



SCIENCE

FOR FAMILIES

YOU ARE your child's first teacher. Learn how to support the goals of Oklahoma's academic standards and why they are important for your child. Please be in regular communication with your child's teachers and ask how you can support science learning at home. When schools and families work together as partners, it helps your child achieve academic excellence!

PRE-KINDERGARTEN

What to expect:

Science learning is particularly important in Pre-K because at this age, children have a natural curiosity about the world around them and a willingness to learn and be taught.

Children in Pre-K should be encouraged to make observations and describe how they are interacting with their surroundings. Provide positive responses when they say things like "A plastic spoon feels different than a metal spoon," "I am warmer when I put on a coat" and "A puddle splashes when I jump in it."

This information is a snapshot of learning in Pre-K science. For a complete set of science academic standards, click [here](#) or visit sde.ok.gov/oklahoma-academic-standards.

By the end of the school year, your child will:

- Express curiosity about the natural environment through observation and active play.
- Begin to participate in simple investigations like predicting what might happen next and testing observations.
- Start putting items that are important in a child's world (toys, pets and foods, for example) into categories based on observable features.
- Talk about major features of the earth's surface (streams, hills, etc.) found in your daily natural environment.

What to do at home:

- Ask questions about the things your child is interested in and what he or she observes about the world.
- Describe where to find familiar plants and animals in your neighborhood or area.
- Talk about things your child observes about the different seasons.
- Encourage questions and make time for problem-solving to help your child find answers to questions.



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Fostering Curiosity

Children are naturally curious and motivated to learn about things that interest them. Since curiosity contributes to success in the classroom, it is important to encourage it at home. Play is a wonderful way to nurture curiosity in young children, so be sure to allow plenty of playtime. Encourage your child to ask questions, discover answers and explore the world.

Cultivate your child's curiosity with guiding questions like these:

- When you look around, do you see things that are alike or different?
- What do you see when you look outside?
- What do you like to do?

Your child will have plenty of questions. It's okay if you don't have the answer every time. The best response is always, "Let's find out together."

Fostering Communication

Increase vocabulary, thinking skills and curiosity by using new words and having conversations that include questions that make your child think. Communicating with others gives children a chance to see and understand that there can be more than one idea on a given subject. Accepting these different ideas helps children learn how to get along with others. This acceptance fosters positive relationships with peers and strong self-image.

Cultivate your child's communication skills with questions like these:

- What fruit would you like to eat for lunch?
- Do you think you will need a jacket today?
- What was your favorite part of the day and why?
- How did you help someone today?

Fostering Comprehension

It is important to give young children the opportunity to explore books. As you sit down to read together, encourage your child to flip through the pages and discuss what he or she sees. Use the following questions as a guide as you talk about the books you are reading together.

BEFORE READING

- What do you see on the cover?
- What do you think the book will be about?

DURING READING

- Who is in the book?
- What has happened so far?

AFTER READING

- Did you like reading this book? Why or why not?
- What was your favorite part of the book?

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KINDERGARTEN

What to expect:

Kindergarten is when children begin to grow academically, socially and emotionally in a structured learning environment. Families play an important role in that growth as they model positive learning behaviors and become involved in school activities.

Science can encourage and expand this natural curiosity. Ask your kindergartner questions like "What happens if you push or pull an object harder?", "Where do animals live, and why do they live there?" and "What is the weather like today, and how is it different than yesterday?"

This information is a snapshot of learning in kindergarten science. For a complete set of science academic standards, click [here](#) or visit sde.ok.gov/oklahoma-academic-standards.

By the end of the school year, your child will:

- Develop an understanding of patterns and changes in local weather and the purpose of weather forecasting to prepare for, and respond to, severe weather.
- Understand how different strengths or directions of pushes and pulls change the motion of an object.
- Develop an understanding of what plants and animals (including humans) need to survive and the relationship between their needs and where they live.

What to do at home:

- Work with your child to draw what the weather looks and feels like several days in a row.
- Kick a soccer ball and talk about how a harder kick makes the ball go farther.
- Walk around your neighborhood or a local park and name the animals and plants you see, then talk about why the neighborhood or park is a good place for them to live.



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Fostering Curiosity

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Cultivate your child's curiosity with guiding questions like these:

- What do you wonder about?
- What patterns do you see when you look outside?
- What book do you want to read today?

Your child will have plenty of questions. It's okay if you don't have the answer every time. The best response is always, "Let's find out together."

Fostering Communication

Increase vocabulary, thinking skills and curiosity by using new words and having conversations that include questions that make your child think. Communicating with others gives children a chance to see and understand that there can be more than one idea on a given subject. Accepting these different ideas helps children learn how to get along with others. This acceptance fosters positive relationships with peers and strong self-image.

Cultivate your child's communication skills with questions like these:

- What is your favorite food and why?
- What rule have you followed today?
- How did you help someone today?

Fostering Comprehension

Kindergartners are developing beginning reading skills and an enjoyment of reading. Make time to explore books, magazines and other types of print with them and encourage conversations as you read together. Use the following questions to help your child better understand what he or she is reading.

BEFORE READING

- What do you think this book is about?
- What does this book remind you of?

DURING READING

- What do you think will happen next?
- Where and when does the story take place?

AFTER READING

- What happened in the beginning, middle and end?
- What was your favorite part of the book and why?

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FIRST GRADE

What to expect:

In first grade, children become more independent as their reading skills improve and they are able to focus for longer periods of time. Building upon science skills from kindergarten, first-graders continue to expand their understanding of the world around them.

By observing the world, first-graders can come up with possible answers to questions such as “What happens when there is no light?”, “What are some ways plants and animals meet their needs so that they can survive and grow?” and “How are parents and their offspring similar and different?” First-graders will be active learners who are doing science to learn science.

This information is a snapshot of learning in first-grade science. For a complete set of science academic standards, click [here](#) or visit sde.ok.gov/oklahoma-academic-standards.

By the end of the school year, your child will:

- Investigate the relationship between sound and vibration and the connection between light and our ability to see objects.
- Increase understanding of how plants and animals use the outermost parts of their body to help them survive, grow and meet their needs.
- Examine the ways parents help their offspring survive and study how young plants and animals are similar to, but not exactly the same as, their parents.
- Observe, describe and predict patterns in the movement of objects in the sky (the moon, stars, sun, etc.).

What to do at home:

- Explore the sounds made by everyday objects and instruments such as tuning forks and stretched strings and ask your child to identify them.
- Go on nature walks and ask your child to describe plant and animal parts and how they might help them survive. For example: Roses have sharp thorns that hurt, which might discourage people from picking them.
- Observe the sun, moon and stars and ask your child to describe the differences in their appearance or location from observation to observation.
- Go to the zoo or watch videos of baby animals and their parents and describe how they interact. Ask your child to describe the ways baby animals and parents look alike and different.

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Cultivate your child's curiosity with guiding questions like these:

- What are you interested in knowing more about?
- What else does that make you think of?
- Where do you think we can learn more about these things?

Your child will have plenty of questions. It's okay if you don't have the answer every time. The best response is always, "Let's find out together."

Fostering Communication

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Cultivate your child's communication skills with questions like these:

- Who did you play with today? What did you play?
- What was your hardest rule to follow today? Why was it hard?
- What was your favorite part of the day and why?
- Can you tell me an example of kindness you saw and/or showed today?

Fostering Comprehension

Children who are on their way to becoming independent readers need time to read alone and with others. Families should take time to talk about books, magazines and other types of print with young readers. Use the following questions to help your first-grader better understand what he or she is reading.

BEFORE READING

- What do you think this book is about?
- What do you think will happen?
- Why did you pick this book?

DURING READING

- What has happened so far?
- What do you think will happen next?
- Where and when does the story take place?

AFTER READING

- What happened in the beginning, middle and end?
- What did you learn from the book?
- Does it remind you of any other books you have read?

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SECOND GRADE

What to expect:

In second grade, children begin to ask bigger and deeper questions as they broaden their knowledge of the world. Science education plays an important role in supporting the development of language and literacy skills by exposing your child to words connected to classroom observations. Science education helps second-graders formulate answers to questions like: “How does land change, and what causes it to change?” and “What do plants need to grow?”

This information is a snapshot of learning in second-grade science. For a complete set of science academic standards, click [here](#) or visit sde.ok.gov/oklahoma-academic-standards.

By the end of the school year, your child will:

- Develop an understanding of what plants need to grow and how they depend on animals for seed dispersal and pollination.
- Develop an understanding of observable properties of materials through study and classification of them. Students might observe color, texture, hardness and flexibility, study the similar properties different materials share or investigate ice and snow melting or frozen objects thawing.
- Understand that wind and water can change the shape of the land and compare possible solutions that could slow or prevent such change.
- Use information and models to identify and represent shapes and kinds of landforms (plains, hills, mountains) and bodies of water. Using maps, be able to locate where water is found on Earth.

What to do at home:

- Grow plants in a box garden or in planters and ask your second-grader to discuss things that will help the plants grow.
- Go on a nature walk in the neighborhood or a park and write down the different plants, insects and animals you see. Then go to a different neighborhood or park and find out if the same plants, insects and animals are present. Write down what you find.
- Go on a scavenger hunt in the kitchen and ask your child to put all the bowls, utensils, pots and pans in groups based on similarities and differences.
- Be on the lookout for how things change outside after a windy day or a strong rain. Ask your child to describe those differences and how the wind or water might have caused the change.

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Cultivate your child's curiosity with guiding questions like these:

- What do you notice or wonder about in your community?
- What new words or new things have you discovered?
- How can you solve the problems you see?

Your child will have plenty of questions. It's okay if you don't have the answer every time. The best response is always, "Let's find out together."

Fostering Communication

Increase vocabulary, thinking skills and curiosity by using new words and having conversations that include questions that make your child think. Communicating with others gives children a chance to see and understand that there can be more than one idea on a given subject. Accepting these different ideas helps children learn how to get along with others. This acceptance fosters positive relationships with peers and strong self-image.

Cultivate your child's communication skills with questions like these:

- If you switched places with your teacher tomorrow, what would you teach the class?
- What was the best thing that happened today? What was the worst?
- Did you learn something that challenged you today or was there something you didn't understand?

Fostering Comprehension

As children continue to strengthen their reading skills, they benefit from reading independently and with adults. Exposing children to a variety of print materials such as books, magazines, etc., allows them to explore new words and ideas. Use the following questions to help your second-grader better understand what he or she is reading.

BEFORE READING

- What do you think this book is about?
- What do you think will happen?
- What kind of book is this?

DURING READING

- What do you think will happen next?
- Where and when does the story take place?
- What do you notice about the characters?

AFTER READING

- Why do you think the author wrote this book?
- What happened in the beginning, middle and end?
- What was your favorite part of the book?

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