

IDAHO EARLY LEARNING EGUIDELINES

GOAL 42: CHILDREN OBSERVE, DESCRIBE, AND COLLECT INFORMATION BY EXPLORING THE WORLD AROUND THEM.

Domain 4: General Knowledge

Sub-Domain: Science

[Birth through 8 Months](#)

[6 to 18 Months](#)

[16 to 38 Months](#)

[36 to 60 Months](#)

[60 Months through Kindergarten](#)

DOMAIN 4: GENERAL KNOWLEDGE			
SUB-DOMAIN: SCIENCE			
SCIENTIFIC INQUIRY			
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Age Range	Developmental Growth	Child Indicators	Caregiver Strategies
<p>Birth through 8 Months</p>	<p>Shows interest in familiar people, objects, and events in the immediate environment.</p>	<ul style="list-style-type: none"> ▪ Indicates personal needs (hunger, thirst). ▪ Observes physical relationships using the senses (e.g. turns head toward sounds, mouthing, grasping, and reaching for objects). ▪ Shows interest in surroundings by tracking toward and focusing on familiar faces, objects in close proximity (including plants and animals), and events. ▪ Begins to show awareness that people or objects exist after they are no longer present (beginning of object permanence). ▪ Visually tracks attachment figure and reaches for or communicates verbally to them. ▪ Ceases to cry upon hearing attachment figure's voice or seeing their face. ▪ Social responses become more selective near the end of this stage, and saved for known individuals. 	<ul style="list-style-type: none"> ▪ Provide appropriate space, time, and materials for child to explore (play on the floor with babies and get face-to-face with them; provide easy to grasp objects for them to hold). ▪ Safeguard the environment; maximizing freedom for exploration. ▪ Provide opportunities to look at "the baby in the mirror." ▪ Describe observable natural events (e.g. raindrops forming puddles or a squirrel climbing up a tree). ▪ Support and encourage child's exploration by smiling, nodding, and describing what the child is doing. ▪ Provide a changing variety of familiar and novel materials that can be used in different ways (e.g. containers for scooping, putting objects into, and for banging). ▪ Read a variety of picture books with real-life photos and drawn/painted illustrations of familiar living and nonliving things. ▪ Provide opportunities to play jointly with caregivers, other children, and objects. ▪ Respect child's explorations without predetermined outcomes or expectations.

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6 to 18 Months	Observes events, actions, objects and people. Responds non-verbally and with one word responses to comments and reactions of, others, and shows preferences for people, events, actions, and objects.	<ul style="list-style-type: none"> ▪ Focuses on familiar and unfamiliar faces, familiar and novel objects in different environmental settings (including plants and animals), and events. ▪ Notices and begins to express individual wants and preferences. ▪ After repeated exposure to the same toys and objects, explores novel ways of using the materials. ▪ Integrates simultaneous use of more than one sense (e.g. uses sight, touch, and hearing by looking at and shaking a toy to hear its sound). ▪ Notices and uses sounds or one word to label objects and events in the environment. ▪ Seeks indoor and outdoor environments for play and exploration. ▪ Explores natural objects such as water, leaves, rocks, sand, mud, sun, rain, and clouds. ▪ Explores living things using multiple senses (e.g. scent of flower, rough texture of tree bark). ▪ With assistance, shows awareness of object permanence. 	<ul style="list-style-type: none"> ▪ Provide space, time, and materials for child to explore (e.g. place child on floor with open-ended toys such as blocks, containers, pots and pans, sand, mud, and water). ▪ Provide sensory materials for child to explore (e.g. water, foods with varying textures, ice cubes, and pudding on a tray). ▪ Safeguard the environment; maximizing freedom for exploration indoors and outdoors. ▪ Respect child's explorations without predetermined outcomes or expectations. ▪ Talk about what the child is experiencing (e.g. "There is bright sunshine on your face."). ▪ Model language that is both labeling and descriptive to encourage children to give names to observable natural events ("Leaves!" "Falling leaves."). ▪ Support and encourage child's words and sounds for exploring items and situations by smiling, nodding, and repeating the child's words. ▪ Read a variety of picture books with real-life photos or drawn/painted illustrations of familiar and unfamiliar living and nonliving things, and encourage child to point to and describe. ▪ Provide opportunities to play jointly with caregivers, other children, and objects.

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16 to 38 Months	Describes observable characteristics of objects, people, and events.	<ul style="list-style-type: none"> ▪ With continued exposure to the same toys and objects, explores novel and multiple ways of using the materials. ▪ Expands on choices for outdoor play. ▪ Plays with, explores, and experiments with water, sand, and mud. ▪ Notices, understands, and expresses personal wants, needs, and preferences. ▪ Demonstrates curiosity about the natural environment and identifies and labels the Earth's materials. ▪ Gathers, groups, and labels natural materials. ▪ Uses varying sensory exploration of objects to see similarities and differences. ▪ Has a repertoire of single words to name and describe natural phenomenon and objects (e.g. rain, sunny, muddy, hot, bird). ▪ Explores and investigates physical properties of living and nonliving things. ▪ Shows understanding of object permanence; looking for people and objects that have disappeared. 	<ul style="list-style-type: none"> ▪ Encourage child to explore new and unfamiliar toys and objects to find multiple ways for using them. ▪ Provide child daily with varied opportunities to explore, describe, and discuss the similarities and differences observed with natural objects and phenomenon. ▪ Talk about tastes, textures, temperature, and smells of food during meals. ▪ Provide child with varied opportunities to play, explore, and experiment with water, sand, and mud; and offer words to label what happens as they use funnels, tubes, containers, and utensils. ▪ Provide child with child-safe bubble solution and a variety of wands and household items (ladles with holes, spatulas, funnels, strawberry baskets, straws), and offer words that describe the bubbles that each item makes. ▪ Support, encourage, and guide child's observations and explorations by discussing and asking questions about their findings without predetermined outcomes or expectations. ▪ Provide opportunities to label and describe Earth's materials while on nature walks. ▪ Provide opportunities to explore and investigate physical properties of living and nonliving things. ▪ Offer uninterrupted time for children to investigate and play with items in the natural environment. ▪ Have extra clothes and hand washing materials close by where children can engage in "messy" play without undue stress.

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36 to 60 Months	Calls attention to, describes, discusses, and explains similarities and differences among objects or events.	<ul style="list-style-type: none"> ▪ Shows interest and curiosity in exploring, investigating, and using words to describe living and nonliving things. ▪ Asks “why” and “how” questions about objects and events. ▪ Participates in simple cooking experiences, including stirring, pouring, kneading, tasting, smelling, and talking about changes in the appearance and form of the food. ▪ Labels and describes sensory exploration of materials, objects, and natural phenomena (e.g. textures, visual imagery, temperature, auditory, or tastes). ▪ Makes comparisons and calls attention to details; and with adult assistance, explores the ways in which things are alike and different (e.g. notices how shells are the same or different; notices objects that float or sink; listens to and mimics different sounds of animals). ▪ Notices, describes, and predicts changes in the environment (e.g. dark clouds mean possible rain). ▪ Observes, compares, classifies, measures, and communicates observations of events and objects. ▪ Explores earth science, physical science, and life science through observations and experimentation with concrete objects. ▪ Uses simple tools (magnifiers, lenses, droppers) for exploration and investigation. 	<ul style="list-style-type: none"> ▪ Provide opportunities to explore, describe, collect, classify, and document materials, objects, and natural phenomena using various senses (e.g. experiment to collect items or experiences that are hot and cold, loud and soft, or rough and smooth). ▪ Provide opportunities to make, categorize, and label nature collages. ▪ Provide frequent cooking experiences with measuring sensory activities (squeezing, tasting) and describing and predicting changes. ▪ Provide opportunities to observe and explore different physical characteristics of living and nonliving things using investigative tools (magnifiers, droppers), with assistance. ▪ Provide opportunities to examine and create nature collections such as rocks, shells, and insects. ▪ Provide opportunities to group, order, and classify collections of rocks, shells, and toy animals. ▪ Play “I Spy” to describe living and nonliving items in the immediate surroundings. ▪ Provide opportunities for child to select items and place them in a sensory bag for others to explore, describe, and identify. Be sure to have the children chart their findings. ▪ Discuss which food items come from plants during snack time. ▪ Provide cooking experiences and talk about textures, tastes, smells, and changes that occur during experience. ▪ Provide a variety of fruits and vegetables for exploration to find similarities and differences, or to compare attributes of different seeds. Plant a garden and make a month’s long project of exploring, comparing and contrasting plants from soil to seeds to new plants to growing plant to harvesting to cooking and eating. ▪ Provide child with bubble solution and a variety of wands and household items (ladles with holes, spatulas, funnels, strawberry

		<ul style="list-style-type: none"> ▪ Predicts the outcome of an investigation based on observation, evidence, or experience. ▪ Respects living things (e.g. watering plants or trying to avoid stepping on ant hills). ▪ Explores answers to questions and forms new questions or conclusions. 	<p>baskets, straws), and encourage them to describe and predict the bubbles each item makes.</p> <ul style="list-style-type: none"> ▪ Use lighting and different objects and describe their different shadows. ▪ Provide opportunities to compare and describe the similarities and differences of living and nonliving things with photos or illustrations in books. ▪ Have a museum table for bringing living and non-living items for display and discussion. ▪ Provide digital cameras, paper, and art materials for documenting child's observations (e.g. representations of the sequence of the emerging of a caterpillar; rubbings of shells, or a series of drawings of an amaryllis blooming).
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60 Months through Kindergarten	Collects, categorizes, and describe objects and observations to organize knowledge and experiences about the natural world.	<ul style="list-style-type: none"> Uses observations, descriptions, and predictions to explain the natural world. Has a repertoire of words and tools to collect information and organize findings. Has a repertoire of words and tools to document results of observations and experimentations. Makes comparisons and contrasts based on observations and vocabulary that includes descriptive and comparative words. Collects and categorizes everyday objects, events, and experiences from the natural world to independently function (e.g. helps with food preparation, seeing how ingredients can be combined successfully, or gathers flowers for a bouquet and observes what happens if they have no water). Makes drawings of observed objects or events (e.g. spider webs). Uses non-fiction picture books and electronic resources to gather information about objects or topic. Makes inferences, drawing more meaning from what is visible than what is said, and predicts future events. Describes event/objects using comparison of prediction and observed outcome (e.g. "If we put the hard potato in the oven, it will become soft. If we put the hard bread in the oven, it will become 	<ul style="list-style-type: none"> Continue to invite curiosity and interest through experiences that encourage the child to explore, describe, and classify living and nonliving items through increasingly descriptive categories (e.g. sand and water as it runs through fingers; sounds of different animals; making different size bubbles with household items). Provide opportunities to organize, discuss, and draw conclusions based on observations about living and nonliving things using investigative tools (looking at a caterpillar's sections through magnifier; weighing ingredients that one might use for cooking, counting the number of people who use a piece of outside play equipment during outside time). Provide child with bubble solution and challenge them to find items in the classroom that will make bubbles. Encourage child to make own photos, drawings, stories, or books about living and nonliving things. Help children use digital technology to gather pictures or information about natural phenomenon. Provide cooking experiences and talk about measurement, changes when ingredients are mixed, and sources of heat making change (baking, boiling, and frying). Introduce unfamiliar foods at snack and mealtime, offering small group activities where children study that food prior to eating. Provide opportunities for child to describe living and nonliving items in a museum type center, or make a digital video interview of the child telling what they know. Carry out projects where children tell what they know about an item or event in the natural world, and what they would like to find out. Ask them to brainstorm how they might find out what they want to know, and then plan lessons that help them explore the topic. Provide child with an assortment of investigative tools and

		<p>soft. But, no, the potato became soft, but the bread became harder.”).</p> <ul style="list-style-type: none"> ▪ Uses scientific tools, such as locomotion devices (gears and pulleys), technological tools, and measurement devices. ▪ Classify objects into given categories; count the numbers of objects in each category and sorts the categories by number. 	<p>devices to explore and describe, draw, and write about (e.g. magnifiers, binoculars, telescopes, and microscopes; weights and balancing scales; tubes and funnels; bicycle chain and gear sprockets; animal guide books, or internet resources).</p> <ul style="list-style-type: none"> ▪ Encourage child to discuss how we get food from plants, animals, farms, and fields. ▪ Brainstorm with the children about what they will need to plant a flowerbed or vegetable garden. Help them get those items and build the garden. ▪ Offer tools for measuring moisture content of soil. Let children use, read, and document their findings. Note that they may want to do this repeatedly, so offer lots of different pots of soil, with varying amounts of moisture. ▪ Encourage child to observe patterns and make predictions (e.g. “What happens to the lima bean planted in soil if it does not get any water?”). ▪ Help child organize needed materials (paper, markers, crayons, and scissors to draw or create collage life cycles of insects, animals, and plants). ▪ Read and reread life cycle books such as, The Hungry Caterpillar. ▪ Provide child with the needed writing materials to document, visually organize (create charts, graphs, tables), and display observation results (measuring the height of a sprouted lima bean; daily temperature pattern for one week).
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