

Checklist for Science Curriculum for 3-5

STRAND	STANDARD	BENCHMARK	3	4	5
I. Constructing new scientific knowledge	1. <i>Constructing new scientific knowledge</i> Ask questions.	1. Generate questions based on observation.			
	Design/conduct investigations.	2. Develop solution to problems-observe, predict, collect data, draw conclusions, and conduct fair tests.			
		3. Manipulate devices that aid observation/data collection.			
		4. Use simple measurement devices to aid investigation.			
	Learn from sources.	5. Develop strategies and skills for information gathering/solving.			
Communicate findings.	6. Construct charts and graphs to summarize observations.				
II. Reflecting on scientific knowledge	2. <i>Reflecting on scientific knowledge</i> Analyze claims.	1. Develop awareness of need for evidence in decisions-data, evidence, sample, fact, opinions.			
	Relate science to other ways of knowing.	2. Show how science concepts can be expressed through the arts.			
	Show how science affects society.	3. Describe ways science is used in everyday life.			
		4. Develop awareness of and sensitivity to the natural world.			
		5. Develop awareness of contributions made by persons from diverse cultures and backgrounds.			
III. Using scientific knowledge in Life Science	1. <i>Cells</i> Explain cells.	1. (none at this level)			
	2. <i>Organization of Living things</i> Use classification.	1.Explain characteristics/ functions of observable animal body parts.			
		2. Compare and contrast and classify observable physical characteristics of familiar organisms.			
	Compare and contrast life cycles.	3.Describe life cycles of familiar organisms.			
	Investigate and explain energy.	4.Compare and contrast food, energy, environment needs of selected organisms.			
	Analyze parts and functions.	5. Explain functions of selected seed plants.			
	3. <i>Heredity</i> Investigate. Explain species differences.	1. Give evidence of passing of characteristics from parents to young.			
		2. (none)			
		3. (none)			
	4. <i>Evolution</i> Explain theory testing.	1. Explain fossils provide evidence of nature of ancient life.			
		2. Explain how physical and behavioral characteristics help with survival.			
	5. <i>Ecosystems</i> Explain. Explain energy distribution.	1. Identify and describe familiar food web or food chains.			
		2. Describe basic requirements for living things to maintain existence.			
		3. Design systems that encourage growing of plants/animals.			
	Investigate changes over time.				

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	Describe materials recycling.	4. (none)					
IV. Using scientific knowledge in Physical Science	1. <i>Matter and Energy</i> Measure/describe things around us.	1. Classify common objects with attributes/properties—sink/float; color; shapes, weight (heavy, light). 2. Identifies useful properties of materials.					
	Explain world composition.	(none)					
	Identify/describe.	3. Identify forms of energy associated with common phenomena.					
	Explain electricity and magnetism.	4. (none) 5. Describe electrical hazards to be avoided at home/school.					
	2. <i>Changes in Matter</i> Investigate, describe, analyze changes.	1. Describe common changes – size, shape, melting, freezing. 2. Prepare mixtures and separate into component parts—dissolving soluble substances, evaporating.					
	Explain changes related to atoms.	3. (none)					
	Explain energy, technological changes.	4. (none)					
	3. <i>Motion of objects</i> Describe and explain motion- and control.	1. Describe and compare motion in terms of speed and direction. 2. Explain how forces- pushes and pulls are needed to slow up and down, stop or change direction of moving object. 3. Describe patterns of interaction of magnetic materials with other magnetic and non-magnetic materials using magnetic compass. 4. Identify and use simple machines and describe how they change effort. 5. Manipulate simple mechanical devices and explain how their parts work together.					
	Relate motion to energy conversion.	6. (none)					
	3. <i>Waves and Vibrations</i> Describe sounds and sound waves.	1. Describe sounds in terms of their properties. 2. Explain how sounds are made.					
	Explain shadows, color, and light phenomena.	3. Use prisms and filters with light sources to produce various colors of light. 4. Explain how shadows are made.					
	Measure/describe vibrations/waves.	5. (none)					
	Explain how waves -vibration transfer energy.	6. (none)					
	V. Using Scientific knowledge in Earth Science	1. <i>Geosphere</i> Describe the Earth's surface.	1. Describe major features of Earth's surface. 2. Recognize and describe types of Earth materials.				
		Describe/explain changes in earth's features over time.	3. Describe natural changes in Earth's surface. 4. Explain how rocks and fossils explain history of Earth.				
Analyze effects of		5. Describe uses of materials taken from the Earth.					

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technology on Earth's surface /resources.	6. Demonstrate ways to conserve natural resources and recycle.				
2. <i>Hydrosphere</i> Describe water's characteristics and where water found.	1. Describe how water on Earth exists in three states, including gas- invisible, water vapor, moisture, evaporation.				
Describe how water moves.	2. Trace path of rain water after it falls.				
Analyze the interaction of human activities with hydrosphere.	3. Identify sources of water and its uses.				
3. <i>Atmosphere and Weather</i> Investigate weather- composition, changes in seasons over time.	1. Describe weather conditions.				
	2. Describe seasonal changes in Michigan weather.				
Explain causes of weather.	3. (none)				
Analyze relationships between human activities and atmosphere.	4. Explain appropriate safety precautions during severe weather.				
4. <i>Solar System, Galaxy, Universe</i> Compare our planet and sun to other planets and star systems.	1. Compare and contrast characteristics of the sun, moon, and Earth.				
Describe/explain how objects in the solar system move.	2. Describe the motion of the Earth around the sun and the moon around the Earth.				
Explain scientific theories of origin of solar system.	3. (none)				
Explain how we learn about the Universe.	4. (none)				