



3–5 Years

Science: Understanding Science Content

WHEN INTRODUCED AND EMPHASIZED: Weeks 12–15, 19–23, 26–28, 32–35, 38–40, and 43–45

BEHAVIORS TO OBSERVE

- Understanding Basic Characteristics of:
 - Living and Nonliving Things
 - Life Cycles
 - Habitats
 - Earth and Space

OBSERVATION OPPORTUNITIES

Understanding Basic Characteristics of Living and Nonliving Things

In what ways does the child show an understanding of basic characteristics of living and nonliving things as he/she:

- responds to questions about living things and nonliving things (Week 12, Day 2 group activity)? Example: “Did the chairs and tables drink and eat anything today? Why not?” Child response “No! They aren’t alive.”
- talks about what living things need, describes what living things do, or compares living things and nonliving things (after Week 12, Day 3)?
- draws and/or describes a picture of the plant’s roots (Week 15, Day 1 center activity)? Example: “I am drawing the roots. Roots help the plant. Plants need food too.”

Understanding Basic Characteristics of Life Cycles

In what ways does the child show a basic understanding of life cycles as he/she:

- converses while eating a meal (after Week 19, Day 3)? Examples: comments about eating different kinds of food as a baby; explaining that eating food helps him/her grow.
- matches baby and adult pictures, and describes similarities and differences between the adults and babies (Week 19, Day 3 center activity)?
- puts the chicken and penguin life cycle sequencing cards in order and/or compares the life cycles of chicken and penguins (Week 20, Day 3 center activity)?
- notices one or more animals outside (any free play period outside after Week 22, Day 1)? Examples: butterfly, bird



Understanding Basic Characteristics of Habitats

In what ways does the child show a basic understanding of habitats as he/she:

- plays with a habitat-related toy(s) (any free play period after Week 26, Day 1)? Example: moves toy fish underwater in water table and says "Fish live in water. Water is a habitat."
- responds to a habitat question as part of transitioning to the next activity (after Week 26, Day 1)? Example: "In what habitat would you find a fish?" Child responds "A water habitat!"
- explores and/or describes the outdoor environment (any free play period outside after Week 27, Day 1)? Example: Child says "It is very hot and dry here. Do we live in a desert?"
- says if a clothing item would keep a scientist warm at the South Pole, or explains why an item would or would not keep a scientist warm at the South Pole (Week 32, Day 3 group activity)?
- draws rainforest animals or plants in his/her science journal (Week 33, Day 3 center activity)?
- pretends to be a mountain sheep (Week 34, Day 3 center activity)?

Understanding Basic Characteristics of Earth and Space

In what ways does the child show a basic understanding of earth and space as he/she:

- identifies and/or describes the sun, moon, or shadows (any free play period outside after Week 38, Day 3)?
- describes the weather (any free play period after Week 39, Day 2)?
- responds to a question as part of transitioning to the next activity (after Week 40, Day 2)? Example: "What season would we see leaves turn color?" Child responds "Fall!"
- identifies items he/she is recycling in making a trash collage (Week 43, Day 3 group activity)?
- converses at a mealtime about how soil helps plants grow (after Week 44, Day 2)?
- describes similarities and differences between rocks (Week 45, Day 3 center activity)?

FOLLOW-UP LEARNING SUPPORTS

Reinforce

The following activities are designed to support the ongoing development of knowledge of basic concepts.

Understanding Basic Characteristics of Living and Nonliving Things

- Encourage children to draw pictures of living things and to describe how the item drawn breathes and grows. Also, encourage children to describe the food needed by the living thing in their picture.
- Encourage children to play a game of *I Spy*, describing something as living or nonliving in addition to other characteristics of the chosen item.



- Invite families to hunt for living things around their home. Encourage families to print or draw pictures of living things for children to bring and discuss in their classroom.

Understanding Basic Characteristics of Life Cycles

- Encourage children to compare the time that different animals take to complete their life cycles as they work with the adult/baby animal cards provided in the center activity of Week 19, Day 3.
- Encourage children to take a leadership role in listing what they know about frogs in the Week 21, Day 1 group activity.
- Encourage children to describe someone they know in each of the stages of the life cycle.
- Invite children to describe the life cycle stages of dogs, chickens, and frogs as they sequence the bean life cycle sequencing cards in the center activity on Week 23, Day 1. Encourage children to compare the time that it takes the various living things to advance through the life cycle stages.

Understanding Basic Characteristics of Habitats

- Encourage children to look at the fish in your room or pictures of fish in books. Invite children to describe survival strategies of different animals that live in water habitats.
- Encourage children to tell what they know about desert habitats as they play in the sand (indoors or outdoors).
- Invite children to play with forest animal toys and describe what materials a forest animal could use to make a home.
- As part of Week 32's center activities, invite children to tell whether and why they would want to live in a polar habitat. Is there a different habitat they would like to live in? Why?
- Invite a child to tell about an animal and/or plant that lives in his/her preferred habitat.
- Encourage children to draw pictures in their science journals of plants or animals that live in their preferred habitats.

Understanding Basic Characteristics of Earth and Space

- Provide sidewalk chalk for children to draw each other's shadows. Encourage children to discuss why it would be challenging to draw their own shadows.
- Invite children to play *Shadow Tag*.
- Use a foggy day to discuss fog.
- Provide books about weather, such as *Snow is Falling* by Franklyn M. Branley, *Rain* by Erin Edison, *Clouds (Weather Basics)* by Erin Edison, or *Wind (Weather Basics)* by Erin Edison, for children to explore.



- Extend your focus on seasons by further exploring the current season. Bring materials inside to study with magnifying glasses, scales, or other science tools. Provide journals and pencils for children to draw what they are learning.
- Provide seasonal clothes and props. Invite children to pretend to do activities typical of the season in your area, such as using a rake in the fall.
- Supply the art area with clean trash materials for children to make art projects.
- Invite children to compare and contrast different soils by providing three bags of soil: one with rocky soil, one with rich, dark soil, and one with lighter-colored soil. Invite children to explain why they think plants might grow better in one soil versus another, and why one soil might work better for animal homes.
- Introduce how a type of soil called clay is used to make bricks. Deepen children's understanding of how natural resources can be used as building materials by providing *Houses and Homes* by Ann Morris.

Reintroduce

The following activities are designed to support the development of understanding of basic characteristics of living and nonliving things, life cycles, habitats, and earth and space among children who find it challenging to understand the basic characteristics. The activities are also appropriate for all children.

Understanding Basic Characteristics of Living and Nonliving Things

- Week 12, Days 1–3 group activities focus on living things. Use the group activity that addresses the concept that children are struggling to understand. Examples: Repeat Week 12, Day 1 if children are struggling to understand that a living thing needs food. Repeat Week 12, Day 3 if children are struggling to understand that a living thing grows and can help make another living thing like itself.
- Repeat Week 15, Day 1 group activity. Remind children that a plant is a living thing that grows. Use the plan to review how different parts of the plant help it grow.

Understanding Basic Characteristics of Life Cycles

- Repeat the Week 19, Day 1 group activity. Remind the child what a life cycle is. Help the child understand that he/she is growing and changing as part of his/her life cycle.
- Place a mark and child's name on chart paper to indicate the height of each child. Revisit the chart paper every 4–6 weeks to note any height changes.
- Repeat the Week 19, Day 3 group activity. Emphasize the concept of a stage. Remind children that plants grow faster than most animals.
- Use Week 20, Day 1 group activity to remind children of the life cycle stages of animals that hatch from eggs.



- Repeat the Week 21, Day 2 group activity. Emphasize that some living things do not look like their parents when they hatch from eggs. Remind children of the life cycle stages of frogs.
- Repeat the Week 23, Day 1 group activity to remind children of life cycle stages for living things that begin as seeds.

Understanding Basic Characteristics of Habitats

- Repeat the Week 26, Day 1 group activity. Emphasize the concept of a habitat.
- Use portions of activity plans for habitat(s) that seem to be challenging for children to understand (Weeks 26, 27, 28, 32, 33, and 34).
- Place binoculars near a window to promote learning about the habitat around your center. Talk with children about how animals and plants live in your habitat.
- Provide and encourage use of books about animals and plants that live in your habitat. Talk with children about animal and plant characteristics that help them survive in your habitat.

Understanding Basic Characteristics of Earth and Space

- Review highlights of the Week 38, Day 1 activity plan to support children's understanding of differences between daytime and night.
- Review one or more activity plans that introduce the concept of weather (Week 39) or season (Week 40). Examples: Week 39, Day 1 introduces characteristics of rain; Week 40, Day 1 introduces the concept of a season, as well as characteristics of spring.
- Use Week 43, Day 1 to remind children about the importance of recycling. Reintroduce the words trash, garbage, dumpster, landfill, and recycle. Consider reading a different book on recycling, such as *Michael Recycle* by Ellie Bethel or *Recycle* by Gail Gibbons.
- Use the Week 44, Day 1 plan to review natural resources and nature. You may wish to use the five bags of soil previously prepared for this activity.
- Review the characteristics of rocks and pebbles with the Week 45, Day 3 activity plan.