WHAT WE LEARN IN
# ELEMENTARY COMPUTER SCIENCE

K

COMPUTERS! | *Computing devices and their parts*

LOOK WHAT COMPUTERS CAN DO! | *How to use a computer*

ALGORITHMS ARE EVERYWHERE | *Algorithms in everyday life*

KINDERGARTENERS CAN CODE | *Simple coding*

1

KEEPING MY DATA SAFE | *Passwords protect information stored as data*

COMPUTER POWER | *Using computers for various tasks*

SHOW ME THE DATA | *Collection and application of data*

KIDS CREATE CODE | *Planning, developing, and debugging programs*

2

KEEPING MY DATA SAFE | *Passwords protect information stored as data*

TECHNOLOGY TRANSFORMS LIVES | *Technology's impact on people's lives & work*

CREATE & COMMUNICATE CODE | *Responsibly & thoughtfully developing programs*

3
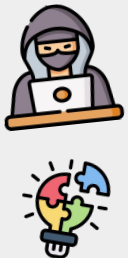
PROTECT YOUR DATA | *Digital information & cybersecurity (internet safety)*

HOW DO COMPUTERS WORK? | *How hardware and software interact*

LOOK AT WHAT WE CAN PROGRAM | *Creating programs*

4

IMPACTS OF COMPUTING | *How computers work & cybersecurity (internet safety)*

THE POWER OF DATA | *Using and organizing data*

THE POWER OF PROGRAMMING | *Creating programs*

THE POWER OF REMIXING | *Remixing programs to develop something new*

5

TECHNOLOGY AND SOCIETY | *The impacts of technology*

MAKING TECH BETTER FOR ALL | *Improving technology for a diverse world*

THE POSSIBILITIES OF PROGRAMMING | *Creating programs*

Adams12 Five Star Schools

Learning that repeats between units or grades provides students with multiple opportunities to learn the content with increasing complexity and/or various applications.

WHAT WE LEARN IN
KINDER COMPUTER SCIENCE

Adams 12
Five Star Schools

UNIT 1
COMPUTERS!
A study of computing devices and their parts.

I can…
- use the right vocabulary when describing the basic parts of a computer and what they do.
- explain what passwords are and why we use them.
- use a unique password to protect devices and information.

UNIT 2
LOOK WHAT COMPUTERS CAN DO!
A study of how to use a computer.

I can…
- select and use software for a variety of tasks.
- recognize that users have different needs and preferences for the technology they use.
- explain basic problems with computer parts and software using the right vocabulary.
- save, copy, find, edit, and delete information using technology and define that information as data.
- model every day activities by creating and following algorithms (sets of step-by-step instructions).

UNIT 3
ALGORITHMS ARE EVERYWHERE
A study of algorithms in everyday life.

I can…
- model every day activities by creating and following algorithms (sets of step-by-step instructions).
- model the way programs save and use data by using numbers or other symbols to show information.
- decompose (break down) the steps needed to solve a problem to create instructions that are clear and in the right order.
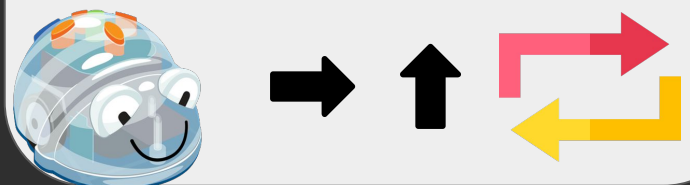
UNIT 4
KINDERGARTENERS CAN CODE
A study of simple coding.

I can…
- decompose (break down) the steps needed to solve a problem to create instructions that are clear and in the right order.
- develop programs with sequences and simple loops, to share ideas or tackle a problem.
- debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.

Learning that repeats between units or grades provides students with multiple opportunities to learn the content with increasing complexity and/or various applications.

WHAT WE LEARN IN
1ST GRADE COMPUTER SCIENCE

Adams12
Five Star Schools

UNIT 1
KEEPING MY DATA SAFE
A study of passwords to protect information stored as data.

I can…

- explain what passwords are and why we use them.
- use a unique password to protect devices and information.
- keep login information private, and log off of devices when I'm done using them.
- save, copy, find, edit, and delete information using technology and define that information as data.

UNIT 2
COMPUTER POWER
A study of using computers for various tasks.

I can…

- select and use software for a variety of tasks.
- recognize that users have different needs and preferences for the technology they use.
- use the right vocabulary when describing the basic parts of a computer and what they do.
- explain basic problems with computer parts and software using the right vocabulary.
- save, copy, find, edit, and delete information using technology and define that information as data.

UNIT 3
SHOW ME THE DATA
A study of the collection and application of data.

I can…

- collect and present the same data in different ways (e.g. bar graph, pictograph, etc.).
- find and describe patterns in data visualizations, such as charts or graphs, to make predictions.
- work respectfully and responsibly with others online.

UNIT 4
KIDS CREATE CODE
A study of planning, developing, and debugging programs.

I can…

- decompose (break down) the steps needed to solve a problem to create instructions that are clear and in the right order.
- develop plans, with teacher support, that describe a program's actions, goals, and expected results.
- develop programs with sequences and simple loops, to share ideas or tackle a problem.
- debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.
- work respectfully and responsibly with others online.

Learning that repeats between units or grades provides students with multiple opportunities to learn the content with increasing complexity and/or various applications.

WHAT WE LEARN IN
2ND GRADE COMPUTER SCIENCE

Adams12 Five Star Schools

UNIT 1
KEEPING MY DATA SAFE
A study of passwords to protect information stored as data.

I can...
- explain what passwords are and why we use them.
- use strong passwords that include letters and numbers to protect devices and information.
- keep login information private, and log off of devices when I'm done using them.
- save, copy, find, edit, and delete information using technology and define that information as data.

UNIT 2
TECHNOLOGY TRANSFORMS LIVES
A study of the impact of technology on people's lives and work.

I can...
- compare how people live and work before and after new technology is invented.
- work respectfully and responsibly with others online.
- save, copy, find, edit, and delete information using technology and define that information as data.
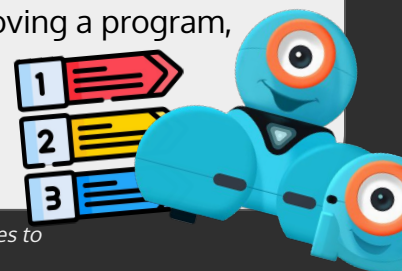
UNIT 3
CREATE AND COMMUNICATE CODE
A study of responsibly and thoughtfully developing programs.

I can...
- decompose (break down) the steps needed to solve a problem to create instructions that are clear and in the right order.
- develop plans, with teacher support, that describe a program's actions, goals, and expected results.
- develop programs with sequences and simple loops, to share ideas or tackle a problem.
- debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.
- give credit when using the ideas and creations of others while creating programs.
- describe the steps I took and the choices I made when developing and improving a program, using the right vocabulary.
- work respectfully and responsibly with others online.

Learning that repeats between units or grades provides students with multiple opportunities to learn the content with increasing complexity and/or various applications.

WHAT WE LEARN IN
3RD GRADE COMPUTER SCIENCE

Adams 12 Five Star Schools

UNIT 1
PROTECT YOUR DATA
A study of digital information and cybersecurity (internet safety).

I can...
- discuss real-world cybersecurity problems.
- discuss how personal information can be kept safe.
- save, copy, find, edit, and delete information using technology and define that information as data.

UNIT 2
HOW DO COMPUTERS WORK?
A study of how hardware and software interact.

I can...
- describe how the inside and outside parts of computing devices work together.
- model how basic computer hardware and software work together.
- determine possible ways to solve simple hardware and software problems (basic troubleshooting).
- model how information is broken into packets and travels over the internet.
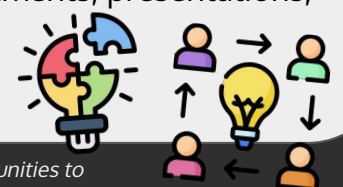- save, copy, find, edit, and delete information using technology and define that information as data.

UNIT 3
LOOK AT WHAT WE CAN PROGRAM
A study of creating programs.

I can...
- take on different roles, with teacher help, when collaborating with others during each step of creating a computer program.
- decompose (break down) problems into smaller parts to make it easier to develop programs.
- create programs that include coding elements such as sequences, events, loops, and conditionals.
- compare and improve multiple algorithms designed for the same task and decide which is the best for the job.
- test and debug (identify and fix errors) a program or algorithm to make sure it runs the way it's meant to.
- describe the choices I made when developing a program, using code comments, presentations, and demonstrations.

Learning that repeats between units or grades provides students with multiple opportunities to learn the content with increasing complexity and/or various applications.

WHAT WE LEARN IN
4TH GRADE COMPUTER SCIENCE

Adams12 Five Star Schools

UNIT 1
THE IMPACTS OF COMPUTING
A study of how computers work and cybersecurity (internet safety).

I can…
- model how basic computer hardware and software work together.
- determine possible ways to solve simple hardware and software problems (basic troubleshooting).
- discuss real-world cybersecurity problems.
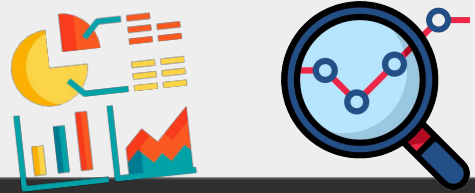- discuss how personal information can be kept safe.

UNIT 2
THE POWER OF DATA
A study of using and organizing data.

I can…
- organize and present collected data into graphs or charts to make it easier to understand and support a claim.
- use data to highlight or suggest cause-and-effect relationships, make predictions, or communicate an idea.

UNIT 3
THE POWER OF PROGRAMMING
A study of creating programs.

I can…
- take on different roles, with teacher help, when collaborating with others during each step of creating a computer program.
- create programs that include coding elements such as sequences, events, loops, and conditionals.
- test and debug (identify and fix errors) a program or algorithm to make sure it runs the way it's meant to.
- describe the choices I made when developing a program, using code comments, presentations, and demonstrations.
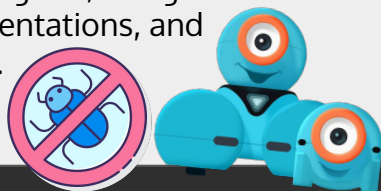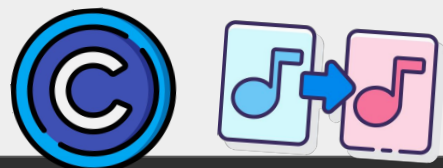
UNIT 4
THE POWER OF REMIXING
A study of remixing programs to develop something new.

I can…
- modify, remix, or include portions of someone else's program into my own work, to develop something new or add more advanced features.
- follow copyright laws and give credit when creating or remixing programs.
- use public domain or creative commons media (pictures, videos, music, etc.), and not copy or use material created by others without permission.

Learning that repeats between units or grades provides students with multiple opportunities to learn the content with increasing complexity and/or various applications.

WHAT WE LEARN IN
5TH GRADE COMPUTER SCIENCE

UNIT 1
TECHNOLOGY AND SOCIETY
A study of the impacts of technology.

I can…
- discuss real-world cybersecurity problems.
- discuss how personal information can be kept safe.
- discuss computing technologies that have changed the world.
- express how changing technologies influence, and are influenced by, cultural practices.

UNIT 2
MAKING TECH BETTER FOR ALL
A study of improving technology for a diverse world.

I can…
- use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.
- seek diverse perspectives to improve programs and products created with technology.
- brainstorm ways to improve the accessibility and usability of technology for users with different backgrounds, ability levels, points of view, and disabilities.

UNIT 3
THE POSSIBILITIES OF PROGRAMMING
A study of creating programs.

I can…
- take on different roles, with teacher help, when collaborating with others during each step of creating a computer program.
- decompose (break down) problems into smaller parts to make it easier to develop programs.
- create programs that include coding elements such as sequences, events, loops, and conditionals.
- create programs that use variables to store and modify data (e.g. game score, timer, etc.).
- test and debug (identify and fix errors) a program or algorithm to make sure it runs the way it's meant to.
- describe the choices I made when developing a program, using code comments, presentations, and demonstrations.