

DOMAIN 4: GENERAL KNOWLEDGE			
SUB-DOMAIN: SCIENCE			
SCIENTIFIC INQUIRY—THINKING, ASKING, ACTING, AND SOLVING PROBLEMS			
GOAL 43: CHILDREN FURTHER 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
6 to 18 Months	Explores cause and effect relations through observation and trial and error.	<ul style="list-style-type: none"> <li>▪ Uses senses to initiate trial and error problem solving.</li> <li>▪ Attempts to repeat cause and effect events (e.g. pushing bowl off highchair tray).</li> <li>▪ Drops objects; then looks to see where the object lands.</li> <li>▪ Fills and dumps containers with objects.</li> <li>▪ Observes and uses single word descriptions to explain and predict outcomes and phenomenon.</li> <li>▪ Looks for other's responses when surprised by events that do not follow expected sequences.</li> <li>▪ With increased motor skills, actively pursues an object that disappears in an unusual location displaying object permanence.</li> <li>▪ Solves simple problems using a series of actions, an object, or a caregiver to reach a goal (e.g. pulling a string to reach an attached toy).</li> <li>▪ Imitates a caregiver's action(s) to solve a problem.</li> <li>▪ Demonstrates persistence when trying to solve a problem (e.g. fitting a puzzle piece in a space).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Create an environment that inspires child to have ideas and figure out how to do something to cause a reaction (e.g. stacking blocks and knocking them over).</li> <li>▪ Encourage child to try out ideas, make mistakes, and develop contradictions.</li> <li>▪ With supervision, offer materials for child to explore, compare, and describe (e.g. leaves, water, snow, and food items).</li> <li>▪ Intentionally promote development of scientific reasoning by providing responsive materials to explore.</li> <li>▪ Promote reasoning and problem-solving skills by making time for children to observe, experience, and label a variety of materials.</li> <li>▪ Each day, provide containers, scoops, sponges, funnels, shovels, and such for water and other sensory play at a sensory table.</li> <li>▪ Refrain from intervening too quickly as child explores problem-solving experiences and help point out, describe, and discuss the results of child's actions.</li> <li>▪ Wait for child to gesture, motion, or verbally signal for help or assistance.</li> <li>▪ Acknowledge, encourage, and support explorations and attempts at problem-solving.</li> <li>▪ Offer environments where children are safe and free to explore learning and solve problems independently. This means adults are attentive to the child's actions, but do not interfere with their play, rather they</li> </ul>

			<p>intervene when the child shows frustration.</p> <ul style="list-style-type: none"><li>▪ Resist offering your own solutions until the child has time to explore and try out solutions.</li><li>▪ Allow and encourage repetitive activities such as dropping and picking up objects.</li><li>▪ Model problem-solving behaviors that are developmentally within child's ability to imitate.</li><li>▪ Talk with child about natural objects and everyday events (how does food smell, taste, or feel.).</li></ul>
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