the sun, moon, and stars all look like they move slowly across the sky.
- 3. I can observe and describe how the moon looks a little different every day but looks the same in about four weeks.
- 4. I can observe how seasons repeat in a pattern or cycle, but the weather can change throughout the day.
- 5. I can tell about the weather by measuring the temperature and reporting precipitation.

Life Science

- 1. I can describe the basic needs (air, water, food, living space, and shelter) that all living things need.
- 2. I can identify there are different environments with their own plants and animals.
- 3. I can explain that living things live only in environments that meet their needs.
- 4. I can compare how plants and animals of the same kind are alike and different.
- 5. I can explain why all living things need food in order to have energy.
- 6. I can explain how the different structures of plants and animals help them live in different places.
- 7 a. I can compare the habitats of many different kinds of Ohio plants and animals.
- 7 b. I can tell some of the ways animals depend on plants and each other.
- 8. I can compare the activities of Ohio's animals and plants during the different seasons by telling about changes in their body coverings and behavior.
- 9. I can compare Ohio plants during different seasons and describe how their looks change.

Physical

- 1. I can explore how things make sounds.
- 2. I can explore and describe the different sounds made by vibrating objects.
- 3 a. I can use a flashlight to show how light travels in a straight line until it hits an object.
- 3 b. I can use a flashlight to make shadows.

Science & Technology

- 1. I can explain how making and using technology involves benefits and risks.
- 2. I can investigate why people make new products or invent new ways to meet their needs or wants.
- 3. I can predict how building or trying something new might affect other people and the environment.
- 4. I can communicate using words, pictures, and writing how to design something new.

Scientific Inquiry

- 1 & 2. I can ask "How can I?" or "How can we?" questions.
- 3. I can explore and investigate my own or my classmates' "How?" questions.
- 4. I can follow the correct safety rules when I'm doing an investigation.
- 5. I can use evidence to answer questions like "What do you think?" or "How do you know?"

SCIENCE "I CAN" STATEMENTS

Scientific Inquiry (Grade 2 continued)

- 6. I can recognize that answers can be given from observations, events, and occurrences.
- 7. I can use the correct tools, instruments and equipment, to safely gather scientific information.
- 8. I can use tools such as a ruler, balance, or thermometer to measure properties of objects.
- 9. I can use whole numbers to order, count, identify, measure, and describe things and experiences.
- 10. I can share explanations with others, and give them a chance to ask questions and discuss other possible explanations.

Scientific Ways of Knowing

- 1. I can describe that scientific investigations generally work the same way under the same conditions.
- 2. I can explain why scientists review and ask questions about the results of other scientists' work.
- 3. I can describe ways in which using the solution to a problem might affect other people and the environment.
- 4. I can demonstrate that in science it is helpful to work with a team and share findings.

SCIENCE "I CAN" STATEMENTS

Grade 3

Earth and Space Sciences

- 1. I can compare properties of rocks (color, layering, and texture).
- 2. I can observe and investigate that rocks are often found in layers.
- 3. I can describe that smaller rocks come from the breakdown of larger rocks through the actions of plants and weather.
- 4. I can explain that soil is made of small pieces of rock and waste products from plants and animals.
- 5. I can investigate the properties of soil (color, texture, ability to hold water, ability to support plant growth).
- 6. I can investigate that soils are often found in layers and can be different from place to place.

Life Sciences

- 1. I can compare the life cycles of different animals.
- 2. I can understand that animal characteristics help them survive.
- 3. I can classify animals according to their characteristics. (body coverings, body structure)
- 4. I can give examples of living things that are similar to extinct ones.
- 5. I can observe and explore how fossils show evidence about animals and their environment of long ago.
- 6. I can describe how changes in an animal's habitat can be sometimes helpful and sometimes harmful.

Physical Sciences

- 1. I can describe the position of an object by using the position of a different object.
- 2. I can describe an objects motion by measuring its position over time.
- 3. I can name forces that affect motion of an object (gravity, magnetism, and collision).
- 4. I can predict what a force will do to an object (push or pull, weight, and friction).

Science and Technology

- 1. I can describe how technology can increase people's abilities (to move things, to extend senses).
- 2. I can describe ways that using technology can help and/or harm.
- 3. I can investigate ways that technology may affect people.
- 4. I can use the design process to solve a problem (identify a problem, ways to solve it, and create a solution).
- 5. I can describe ways to solve a given problem (how to hold down paper in the wind).

Science Inquiry

- 1. I can choose the correct measuring tools and use them safely to measure and record length and weigh in metric and English units.
- 2. I can discuss findings and measurements made by other people.
- 3. I can read and interpret simple tables and graphs.
- 4. I can identify and use safe science procedures.
- 5. I can record and organize findings (journals, charts, and tables).
- 6. I can tell others about my science findings in different ways. (written, orally, pictures)

SCIENCE "I CAN" STATEMENTS

Scientific Ways of Knowing (Grade 3 continued)

- 1. I can describe different ways scientists find answers to their questions.
- 2. I can keep records and not change them if they are different from someone else's work.
- 3. I can find out through stories how men and women have helped the development of science.
- 4. I can name different careers in science.
- 5. I can discuss how men and women enjoy science as a career and in their everyday lives.

SCIENCE "I CAN" STATEMENTS

Grade 4

Earth and Space Sciences

- 1. I can explain that air surrounds us, takes up space, moves around us as wind, and may be measured using a barometer.
- 2. I can identify how water is in the air in different forms (e.g. in clouds, fog, rain, snow and hail).
- 3. I can investigate how water changes from one state to another (e.g. freezing, melting, condensation and evaporation).
- 4. I can describe the weather using temperature, wind direction, wind, precipitation and barometric pressure.
- 5. I can record local weather information on a calendar or map and describe changes over a period of time (e.g. barometric pressure, temperature, precipitation symbols and cloud conditions).
- 6. I can trace how weather patterns move from west to east in the United States.
- 7. I can describe how the different clouds affect the weather.
 - a. Cumulus - fair weather;
 - b. Cumulonimbus - cause rain and thunderstorms;
 - c. Cirrus- freezing rain;
 - d. Stratus - rain or snow.
- 8. I can describe how wind, water and ice shape and reshape the Earth's land surface by eroding or wearing away rock and soil and depositing them in other areas forming landforms (dunes, deltas and glacial moraines).
- 9. I can identify and describe how freezing, thawing and plant growth reshape the land surface by causing the weathering of rock.
- 10. I can describe the difference between slow processes (weathering, mountain building, deposition) and rapid processes (volcanic eruptions, earthquakes, landslides) to describe changes on the earth's surface.

Life Sciences

- 1. I can compare the life cycle of different plants, including germination, maturity, reproduction and death.
- 2. I can relate plant structures with their functions (e.g. growth, survival and reproduction).
- 3. I can classify common plants according to their characteristics (e.g. tree leaves, flower seeds, roots and stems).
- 4. I can observe and explore that fossils provide evidence about plants that lived long ago and the nature of the environment at the time.
- 5. I can describe how organisms interact with one another in various ways (e.g. many plants depend on animals for carrying pollen or dispersing seeds).

Physical Sciences

- 1. I can identify the characteristics of a simple physical change (e.g. water freezing, ice melting).
- 2. I can identify the characteristics of a simple chemical change when a new substance is formed (e.g. burning paper, vinegar and baking soda).
- 3. I can categorize or sort objects into groups by looking at the materials from which they are made (e.g. sorting paper, glass, plastic and metal).

SCIENCE "I CAN" STATEMENTS

Physical Sciences (Grade 4 continued)

- 4. I can explain the three states of matter: solid, liquid, and gas, and that each state has distinct physical properties.
- 5. I can identify the similarities and differences between ways of changing the temperature of an object. (e.g. rubbing, heating and bending of metal).

Science and Technology

- 1. I can explain how technology has improved our lives through better transportation, communication, nutrition, healthcare, agriculture, entertainment and manufacturing.
- 2. I can investigate how technology and inventions change to meet peoples' needs and wants.
- 3. I can describe, illustrate and evaluate the design process used to solve a problem.

Scientific Inquiry

- 1. I can select the appropriate tools and safety procedures to measure and record length, weight, volume, temperature and area using metric and standard units.
- 2. I can analyze a series of events or cycles by describing their patterns and inferring their next likely occurrence daily and seasonal.
- 3. I can develop, design and conduct safe simple experiments to answer questions.
- 4. I can explain that conditions of an experiment must be kept the same.
- 5. I can describe why it is not fair to compare experiments when conditions are not kept the same.
- 6. I can formulate directions and explain data to help others understand and repeat an experiment.

Scientific Ways of Knowing

- 1. I can explain the difference between fact and opinion and explain that scientists do not accept results without evidence.
- 2. I can record and explain the results and data from an experiment.
- 3. I can explain differences in an experiment using evidence for support.
- 4. I can explain why keeping records of an experiment are important.

SCIENCE "I CAN" STATEMENTS

Grade 5

Earth & Space

- 1. I can describe how night and day are caused by the Earth's rotation.
- 2. I can explain:
 - a. The Earth is one of several planets to orbit the sun;
 - b. The moon orbits the Earth.
- 3. I can describe the characteristics of the Earth and its orbit.
 - a. three-fourths of the Earth's surface is covered by a layer of water.
 - b. the entire planet is surrounded by a thin blanket of air.
- 4. I can explain how the stars are like the sun but farther away and look like tiny points of light.
- 5. I can explain how non-renewable resources:
 - a. Can be extended through reducing, reusing and recycling;
 - b. Cannot be extended forever.
- 6. I can explain the ways that the Earth's renewable resources can be preserved.

Life Science

- 1. I can describe how producers use photosynthesis to transfer energy from sunlight to chemical energy.
- 2. I can explain how food for almost all animals can be traced back to plants.
- 3 a. I can trace the energy flow of food webs and food chains.
- 3 b. I can describe producers, herbivores, carnivores, omnivores and decomposers.
- 4 a. I can identify why different kinds of life can only live in ecosystems where their needs (like water, food, etc) can be met.
- 4 b. I can explain why the Earth has different ecosystems and how they support different kinds of life.
- 5. I can describe how an organism's behavior (like what it eats, how many there are, etc) depends on its ecosystem.
- 6 a. I can analyze how all life, including humans, causes changes in ecosystems.
- 6 b. I can explain how these changes can be positive, negative or neutral.

Physical Science

- 1 a. I can define temperature as the measurement of thermal energy.
- 1 b. I can describe how temperature is measured.
- 2. I can trace the conduction of thermal energy from one object to another.
- 3. I can describe how electrical current can produce heat, light, sound, or magnetism.
- 4. I can explain how electrical current travels through a circuit to light a light bulb.
- 5 a. I can explain how light travels.
- 5 b. I can describe reflection and refraction (bending) of light.
- 6. I can summarize how sound is sent, reflected, and absorbed.
- 7. I can explain how the pitch of sound changes with the rate of vibration.

SCIENCE "I CAN" STATEMENTS

Science & Technology (Grade 5 continued)

- 1. I can describe positive and negative impacts of human activity and technology on the environment.
- 2. I can solve a problem by revising a design.
- 3. I can explain how fixing one problem may create another.

Scientific Inquiry

- 1. I can select and safely use appropriate tools (thermometers, microscopes, etc.) to collect data and share with others.
- 2. I can evaluate differences in observations and data from other people and identify reasons for any discrepancies.
- 3. I can use evidence and observation to explain the results of an investigation.
- 4. I can identify the variables in an experiment.
- 5. I can identify the hazards and/or precautions in an experiment.
- 6. I can explain why results of an experiment can sometimes be different.

Scientific Ways of Knowing

- 1. I can summarize how ideas change as we find out new things.
- 2. I can describe, explain and model new findings.
- 3. I can explain why experiments must be repeated by different people and at different times to accept the results.
- 4. I can identify how scientists use different and ongoing experiments to answer different questions.
(observations, data collection, controlled experiments)
- 5. I can keep records clearly so they can be understood later.
- 6. I can identify scientific work that people complete (all ages, backgrounds and groups).