



COMPUTER SCIENCE

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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 to your child. Please be in regular communication with your child's teachers and ask how you can support computer science education at home. When schools and families work together as partners, your child experiences greater academic success!

KINDERGARTEN

What to expect:

Kindergarten is an exciting time for children to grow academically and socially. Families play a vital role by encouraging curiosity and problem-solving at home. Computer science fosters creativity and logical thinking. Ask questions like, "How do computers help us?" to spark discussions.

Learning goals:

- Identify and use common computing devices and components, such as keyboards, mice, and touchscreens.
- Follow step-by-step instructions (algorithms) to complete simple tasks, such as moving a character in a game or arranging pictures in order.
- Recognize that computers store information and, with guidance, learn how to open, modify, and save a file.
- Explore how computers and technology help people in their daily lives.
- Understand basic internet safety rules, including treating others kindly and telling a grown-up if something seems unsafe or upsetting.
- Collect and display data using visual representations.

What to do at home:

- Let your child explore a keyboard, mouse, or touchscreen and name the parts they see.
- Play games that involve sequencing, such as arranging story pictures in order or giving step-by-step directions for a simple task.
- Have your child open a drawing app, create a picture, and save it with a name they choose.
- Use household objects (like toy robots or action figures) to act out simple programs by giving movement instructions.
- Encourage curiosity by discussing how technology helps us every day, such as how a microwave follows steps to cook food.



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Fostering Curiosity

Children are naturally curious and motivated to learn about things that interest them. Computer science builds on this curiosity by encouraging problem-solving and creativity. Let your child explore how technology works and ask questions about the devices they see in daily life.

Support your child's curiosity with questions like:

- What happens when you press different buttons on the tablet or keyboard?
- How do we give computers instructions to follow?
- What do you think happens inside a computer when it turns on?

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

Fostering Communication

Build your child's vocabulary, thinking skills, and curiosity by using new words and having conversations that include questions to make your child think. Communicating with others gives children a chance to see and understand that there can be more than one point of view about a given subject. Accepting different ideas helps children learn how to get along with others, encouraging positive relationships with other children and a strong self-image.

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

- Can you describe what a computer does?
- How did you solve that problem?
- What steps did you take to finish that activity?

Fostering Comprehension

Making connections between computer science and the real world helps children see its importance. Encourage your child to relate their learning to everyday experiences.

- Connect computer science with math by organizing objects into groups and creating pictographs (simple chart that uses pictures or symbols to represent data).
- Connect computer science with storytelling by having your child sequence events or create a story map (visual organizer that helps children understand and retell a story by showing key parts like beginning, middle, and end).



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FIRST GRADE

What to expect:

First grade is when children begin to develop more independence with technology and problem-solving skills. Families play a vital role in encouraging exploration and safe technology use at home. Computer science helps children think logically and creatively. Ask questions like, “How do computers help us solve problems?” to spark meaningful discussions.

Learning Goals:

- Learn how to use and take care of common technology like a mouse, keyboard, and touchscreen.
- Understand how devices share information and why strong passwords help keep information safe.
- Practice opening, changing, and saving files with simple names, and learn to collect and show data using charts or graphs.
- Follow and create clear steps to solve problems using patterns and repetition.
- Explore how we use technology every day and how to stay safe and respectful online.

What to do at home:

- Identify parts of digital devices and practice fixing simple issues, like no sound or apps not working.
- Show how devices share information (like viewing the same photo on a phone and tablet) and create strong passwords together.
- Collect family data (like favorite foods), make charts and graphs, and discuss what the data shows.
- Write step-by-step instructions for everyday tasks with repeated steps and break big problems into smaller parts.
- Talk about how your family uses technology daily and explore how tools like voice assistants help people work more efficiently.



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Fostering Curiosity

Children are naturally curious and motivated to learn about things that interest them. Computer science builds on this curiosity by encouraging problem-solving and creativity. Let your child explore how technology works and ask questions about the devices they see in daily life.

Support your child's curiosity with questions like:

- What do you think happens when computers connect to each other?
- How could we break down this problem into smaller steps?
- How do you think AI assistants like voice speakers know how to answer questions?

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

Fostering Communication

Build your child's vocabulary, thinking skills, and curiosity by using new words and having conversations that include questions to make your child think. Communicating with others gives children a chance to see and understand that there can be more than one point of view about a given subject. Accepting different ideas helps children learn how to get along with others, encouraging positive relationships with other children and a strong self-image.

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

- Can you explain the steps you took to solve that problem?
- How do you think this device connects to other devices?
- What would happen if we changed the order of these instructions?

Fostering Comprehension

Making connections between computer science and the real world helps children see its importance. Encourage your child to relate their learning to everyday experiences.

- Connect computer science with math by collecting and displaying data in charts or graphs, like tracking daily temperatures or favorite foods.
- Connect computer science with digital citizenship by discussing appropriate online behavior and the importance of keeping passwords private.
- Explore emerging technologies together by discussing how AI tools can recognize patterns in information or help people complete tasks more efficiently.



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SECOND GRADE

What to expect:

Second grade is when children develop more independence with selecting and using appropriate technology tools. Families play a vital role in encouraging exploration and safe technology use at home. Computer science helps children think logically and creatively. Ask questions like, “How do we choose the right technology for different tasks?” to spark meaningful discussions.

Learning Goals:

- Choose the right device for a task, name basic parts of a computer, and fix simple issues like when a program won't work.
- Learn how devices share information and why strong passwords help keep information and devices safe.
- Organize digital files, collect data to make simple charts, and understand what the data shows.
- Write step-by-step instructions, break big problems into parts, and use correct computer terms when troubleshooting.
- Explore how technology changed daily life, practice good online behavior, and find ways to stay safe online.

What to do at home:

- Talk about which devices work best for tasks—like using a tablet for reading or a computer for writing—and why.
- Identify basic computer parts and devices (like where information is stored or printed) and practice fixing simple tech issues.
- Create family folders for photos or files, and collect daily data to make simple charts or graphs.
- Write and follow step-by-step instructions for everyday tasks—like making a sandwich—and break big tasks into smaller parts.
- Discuss how technology has changed life; set online behavior rules; and practice staying safe on the internet.



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Fostering Curiosity

Children are naturally curious and motivated to learn about things that interest them. Computer science builds on this curiosity by encouraging problem-solving and creativity. Let your child explore how technology works and ask questions about the devices they see in daily life.

Support your child's curiosity with questions like:

- How do you think different computers connect to share information?
- What parts of this problem could we solve first before tackling the whole thing?
- How do you think AI tools like voice assistants or smart devices learn to recognize patterns?

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

Fostering Communication

Build your child's vocabulary, thinking skills, and curiosity by using new words and having conversations that include questions to make your child think. Communicating with others gives children a chance to see and understand that there can be more than one point of view about a given subject. Accepting different ideas helps children learn how to get along with others, encouraging positive relationships with other children and a strong self-image.

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

- Why did you choose this device instead of another one for this task?
- Can you explain the steps in your algorithm (step-by-step instructions) that would help someone else follow them?
- How might we improve this program if it's not working correctly?

Fostering Comprehension

Making connections between computer science and the real world helps children see its importance. Encourage your child to relate their learning to everyday experiences.

- Connect computer science with math by collecting family data (like daily screen time or books read) and creating bar graphs or charts to visualize patterns.
- Connect computer science with digital citizenship by creating a family code of conduct for online behavior and discussing the importance of reporting inappropriate content.
- Explore emerging technologies together by discussing how AI and smart devices can help people complete tasks more efficiently or assist those with different abilities.



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THIRD GRADE

What to expect:

Third grade is when children begin to develop more sophisticated technology skills and understanding. Children learn to select appropriate tools for specific tasks, understand information flow, and solve problems through programming. Families play a vital role in exploring technology and developing good digital citizenship at home. Computer science helps children think analytically and creatively. Ask questions like, “How does information travel between devices?” to spark meaningful discussions.

Learning Goals:

- Choose the right technology tools for different tasks.
- Learn how information moves through wires or wirelessly, and understand the importance of using devices responsibly and safely.
- Understand that different kinds of information are stored in different ways, organize data using charts or graphs, and make predictions with that data.
- Create programs using steps, loops, and choices, and break big problems into smaller steps.
- Explore how technology changed daily life and practice good online behavior.

What to do at home:

- Talk about which devices are best for different tasks and how parts of a computer work together.
- Discuss how devices connect (like Wi-Fi or cables) and set family rules for using technology responsibly.
- Organize digital photos or files, and create simple charts (like favorite foods) to spot patterns or make guesses.
- Write step-by-step instructions for chores or games using “if-then” ideas, and practice fixing any mistakes.
- Share how technology has changed since you were a kid and talk about safe online behavior.



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Fostering Curiosity

Children are naturally curious and motivated to learn about things that interest them. Computer science builds on this curiosity by encouraging problem-solving and creativity. Let your child explore how technology works and ask questions about the devices they see in daily life.

Support your child's curiosity with questions like:

- How do you think information travels from one device to another?
- What would happen if we changed part of these instructions? How would the outcome change?
- How might AI tools help people with different abilities use technology more easily?

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

Fostering Communication

Build your child's vocabulary, thinking skills, and curiosity by using new words and having conversations that include questions to make your child think. Communicating with others gives children a chance to see and understand that there can be more than one point of view about a given subject. Accepting different ideas helps children learn how to get along with others, encouraging positive relationships with other children and a strong self-image.

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

- Can you explain how information flows through the hardware and software to accomplish this task?
- What variables could we change in this set of instructions to get a different result?
- How could we modify this program to make it work better?

Fostering Comprehension

Making connections between computer science and the real world helps children see its importance. Encourage your child to relate their learning to everyday experiences.

- Connect computer science with math by using data to make predictions about family activities (like how many books you'll read this month based on past reading habits).
- Connect computer science with digital citizenship by talking about why it's important to give credit when using things like online pictures, videos, or music, and to respect others' work.
- Explore emerging technologies together by discussing how AI and smart devices can help solve everyday problems (e.g., voice assistants or robot vacuums).



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FOURTH GRADE

What to expect:

Fourth grade is when children build on their technology skills and deepen their understanding. Children learn to select appropriate tools for different tasks, understand how information flows through networks, work with data, and create more complex programs. Families play a vital role in exploring technology and developing good digital citizenship at home. Computer science helps children think analytically and creatively. Ask questions like, “How do different devices communicate with each other?” to spark meaningful discussions.

Learning Goals:

- Talk about which devices work best for different tasks and how to solve simple technology problems.
- Discuss how information travels between devices and the importance of online safety.
- Organize digital information and use data to make predictions and answer questions.
- Write step-by-step instructions for computers, including choices and repetition, and break big problems into smaller parts.
- Explore how technology affects society and practice good digital citizenship.

What to do at home:

- Talk about which devices work best for different tasks and practice fixing simple tech issues together.
- Discuss how information moves between devices and review family rules for staying safe online.
- Help organize digital files and make simple charts to find patterns in everyday information.
- Write step-by-step instructions for daily tasks using “if-then” logic (such as choices) and break big jobs into smaller steps.
- Talk about how technology has changed and how tools like voice assistants can help people.



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Fostering Curiosity

Children are naturally curious and motivated to learn about things that interest them. Computer science builds on this curiosity by encouraging problem-solving and creativity. Let your child explore how technology works and ask questions about the devices they see in daily life.

Support your child's curiosity with questions like:

- How do you think information travels across the internet?
- What would happen if we changed this part of the program? How could we improve it?
- How might AI and emerging technologies help solve problems in our community?

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

Fostering Communication

Build your child's vocabulary, thinking skills, and curiosity by using new words and having conversations that include questions to make your child think. Communicating with others gives children a chance to see and understand that there can be more than one point of view about a given subject. Accepting different ideas helps children learn how to get along with others, encouraging positive relationships with other children and a strong self-image.

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

- Can you explain how this information travels from one device to another in packets?
- What different options or conditions could we include in our program to help solve this problem?
- How could we modify this program to make it work better for people with different needs?

Fostering Comprehension

Making connections between computer science and the real world helps children see its importance. Encourage your child to relate their learning to everyday experiences.

- Connect computer science with math by creating visual charts of family data (like weekly screen time) and using it to make predictions or identify patterns.
- Connect computer science with digital citizenship by discussing the importance of being respectful online and giving credit to others when using or adapting their work, like images, music, or code.
- Explore emerging technologies together by discussing how AI and smart devices can be designed to be more accessible for people with different abilities.



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FIFTH GRADE

What to expect:

Fifth grade is when children build on their technology foundation and expand their digital skills. Children learn to select efficient computing systems for various tasks, understand how information is transmitted as bits, analyze data to make informed decisions, and create more complex programs with variables and conditionals. Families play a vital role in exploring technology and fostering responsible digital citizenship at home. Computer science helps children develop analytical thinking and creative problem-solving abilities. Ask questions like, "How do computers break down information to send it across networks?" to spark meaningful discussions.

Learning Goals:

- Choose the right digital tools for different jobs and learn how computers process information.
- Understand how information moves safely between devices across the internet.
- Work with data to make charts, spot patterns, and support ideas.
- Write step-by-step instructions with choices and repetition for computers, and break big problems into smaller parts.
- Discuss how technology affects our daily lives and practice being responsible digital citizens.

What to do at home:

- Talk about which devices work best for tasks (like streaming vs. typing) and practice solving simple tech issues together.
- Discuss how information moves between devices and review family rules for protecting personal information online.
- Help organize files by size or purpose (like photographs vs. documents) and make simple charts to find patterns in everyday data.
- Write step-by-step instructions using choices and repetition (like packing for weather) and break big tasks into smaller steps.
- Talk about how AI tools (like voice assistants) are changing daily life and how they can be improved.



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Fostering Curiosity

Children are naturally curious and motivated to learn about things that interest them. Computer science builds on this curiosity by encouraging problem-solving and creativity. Let your child explore how technology works and ask questions about the devices they see in daily life.

Support your child's curiosity with questions like:

- How do you think computers break down and reassemble information when accessing the internet
- What might happen if we modified this algorithm (step-by-step instructions) to make it more efficient
- How could AI and emerging technologies help solve different accessibility challenges?

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

Fostering Communication

Build your child's vocabulary, thinking skills, and curiosity by using new words and having conversations that include questions to make your child think. Communicating with others gives children a chance to see and understand that there can be more than one point of view about a given subject. Accepting different ideas helps children learn how to get along with others, encouraging positive relationships with other children and a strong self-image.

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

- Can you explain how information is broken down into bits and packets when sent between devices?
- What variables or conditions could we include in our program to help solve this problem?
- How could we modify this program to make it work better for people with different needs?

Fostering Comprehension

Making connections between computer science and the real world helps children see its importance. Encourage your child to relate their learning to everyday experiences.

- Connect computer science and math by collecting data as a family (like favorite foods or screen time), creating a simple chart or graph, and talking about how data can lead to better conclusions.
- Connect computer science with digital citizenship by discussing the importance of being respectful online and giving credit to others when using or adapting their work, like images, music, or code.
- Explore emerging technologies together by discussing how AI and smart devices learn from data.



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SIXTH GRADE

What to expect:

Sixth grade is when children deepen their understanding of computing systems and develop more sophisticated programming skills. Children learn to evaluate devices, model data transfer methods, resolve technology issues, create complex programs with variables, and understand computing's impact on society. Families play a vital role in exploring technology and fostering responsible digital citizenship at home. Computer science helps children develop analytical thinking skills and prepare for future careers. Ask questions like, "How do you think information stays secure when traveling between devices?" to spark meaningful discussions.

Learning Goals:

- Compare how different devices are used and how hardware and software work together to share information.
- Explore how data travels safely online and ways to protect personal information.
- Create visual displays of data to help solve problems and make predictions.
- Develop step-by-step programs using repetition, choices, and variables.
- Discuss how computing affects daily life and careers, and practice being safe and responsible online.

What to do at home:

- Explore how your family uses devices and talk about ways to improve them.
- Talk about safe websites (look for the lock icon) and how encryption (scrambling data for security) works.
- Organize the same information in different ways (like lists, charts, or graphs) to find patterns.
- Write step-by-step instructions for everyday tasks using repetition and choices (like "if... then").
- Discuss how AI (artificial intelligence) and new technology are changing jobs and how to be safe and respectful online.



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Fostering Curiosity

Children are naturally curious and motivated to learn about things that interest them. Computer science builds on this curiosity by encouraging problem-solving and creativity. Let your child explore how technology works and ask questions about the devices they see in daily life.

Support your child's curiosity with questions like:

- How do you think secure websites protect your information when you are online?
- What might happen if we changed certain variables in this algorithm?
- How could AI and emerging technologies transform careers in the future?

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

Fostering Communication

Build your child's vocabulary, thinking skills, and curiosity by using new words and having conversations that include questions to make your child think. Communicating with others gives children a chance to see and understand that there can be more than one point of view about a given subject. Accepting different ideas helps children learn how to get along with others, encouraging positive relationships with other children and a strong self-image.

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

- How could we model the way information is broken into packets when sent between devices?
- What recommendations would you make to improve this device based on how you use it?
- How could AI or emerging technologies be designed to meet the needs of different users?

Fostering Comprehension

Making connections between computer science and the real world helps children see its importance. Encourage your child to relate their learning to everyday experiences.

- Connect computer science and math by collecting simple data (like weather or family exercise habits), creating different visuals (like charts or graphs), and talking about how the information could help you make predictions.
- Connect computer science with digital citizenship by discussing the importance of being respectful online and giving credit to others when using or adapting their work, like images, music, or code.
- Explore emerging technologies by discussing how AI and smart devices could be improved to support accessibility and different careers.



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