

Approaches to Learning and Science (AL&S)

Preschool Foundational Standards	Kindergarten Readiness Standards (End of Preschool)	Utah Core Kindergarten Standards (End of Kindergarten)
<p>Standard I: The Processes, Communication, and Nature of Science <i>For Preschool Foundational Standards and Kindergarten Readiness Standards, students should have developmentally appropriate modeling and support.</i></p>		
<p>The child displays an orientation to learning.</p> <p>1-2. Displays a sense of curiosity and willingness to try new things.</p> <ol style="list-style-type: none"> Actively explores and experiments. Shows interest and curiosity in new people and objects. Pays attention to people and objects. Makes things happen and watches for results or repeats action. <p>3-5. Demonstrates confidence in a range of abilities.</p> <ol style="list-style-type: none"> Is aware of and believes in own abilities. Attempts challenging activities. Asks for help when needed. 	<p>The child displays an orientation to learning.</p> <p>1-2. Displays a sense of curiosity and willingness to try new things.</p> <ol style="list-style-type: none"> Uses senses to explore people, objects, and the environment. Seeks opportunities to participate in new activities. Asks questions for further information. Creates or suggests new activities. <p>3-5. Demonstrates confidence in a range of abilities.</p> <ol style="list-style-type: none"> Shows ability to acquire and process new information. Shows imagination and creativity in approaching tasks and activities. Asks questions and seeks new information. 	<p>Objective 1. Generating Evidence: Using the processes of scientific investigation.</p> <ol style="list-style-type: none"> Framing questions: Observe using senses, create a hypothesis, and focus a question that can lead to an investigation. Designing investigations: Consider reasons that support ideas, identify ways to gather information that could test ideas, design fair tests, share designs with peers for input and refinement. Conducting investigations: Observe, manipulate, measure, describe. Collecting data: Deciding what data to collect and how to organize, record, and manipulate the data. Drawing conclusions: Analyzing data, making conclusions connected to the data or the evidence gathered, identifying limitations or conclusions, identifying future questions to investigate.
<p>Strategies (1-2)</p> <ul style="list-style-type: none"> Guide children in asking, “Would you like to try it?” Encourage children who choose the same activity every day to choose a new activity Use free choice time to interact with children, children will be more willing to try something new when they are eased into an activity and it is made interesting Know children’s abilities as well as likes and dislikes (e.g., by adding plastic snakes, shells, plastic jewels, or some other item to the sand table, a child who normally would not use it may attempt the activity) Encourage children to ask questions when new materials are introduced Provide opportunities for children to use available materials creatively <p>Strategies (3-5)</p> <ul style="list-style-type: none"> Provide opportunities and time for children to solve problems Design learning activities that are challenging, but within children’s abilities Set up a routine for children to ask for help (e.g., children ask for help from two peers before asking assistance from an adult to get out the large blocks) 	<p>Strategies (1-2)</p> <ul style="list-style-type: none"> Design the physical environment to support exploration: materials are well organized and within children’s reach, there is daily free choice time, parameters for use of materials are clear, child knows that adults are accessible for help Rotate centers, helping children make new choices Use free choice time to interact with children, children will be more willing to try something new when they are eased into an activity and it is made interesting Model questioning skills during learning experiences (e.g., “there’s something that I would like to know. How can we find out how many children are here today?”) Plan time (after giving instructions, presenting something new, show and tell, and story time) for children to ask questions Regularly rotate materials in centers Have children participate in decision making regarding learning experiences or extensions of activities <p>Strategies (3-5)</p> <ul style="list-style-type: none"> Allow children to revisit learning experiences and improve on earlier attempts Remind children of their past successes Help children identify the challenging factor in an activity and come up with possible strategies Design activities that require collaboration between 	

	<p>students</p> <ul style="list-style-type: none"> Model asking for and accepting help (e.g., “Can you help me carry these baskets? Thank you. It would take me two trips if I did it by myself.”) 	
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Standard I: The Processes, Communication, and Nature of Science <i>For Preschool Foundational Standards and Kindergarten Readiness Standards, students should have developmentally appropriate modeling and support.</i>		
<p>Child develops abilities and skills that promote learning.</p> <ol style="list-style-type: none"> Persists in completing tasks. <ol style="list-style-type: none"> Maintains interest in a project or activity. Ignores minor distractions. Works collaboratively with others. <ol style="list-style-type: none"> Shares materials. Helps others. Follows simple rules and routines. Uses imitation or pretend play to learn new roles and relationships. Communicate with familiar adults and accept guidance. Approaches tasks with organization. <ol style="list-style-type: none"> Recognizes the process (<i>such as cause and effect, first steps, etc.</i>). Knows how to access resources. Knows how to find an appropriate space to work or play. 	<p>Child develops abilities and skills that promote learning.</p> <ol style="list-style-type: none"> Persists in completing tasks. <ol style="list-style-type: none"> Attempts tasks until satisfied with results. Resists distractions, maintains attention, and continues the task at hand through frustration or challenges. Works collaboratively with others. <ol style="list-style-type: none"> Helps, shares, and cooperates in a group; demonstrates sharing and turn taking. Uses socially appropriate behavior with peers and adults, such as helping. Follows simple rules, routines, and common directions. Accepts responsibility (<i>e.g., cleans up, does own share of work, accepts assigned role</i>). Approaches tasks with organization. <ol style="list-style-type: none"> Uses a variety of strategies to solve a problem. Experiments with different uses for objects and applies knowledge to new situations. Demonstrates age-appropriate independence in a range of activities, routines, and tasks. 	<p>Objective 2. Communicating Science: Communicating effectively using science language and reasoning.</p> <ol style="list-style-type: none"> Developing social interaction skills with peers. Sharing ideas with peers. Connecting ideas with reasons (<i>evidence</i>). Using multiple methods of communicating reasons/evidence (<i>e.g., verbal, charts, graphs</i>).
<p>Strategies (1)</p> <ul style="list-style-type: none"> Arrange the room by placing loud and active centers away from quiet centers, this allows children to participate appropriately <p>Strategies (2)</p> <ul style="list-style-type: none"> Provide enough materials that children will not become frustrated when sharing Provide opportunities for children to help each other Help children take turns as they play games Post illustrated rules, and help children relate rules to daily interactions and activities Model and encourage courteous language Include toys, literature, music, dress-up clothes, and snacks that reflect the cultural diversity of the group <p>Strategies (3)</p> <ul style="list-style-type: none"> Clearly label where materials belong with pictures and words Help maintain orderly materials by providing appropriate space and containers 	<p>Strategies (1)</p> <ul style="list-style-type: none"> Ask children how work is “coming along”, or ask “What is your plan?” Make suggestions such as, “Have you tried using other materials? What might you use? Where might that work?” <p>Strategies (2)</p> <ul style="list-style-type: none"> Model, use, and encourage phrases such as: “May I use that after you?” “May I share with you?” Arrange for cleanup buddies to help encourage completion of tasks Design activities in which children can work with partners or small groups on a cooperative project Guide children in creating rules that are concise and few in number Show respect for others Include toys, literature, music, dress-up clothes, and snacks that reflect the cultural diversity of the group Prompt children to provide appropriate comments and actions after a child shares work or items (e.g., “What can you say about your friend’s work?”) 	

	<ul style="list-style-type: none"> • Ask children to comment positively about the work that he/she has done (e.g., “What did you like? What did you learn?”) • Involve all children in group jobs, delegating fairly and enabling all children to be contributors to a caring learning environment <p>Strategies (3)</p> <ul style="list-style-type: none"> • Listen as children explain a work plan for free choice activities; encourage or help clarify the work plan, and then check with children to see whether the plan has been accomplished • Establish methods for children to determine work and play space (e.g., work mats that children can use to create a work area, center charts that include the number of children who can participate, and clearly defined center areas) 	
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Standard 2: Students will gain an understanding of Earth and Space Science. <i>For Preschool Foundational Standards and Kindergarten Readiness Standards, students should have developmentally appropriate modeling and support.</i>		
<ol style="list-style-type: none"> 1. Use senses to explore objects and the environment. 2. Attend to colors and textures in the natural environment. 3. Show interest and curiosity in indoor and outdoor environments. 4. Ask questions for further information. 	<ol style="list-style-type: none"> 1. Actively explore/experiment with objects and the environment. 2. Show interest and curiosity in indoor and outdoor environments. 3. Ask questions for further information. 	<p>Investigate non-living things.</p> <ol style="list-style-type: none"> 1. Observe and record that big rocks break down into small rocks, (e.g., boulders, rocks, pebbles, sand). 2. Demonstrate how water and wind move non-living things. 3. Sort, group, and classify Earth materials (e.g., hard, smooth, rough, shiny, flat).
<p>Strategies (1)</p> <ul style="list-style-type: none"> • Provide children with different types of soils, sands, rocks, and water <p>Strategies (2)</p> <ul style="list-style-type: none"> • Describe for children different attributes of soil, such as dirty, sand, and clay • Describe for children different attributes of rocks <p>Strategies (3)</p> <ul style="list-style-type: none"> • Plant seeds in different types of soil and observe different watering schedules as plants grow <p>Strategies (4)</p> <ul style="list-style-type: none"> • Document for the children their questions and answers that they find 	<p>Strategies (1)</p> <ul style="list-style-type: none"> • Help children plant a garden, discuss the needs of plants and watch and document for the children as changes take place • Provide sand and water to simulate erosion <p>Strategies (2)</p> <ul style="list-style-type: none"> • Take children to a park or other study site where they can observe a variety of earth materials • Take children to a Museum of Natural History <p>Strategies (3)</p> <ul style="list-style-type: none"> • Plant seeds in different types of soil and observe different watering schedules as plants grow and document for the children their questions and answers that they find 	
<ol style="list-style-type: none"> 1. Recognizes the difference between day and night. 	<ol style="list-style-type: none"> 1. Discuss the things that are done in the daytime and the things that are done at night. <ol style="list-style-type: none"> a. Begins to understand and use time concepts: yesterday, today, tomorrow, morning, afternoon, night. 2. Describe the changes in the physical attributes of the sky from day to night. 	<p>Observe and describe changes in day and night.</p> <ol style="list-style-type: none"> 1. Compare and contrast light and dark in a day night cycle and identify the changes as a pattern. 2. Investigate, interpret, and explain to others that the sun provides heat and light to Earth. 3. Examine what happens when you block the sun’s light. Explore shadows and temperature changes.
<p>Strategies (1)</p> <ul style="list-style-type: none"> • Show pictures and discuss with children the things they do in the day and the things they do at night • Go outside to observe shadows at different times of the day; talk about the shadows 	<p>Strategies (1)</p> <ul style="list-style-type: none"> • Discuss with children the things they do in the day and the things they do at night • Go outside to observe shadows at different times of the day; talk about what is different about the shadows 	

<ul style="list-style-type: none"> • Discuss with children the things they do in the day and the things they do at night • Draw a picture of night and day – one dark and one with sun shining • Discuss classroom routine and bedtime routine 	<ul style="list-style-type: none"> • Draw a picture of what children do at night and day <p>Strategies (2)</p> <ul style="list-style-type: none"> • Point out the moon in the sky during the day, discuss why it is there 	
<ol style="list-style-type: none"> 1. Recognize changes in the seasons. 2. Understand hot and cold. 3. Understand rain, snow and sun. 	<ol style="list-style-type: none"> 1. Discuss the changes in the earth as seasons change. 2. Know the difference in temperature as the weather changes. 3. Describe why certain clothing is appropriate to each season. 	<p>Compare changes in weather over time.</p> <ol style="list-style-type: none"> 1. Observe and record that weather changes occur from day-to-day and weather patterns occur from season to season. 2. Communicate ways weather can affect individuals. 3. Describe, predict, and discuss daily weather conditions and how predicting the weather can improve our lives.
<p>Strategies (1)</p> <ul style="list-style-type: none"> • Chart and graph changes in the daily weather • Talk about changes in temperatures between seasons • Take pictures of the children as temperatures change in the seasons <p>Strategies (2)</p> <ul style="list-style-type: none"> • Allow children to play outside in as many different weather situations as possible and discuss how different clothing is worn as the weather changes • Wear a coat when it is cold, short sleeves when it is hot • Use ice cubes in a water table to demonstrate cold • Use washing their hands to discuss hot and cold <p>Strategies (3)</p> <ul style="list-style-type: none"> • Allow children to play outside in as many different weather situations as possible and take dictation on children’s ideas about the rain, snow, and sun 	<p>Strategies (1)</p> <ul style="list-style-type: none"> • Observe a tree and record changes to the tree during different seasons • Collect leaves or other vegetation in the children’s environment and notice the different colors in fall and spring leaves <p>Strategies (2)</p> <ul style="list-style-type: none"> • Allow children to play outside in as many different weather situations as possible and discuss how different clothing is worn as the weather changes • Erect a simple weather station so children can see weather <p>Strategies (3)</p> <ul style="list-style-type: none"> • Talk about why certain clothing is appropriate to the season 	