PK.CS.HS.01 With guidance, use appropriate terminology to locate and identify common computing devices and components in a variety of environments (e.g., turn on, navigate, open/close programs/apps). A computing system is composed of hardware and software.Hardware consists of physical components. With guidance, students should be able to identify and describe the function of external hardware, such as desktop computers, laptop computers, television monitors, keyboards, mice, and printers.

PK.CS.IO.01 With guidance, select and use a computing device to perform a variety of tasks for an intended outcome. People using computers devices to perform a variety of tasks accurately and quickly. With guidance, students should be able to select the appropriate app/program to use for tasks they are required to complete. For example, if students are asked to draw a picture, they should be able to open and use a drawing app/program to complete this task.

1.CS.IO.01 With guidance, select and use a computing device to perform a variety of tasks for an intended outcome. People using computers devices to perform a variety of tasks accurately and quickly. With instruction, students should be able to identify and describe the function of external hardware, such as desktop computers, laptop computers, tablet devices, keyboard, mouse, monitors, keyboards, mice, and printers.

2.CS.IO.01 Select and use a computing device to perform a variety of tasks for an intended outcome. People using computers devices to perform a variety of tasks accurately and quickly. With instruction, students should be able to identify and describe the function of external hardware, such as interactive boards, touch screen devices, and printers.

1.CS.HS.02 With guidance select and use appropriate software/apps for an intended outcome. (e.g., programs, websites, and applications). Software apps and programs interact with hardware or software problems. This could include, but is limited to, district purchased client-based reading or math program software, apps for a specific learning environment (e.g., Ipad, Chromebook, Google Apps, Seesaw), or accessing a browser to navigate web-based program.

2.CS.HS.02 Select and use appropriate software/apps for an intended outcome. This could include, but is limited to, district purchased client-based reading or math program software, apps for a specific learning environment (e.g., Ipad, Chromebook, Google Apps, Seesaw), or accessing a browser to navigate web-based program.

Problem solving with computing systems is different. Students at this level do not need to understand these causes, but they should be able to communicate a problem and select a solution. With guidance, students should be able to use simple troubleshooting strategies, including turning on and off the device, restarting the computer, inserting another keyboard, or replacing a printer. Students should be able to describe how the location of the buttons or keys is different from the standard, because those problems may not occur.


### Kindergarten

- **PK.NI.C.01**: Recognize that passwords are private and should be kept and should protect others’ devices or information from unwanted use by others is an essential first step in learning about cybersecurity.

- **PK.NI.NCO.01**: Recognize that passwords are private and should be kept.

- **PK.NI.CVT.01**: Students represent collected data in a visual way (e.g., charts, graphs, tables).

- **PK.DA.C.01**: With guidance, collect data and present it two different ways (chart or graph).

- **PK.DA.S.01**: Manipulate existing files, manipulate data, and organize a meaningful way.

### 1st Grade

- **1.DA.CVT.01**: With guidance, analyze and identify data from a chart or graph (visualization) in order to make a prediction, with or without a computing device.

- **1.NI.C.01**: Identify what authentication methods (passwords) are, explain why they are not shared, and discuss what makes a password strong.

- **1.NI.NCO.01**: Recognize that by organizing files, students can manage and store their data, which is referred to as data management.

### 2nd Grade

- **2.DA.C.01**: With guidance, collect data and present it two different ways (chart or graph).

- **2.DA.S.01**: Manipulate existing files, manipulate data, and organize a meaningful way.

- **2.NI.C.01**: Identify what authentication methods (passwords) are, explain why they are not shared, and discuss what makes a password strong.

- **2.NI.NCO.01**: Use computing software and hardware. Students will learn how to use computing software and hardware to complete tasks on a computing device, they will be able to identify when information is being sent to the program or device (e.g., the teacher laptop is being connected to the LCD projector, or if the Wi-Fi or Ethernet connection is active.)

### 3rd Grade

- **3.DA.C.01**: With guidance, analyze and identify data from a chart or graph (visualization) in order to make a prediction, with or without a computing device.

- **3.DA.S.01**: Manipulate existing files, manipulate data, and organize a meaningful way.

### 4th Grade

- **4.DA.C.01**: With guidance, analyze and identify data from a chart or graph (visualization) in order to make a prediction, with or without a computing device.
PK Kindergarten

**Concept:**

**PK.DA.IM.01** Students look for patterns in data, make predictions, and create a model (e.g., make predictions on weather data, color, identify life cycle, etc.) present in a picture graph or pattern.

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**PK.DA.IM.02** Students identify and decompose (break down) a larger problem into smaller subproblems.

**PK.DA.IM.03** Students create algorithms and models to portray results and to assist in identifying patterns in the world around us.

PK 1st Grade

**Concept:**

**1.AP.C.01** With guidance, students should be able to break down tasks into smaller tasks. Students could break down the steps needed to make breakfast, get ready for school, to move a character across the screen, etc. This can be done with or without a computing device.

**1.AP.A.01** With guidance, model and manipulate data by using numbers or other symbols to represent direction, encode and decode words, pictures, or other symbols to represent letters or words.

**1.AP.C.02** With guidance, independently or collaboratively create programs to accomplish tasks.

**1.AP.A.02** With guidance, model the way that programs store and manipulate data by using numbers or other symbols to represent information (e.g., thumbs up/down for yes/no, use arrows when writing algorithms to represent direction, use emojis that represent emotion, or use common icons and symbols to perform an action (play is a triangle, save button share button, etc.)

PK 2nd Grade

**Concept:**

**2.AP.C.01** With guidance, create programs that include sequencing and simple loops to accomplish a task, collaboratively and independently.

**2.AP.C.02** With guidance, create programs that include sequencing and simple loops to accomplish a task, collaboratively and independently.

**2.AP.A.01** With guidance, model the way that programs store and manipulate data by using numbers or other symbols to represent information (e.g., thumbs up/down for yes/no, use arrows when writing algorithms to represent direction, use emojis that represent emotion, or use common icons and symbols to perform an action (play is a triangle, save button share button, etc.)

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**Variables**

**K.AP.V.01** With guidance, understand that numbers represent different types of data, such as colors, yes/no, or other symbols (e.g., thumb up/thumb down for yes/no, red/green for color).

**K.AP.V.02** With guidance, recognize that numbers represent different types of data, such as colors, yes/no, or other symbols (e.g., thumb up/thumb down for yes/no, red/green for color).

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**Inference and Models**

**K.DA.IM.01** Students learn to decompose (break down) a larger programming). This would include life cycles, weather maps, and processes. Students will show data in a pattern. With guidance, students will show what would be hidden in a basic pattern. This could be a color pattern, number pattern, animal pattern, etc. It can be as basic as ABAB, or ABABAB.

**K.DA.IM.02** Students learn to decompose (break down) a larger programming). This would include life cycles, weather maps, and processes. Students will show data in a pattern. With guidance, students will show what would be hidden in a basic pattern. This could be a color pattern, number pattern, animal pattern, etc. It can be as basic as ABAB, or ABABAB.

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**Algorithms and Programming**

**PK.AP.A.01** With guidance, construct and execute algorithms (sets of step-by-step instructions) that includes sequencing and simple loops to accomplish a task independently.

**PK.AP.A.02** With guidance, model the way that programs store and manipulate data by using numbers or other symbols to represent information (e.g., thumbs up/down for yes/no, use arrows when writing algorithms to represent direction, use emojis that represent emotion, or use common icons and symbols to perform an action (play is a triangle, save button share button, etc.)

**PK.AP.A.03** With guidance, model the way that programs store and manipulate data by using numbers or other symbols to represent information (e.g., thumbs up/down for yes/no, use arrows when writing algorithms to represent direction, use emojis that represent emotion, or use common icons and symbols to perform an action (play is a triangle, save button share button, etc.)

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**Modularity**

**PK.AP.M.01** With guidance, decompose (break down) a larger problem into smaller subproblems.

**PK.AP.M.02** With guidance, decompose (break down) a larger problem into smaller subproblems.

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<table>
<thead>
<tr>
<th>Concept</th>
<th>Subconcept</th>
<th>PK</th>
<th>Kindergarten</th>
<th>1st Grade</th>
<th>2nd Grade</th>
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</thead>
<tbody>
<tr>
<td>Program Development</td>
<td>PK.AP.PD.01 Create a design document to illustrate thoughts, ideas, and stories in a sequential manner</td>
<td>PK</td>
<td>Create a design document for what a program will do clarifies the steps that will be needed to create a program and can be used to check if a program is correct. Students could create a planning document such as a story map, storyboard, or a sequential graphic organizer to illustrate what their program will do.</td>
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<td>Create a plan for what a program will do clarifies the steps that will be needed to create a program and can be used to check if a program is correct. Students could create a planning document such as a story map, storyboard, or a sequential graphic organizer to illustrate what their program will do. Students at this stage should be able to complete the planning process by themselves, or with help from their teachers.</td>
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<td>Program Development</td>
<td>PK.AP.PD.02 Recognize that digital items can be owned and that proper credit needs to be given (e.g. using code, music, pictures).</td>
<td>PK</td>
<td>Using computers comes with a level of responsibility. Students should recognize that artifacts were created by others, such as pictures, music, and code.</td>
<td>Using computers comes with a level of responsibility. With guidance, students should credit artifacts that were created by others, such as pictures, music, and code. Credit could be given orally, if presenting their work to the class; in writing or orally, if sharing work on a class blog or website. Proper attribution at this stage does not require a formal citation, such as in a bibliography or works cited document.</td>
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<td>Program Development</td>
<td>PK.AP.PD.03 With guidance, construct, execute, and debug (identify and fix) algorithms using programming language and an unplugged activity that includes sequencing (e.g. use block based programming).</td>
<td>PK</td>
<td>Algorithms or programs may not always work correctly. With guidance, students should be able to use various strategies, such as changing the sequence of the steps, following the algorithm in a step-by-step manner, or trial and error to fix problems in algorithms and programs.</td>
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<td>Program Development</td>
<td>PK.AP.PD.04 With guidance, use correct terminology in the development of an algorithm to communicate their ideas and stories (beginning, middle, end).</td>
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<td>With guidance, students should be able to talk or write about the goals and expected outcomes of the programs they create and the choices that they made when creating programs. This could be done through discussions with the teacher or class.</td>
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<td>Culture</td>
<td>PK.IC.C.01 Understand different ways in which technologies are used in your daily life.</td>
<td>PK</td>
<td>In the past, if students wanted to read about a topic, they needed access to a library to find a book about it. Today, young students can view and read information on the internet about a topic, they can download e-books about it directly to a device. Such information may be available in more than one language and or in more than one format. Students should develop an awareness in describing various ways technology can impact their world. (e.g. checking out a story, buying lunch, using an iPhone or Android device to call in an emergency, or learning through video sharing.)</td>
<td>In the past, if students wanted to read about a topic, they needed access to a library to find a book about it. Today, young students can view and read information on the internet about a topic, they can download e-books about it directly to a device. Such information may be available in more than one language and could be read to a student, allowing for great accessibility. Students should be able to analyze where and when various ways technology can be used (e.g. checking out a story, buying lunch, using an iPhone or Android device to call in an emergency, or learning through video sharing.)</td>
<td>Students should be able to discuss or write about the goals and expected outcomes of the programs they create and the choices that they made when creating programs. This could be done using coding journals, discussions with a teacher, or class presentations.</td>
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Computing technology has changed the way people live and work. In the past, if students wanted to read about a topic they needed access to a library to find a book about it. Today, students will be able to view and read information on the internet about a topic or they can download e-books about it directly to a device. Such information may be available in more than one language and could be read to a student, allowing for great accessibility. In personal lives, they should be able to use technology to communicate and share ideas (e.g. writing email, creating and sharing documents, working with other students, etc.).
PK.IC.SI.01 With guidance identify appropriate behaviors while participating in an online environment. (Digital Citizenship - focus on Digital Etiquette.)

1.IC.CP.01 Discuss the fact that a wide range of jobs require knowledge or use of computer science.

Digital Rights and Responsibilities (knowing your rights to free speech and privacy, but handling it responsibly), and Digital Health and Wellness (caring for your physical and psychological well being online).

As computers become interconnected in each aspect of society, more powerful, and students become more reliant on technology systems and software.

People use computing technology in ways that can help or hurt one's home, family, or others. Encourage students to share devices and leave the devices ready for the next user (classroom programs, etc.). Explain how passwords, login methods and why we protect devices with these. People practice using technology in ways that can help or hurt one's home, family, or others.

1.IC.SI.01 Aid in developing an appropriate code of conduct and explain and practice grade level or specific digital citizenship and etiquette behaviors (belonging to others) and it can not be claimed as your own.

2.IC.CP.01 Investigate how computer science has impacted personal daily life and the jobs in your community and the world around you.

Within the inevitable interwoven fabric of society's reliance and innovative machines, students will understand how to have basic assumable skills when entering the workforce. Students should be able to identify how and why activities in the technological age. An example would be for students to list how a bus driver can use GPS, safety features, and indicators to provide safe travel to school.

2.IC.CP.01 Compare and contrast examples of how computing technology has changed and improved the way people live, work and interact.

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