Fourth Grade Science Indicators
Class Summary

Fourth Grade																											
	Assessment		**Type of Intervention**																								
Earth and Space Standard																											
Explain the characteristics, cycles and patterns involving Earth and its place in the solar system.																											
Summarize the processes that shape the Earth's surface and describe evidence of those processes.																											
8. Describe how wind, water and ice shape and reshape Earth's land surface by eroding rock and soil in some areas and depositing them in other areas producing characteristic landforms (e.g., dunes. deltas and glacial moraines).																											
9. Identify and describe how freezing, thawing and plant growth reshapes the land surface by causing the weathering of rock.																											
10. Describe evidence of changes on Earth's surface in terms of slow processes (e.g., erosion, weathering, mountain building and deposition) and rapid processes (e.g. volcanic eruptions, earthquakes and landslides).																											
Describe Earth's resources including rocks, soil, water, air, animals and plants and the ways in which they can be conserved.																											
Analyze weather and changes that occur over a period of time.																											
1. Explain that air surrounds us, takes up space, moves around us as wind, and may be measured using barometric pressure.																											

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	Assessment		**Type of Intervention**																								
Life Standard																											
2. Identify how water exists in the air in different forms (e.g., in clouds, fog, rain, snow and hail).																											
3. Investigate how water changes from one state to another (e.g., freezing, melting, condensation and evaporation).																											
4. Describe weather by measurable quantities such as temperature, wind direction, winds speed, precipitation and barometric pressure.																											
5. Record local weather information on a calendar or map and describe changes over a period of time (e.g., barometric pressure, temperature, and precipitation symbols and cloud conditions).																											
6. Trace how weather patterns generally move from west to east in the United States.																											
7. Describe the weather, which accompanies cumulus, cumulonimbus, cirrus and stratus clouds.																											
Life Standard																											
Differentiate between the life cycles of different plants and animals.																											
1. Compare the life cycles of different plants including germination, maturity, reproduction and death.																											

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	Assessment		**Types of Intervention**																									
Life Standard																												
5. Describe how organisms interact with one another																												
in various ways (e.g., many plants depend on																												
animals for carrying pollen or dispersing seeds).																												
Analyze plant and animal structures and functions																												
needed for survival and describe the flow of energy																												
through a system that all organisms use to survive.																												
2. Relate plant structures to their specific functions																												
(e.g., growth, survival and reproduction).																												
3. Classify common plants according to their																												
characteristics (e.g., tree leaves, flowers, seeds,																												
roots and stems).																												
Compare changes in an organism's ecosystem/habitat																												
that affect its survival.																												
4. Observe and explore that fossils provide evidence																												
about plants that lived long ago and the nature of																												
the environment at that time.																												
Physical Standard																												
Compare the characteristics of simple physical and																												
chemical changes.																												
1. Identify characteristics of a simple physical change																												
(e.g., heating or cooling can change water from																												
one state to another and the change is reversible).																												
2. Identify characteristics of a simple chemical change.																												
When a new material is made by combining two or																												
more materials, it has chemical properties that are																												
different from the original materials (e.g., burning																												
paper, vinegar and baking soda).																												

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	Assessment		**Types of Intervention**																								
Physical Standard																											
Identify and describe the physical properties of matter in its various states.																											
3. Describe objects by the properties of the materials from which they are made and that these properties can be used to separate or sort a group of objects (e.g., paper, glass, plastic and metal).																											
4. Explain that matter has different states (e.g., solid, liquid and gas) and that each state has distinct physical properties.																											
Describe the forces that directly affect objects and their motion.																											
Summarize the way changes in temperature can be produced and thermal energy transferred																											
5. Compare ways the temperature of an object can be changed (e.g., rubbing, heating and bending of metal).																											
Trace how electrical energy flows through a simple electrical circuit and describe how the electrical energy can produce thermal energy, light, sound and magnetic forces.																											
Describe the properties of light and sound energy.																											
Science and Technology Standard																											
Describe how technology affects human life.																											

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Fourth Grade	Assessment		Types of Intervention
Science and Technology Standard			
1. Explain how technology from different areas (e.g., transportation, communication, nutrition, health-care, agriculture, entertainment and manufacturing) has improved human lives.			
2. Investigate how technology and inventions change to meet peoples' needs and wants.			
Describe and illustrate the design process.			
3. Describe, illustrate and evaluate the design process used to solve a problem.			
Scientific Inquiry Standard			
Use appropriate instruments safely to observe, measure and collect data when conducting a scientific investigation.			
1. Select the appropriate tools and use relevant safety procedures to measure and record length and weight in metric and English units.			
Organize and evaluate observations, measurements and other data to formulate inferences and conclusions.			
2. Analyze a series of events and/or simple daily or seasonal cycles describe the patterns and infer the next likely occurrence.			

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Fourth Grade	Assessment	Types of Intervention
Scientific Inquiry Standard		
Develop, design and safely conduct scientific investigations and communicate the results.		
3. Develop, design and conduct safe, simple investigations or experiments to answer questions.		
4. Explain the importance of keeping conditions the same in an experiment.		
5. Describe how comparisons may not be fair when some conditions are not kept the same between experiments.		
6. Formulate instructions and communicate data in a manner that allows others to understand and repeat an investigation or experiment.		
Scientific Ways of Knowing Standard		
Distinguish between fact and opinion and explain how ideas and conclusions change as new knowledge is gained.		
1. Differentiate fact from opinion and explain that scientists do not rely on claims or conclusions unless they are backed by observations that can be confirmed.		
Describe different types of investigations and use results and data from investigations to provide the evidence to support explanations and conclusions.		
3. Explain discrepancies in an investigation using evidence to support findings.		
Explain the importance of keeping records of observations and investigations that are accurate and understandable.		

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Fourth Grade																									
	Assessment		**Types of Intervention**																						
Scientific Ways of Knowing Standard																									
2. Record the results and data from an investigation and make a reasonable explanation.																									
4. Explain why keeping records of observations and investigations is important.																									
Explain that men and women of diverse countries and cultures participate in careers in all fields of science.																									