

DOMAIN 4: GENERAL KNOWLEDGE**SUB-DOMAIN: SCIENCE****SCIENTIFIC INQUIRY—THINKING, ASKING, ACTING, AND SOLVING PROBLEMS**

GOAL 43: CHILDREN ENGAGE IN EXPLORING AND MAKING SENSE OF THE NATURAL WORLD BY ASKING QUESTIONS AND MAKING PREDICTIONS ABOUT CAUSE AND EFFECT RELATIONS THAT CAN LEAD TO GENERALIZATIONS.

Age Range	Developmental Growth	Child Indicators	Caregiver Strategies
<p>36 to 60 Months</p>	<p>Investigates unfamiliar phenomena using both trial and error and systematic trials, with assistance.</p>	<ul style="list-style-type: none"> ▪ Creates strategies (from trial and error) to explore attributes and solve problems. ▪ Uses tools for sensory exploration in a trial and error fashion. ▪ Observes, describes, and predicts the phenomenon and outcomes. ▪ Uses everyday routines and events as springboards to systematic thinking (e.g. participates in food preparation and cooking, including mixing ingredients, measuring, kneading dough, observing and describing how ingredients change and taste.) ▪ Verbalizes observations. ▪ Uses questioning as a way to engage conversation rather than as an intended means for gathering information. ▪ Shows curiosity and interest about familiar/unfamiliar and living/nonliving things. ▪ Within cultural norms, shows awareness and respect for living things. ▪ Makes simple predictions and inferences about cause and effect relations based on observations, explorations, and experimentations with objects and events in the natural world. ▪ Compares predictions with actual observations (e.g. predicts what will happen as different sized toy cars roll down a ramp, and then shows interest and perhaps surprise at what happens). ▪ Makes drawings of observed events. 	<ul style="list-style-type: none"> ▪ Create an environment that inspires child to have ideas and figure out how to do something. ▪ Provide an outdoor environment with sand, water, sand tools, wheel toys, and props to promote open-ended play and offer cause and effect moments. ▪ Encourage child to try out ideas, make mistakes, and develop contradictions and ask, "What do you think will happen if..." ▪ Encourage child to actively explore, compare, and describe safe natural materials (leaves, shells, snow, and food items) according to observable similarities and differences. ▪ Encourage child to observe patterns and offer possible predictions through questions (e.g. "What will happen if we put this flower in a vase without water?"). ▪ Provide opportunities for food preparation and cooking (e.g. pat the dough into tortillas and cook them, or pour eggs into a pan and watch them change as the eggs are scrambled, and, then, thinking about how the eggs in the muffin mix will change in the oven). ▪ Provide child with bubble solution and a variety of wands and household items (ladles with holes, spatulas, funnels, strawberry baskets, straws) and encourage them to question and predict what kind of bubbles different types of wands will make. ▪ Provide daily opportunities for child's exploration of sand, water, mud, and pebbles, with tools for pouring and manipulating; help child question what will happen. ▪ Provide child with simple machines such as flashlights or

		<ul style="list-style-type: none"> ▪ Makes predictions about observed changes in the environment that lead to generalizations. ▪ Connects math to science by using measurement tools and counting phenomenon or events. 	<p>toy cars to take apart and put back together (flashlight).</p> <ul style="list-style-type: none"> ▪ Provide wheel toys and slopes and ramps to observe and question how they might move. ▪ Provide child opportunities to explore, observe, and describe the properties of magnets with different materials such as fabric, plastic toys, nuts and bolts, or coins). ▪ Offer many natural experiences that encourage child to explore, describe, and classify according to interests (e.g. "Which of these insects crawl and which ones fly?"). ▪ Encourage children to act on their own observations of patterns and make predictions (e.g. add varying amounts of milk to pancake batter to see what happens when pancakes are cooked and eaten). ▪ Offer ways for children to document the outcomes of their predictions with what they see (e.g. "What happened with the pancakes? Did they look, taste, or cook the way you thought they would as you changed the amount of milk you put in the batter?"). ▪ Provide opportunities for child to mix colors and make predictions using paint, play dough, colored water). ▪ Provide a variety of measurement tools to explore attributes such as weight, lengths, and volume.
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