

Family and Child Education (FACE) Preschool Standards

Science



Young children are natural scientists. They explore, manipulate, ask questions and think about how things work. Science in preschool is about asking questions, discovery, investigation, and sharing learning. Children are immersed in science in their everyday lives. Their curiosity leads them to observe, inquire, investigate and interpret how things work in their world around them. In this process of developing understanding, children build a foundation for life-long learning.

Young children learn to use inquiry skills by observing, exploring and problem solving. They also learn about the basic concepts of our physical world through their natural interest in such things as how the world works, living things, their bodies, and the environment around them.

Learning environments that support scientific thinking provide a variety of tools for observation and experimentation, such as magnifying glasses, scales, measuring tools, and collection boxes. Writing tools such as journals, clipboards and notecards can help children write down their observations. Water and sand tables provide a great way for children to practice working with materials in different ways – molding sand, mixing colors, measuring water, filling cups. Ask questions such as, “I wonder why...?” “What if we...?” “What would happen if...?” Listen to children and ask about what they are doing, what they see, what they hear, or what they think. Think about how you can incorporate science into cooking activities, the block area, and outdoor time.

Involve parents! What are parents doing in Adult Education that is related to Science? How can you make connections for them to what you are doing in Early Childhood?

Discuss with the Adult Education teacher to occasionally integrate your science activities. Find some simple activities parents can also do at home with their children for Transfer Home.

Sometimes Science can be intimidating for everyone. Have fun with Science and encourage families to have fun with it, too!

The Science Standards are organized as follows:

- Observation and Inquiry
- Investigation
- Make and Express Conclusions
- Interpret and Share Learning

Observation and Inquiry

Standard 1. Asks questions and makes predictions based on observations of events in the environment.

Indicators	Examples
1.1 Demonstrates curiosity about objects, living things, and other natural events in the environment.	The Child <ul style="list-style-type: none">• Looks closely at a beautiful butterfly on the flower.• Asks about the sparkle in the rocks she picked up on the playground.
1.2 Uses one or more senses to observe and explore objects, living things, and natural events in the environment.	The Child <ul style="list-style-type: none">• Feels and smells the orange blossoms on the tree in his care giver's back yard.• Says, "Thunder makes a loud noise! "
1.3 Examines attributes of objects, living things, and natural events in the environment.	The Child <ul style="list-style-type: none">• Notices bean seeds planted in clear bags have sprouted into plants with roots and a stem.• Moves in the sunlight and realizes that his own shadow moves when he moves.
1.4 Describes changes in objects, living things, and the natural events in the environment.	The Child <ul style="list-style-type: none">• After being measured on a growth chart, child describes how he is bigger now than he was at the beginning of the year.• Describes observable changes in weather. "Today it is cloudy; yesterday it rained."

<p>1.5 Observes and describes the relationships between objects, living things and natural events.</p>	<p>The Child</p> <ul style="list-style-type: none"> • Places a picture of a baby chick with a hen. • Says, "The sun will dry up the puddle."
<p>1.6 Responds to questions about relationships of objects, living things, and events in the natural environment.</p>	<p>The Child</p> <ul style="list-style-type: none"> • Answers, "It will melt", in response to the question, "What will happen if we put the ice in the sun?" • When asked, "What does the rabbit eat?" Child says, "He eats lettuce."
<p>1.7 Asks questions about relationships of objects, living things, and natural events in the environment.</p>	<p>The Child</p> <ul style="list-style-type: none"> • Asks, "What is the nest made of? How did a bird do this without hands?" • Asks, "Does the magnet work under water?"
<p>1.8 Predicts the outcome of investigation based on observation.</p>	<p>The Child</p> <ul style="list-style-type: none"> • Predicts adding water to red Jell-O mix will turn the water red. • Says, "If I step on the balloon, it will pop."

Investigation

Standard 2. Tests predictions through exploration and experimentation.

Indicators	Examples
<p>2.1 Uses a variety of appropriate tools and materials to complete a planned task or investigation.</p>	<p>The child</p> <ul style="list-style-type: none"> • Uses a magnifying glass to examine the insects. • Uses tongs to move and examine pieces of a cactus. • Selects a scale to figure out how many small blocks will weigh as much

	as a big block.
2.2 Test predictions through active experimentations.	<p>The child</p> <ul style="list-style-type: none"> • Puts paper clips and coins into the container and then pours water into the container to make it sink. • Mixes blue, orange and red paint to make purple.
2.3 Changes experiment plan if results are different than expected and continues testing.	<p>The child</p> <ul style="list-style-type: none"> • Continues to mix different colors of paint to try to make purple. • Looks for another metal object when the magnet will not stick to the coins.
2.4 Persists with an investigation despite distractions and interruptions.	<p>The child</p> <ul style="list-style-type: none"> • Returns day after day to see if the quail eggs have hatched. • Plants seeds and continues to care for them and observe changes.

Makes and Expresses Conclusions

Standard 3. Forms conclusions about his/her observations and experimentations.

Indicators	Examples
3.1 Compares and contrasts the attributes of objects and living things.	<p>The child</p> <ul style="list-style-type: none"> • While looking at the rocks, child says, “These rocks are hard. This one is shiny; this one isn’t.” • As a result of taking care of animals and plants, child recognizes that both animals and plants need water to live.

3.2 Uses a variety of materials to record and organize data.	<p>The child</p> <ul style="list-style-type: none"> • Uses journals or drawings to record information. • Creates a collection of items.
3.3 Identifies cause and effect relationships.	<p>The child</p> <ul style="list-style-type: none"> • While using a pulley to hoist a bucket, child says, “It fell because I let go of the string.” • Wants mud and adds water to soil.
3.4 Forms logical conclusions about investigations.	<p>The child</p> <ul style="list-style-type: none"> • After placing different objects on a ramp, child concludes that round objects roll down the ramp and flat objects slide down the ramp. • Says, “Your plant died because you didn’t water it.”

Interprets and Shares Learning

Standard 4. Describes, discusses or presents predictions, explanations and generalizations.

Indicators	Examples
4.1 Shares known facts about objects, living things, and other natural events in the environment, through words or pictures.	<p>The child</p> <ul style="list-style-type: none"> • During the reading of a book about a caterpillar, child says, “I saw a caterpillar in my yard.” • Shows his friend his pet bird and says, “It sings.”
4.2 Describes attributes of objects, living things and natural events. (e.g. weight, texture, flavor, scent, flexibility, and sound).	<p>The child</p> <ul style="list-style-type: none"> • Says, “The sun shines in the daytime, it makes things hot.” • Reaches into sensory bag and describes the object inside as bumpy and cold after touching it.

4.3 Displays and interprets data.	<p>The child</p> <ul style="list-style-type: none"> • During a sink/float activity, child places all floating materials on one tray and all sinking items on another tray. • After collecting leaves on a walk, the child comments that he found three different kinds of leaves.
4.4 Presents scientific ideas in a variety of ways.	<p>The child</p> <ul style="list-style-type: none"> • Makes own version of the bird nest with twigs, feathers, and other materials. • After planting seeds and watching them grow, child draws a picture of the plant.