

### Review:

1. Ask students to reflect on what they know about computers or technology and what they would like to know. Have them write quietly or share with a partner, then open up to a class discussion.
2. Class Contract Handout

**Standards:** ISTE 1a

<b>Vocabulary</b>	
<b>Computer</b>	<i>a machine used to work with information</i>
<b>Revolutionize</b>	<i>to change something very much or completely</i>
<b>Cyberbullying</b>	<i>using the internet to be mean, either by sending messages or posting pictures or videos that are unkind</i>
<b>Digital citizen</b>	<i>a person who responsibly participates in using the internet and other technology</i>
<b>Netizen</b>	<i>a person who actively uses the Internet especially in a proper and responsible way</i>
<b>Change agent</b>	<i>someone who makes change happen by inspiring and influencing others</i>

**Weekly Question:** What is the binary system?

**Suggested In-class Extension Activity:** Ones and Zeroes Activity; Ones and Zeroes

Homework

**Standards:** ISTE 1d, 5d

<b>Vocabulary</b>	
<b>Binary system</b>	<i>a system in which information can be expressed by combinations of the digits 0 and 1</i>
<b>Base-ten system</b>	<i>a counting system that uses ten digits</i>
<b>Decimal system</b>	<i>a system of measurement or currency in which the basic units increase by powers of 10</i>
<b>Symbol</b>	<i>a thing that represents or stands for something else</i>
<b>Circuit</b>	<i>the path on which electricity flows</i>
<b>Bit</b>	<i>short for binary digit, the smallest unit of data in a computer</i>
<b>Byte</b>	<i>eight bits grouped together</i>

**Weekly Question:** How do computers work?

**Suggested In-class Extension Activity:** Have students brainstorm input and output devices using the BINGO Template. Be sure to remind students to fill in the words at random so everyone's card looks different. Other computer-related terms may be used as well if more words are needed to fill the card. Once all the BINGO cards are complete, students may play BINGO as a class.

**Standards:** ISTE 1d, 5d

<b>Vocabulary</b>	
<b>Input</b>	<i>any information or data sent to a computer for processing</i>
<b>Output</b>	<i>a place where power or information leaves a system</i>
<b>Memory</b>	<i>the part of a computer where information is stored</i>
<b>CPU</b>	<i>(Central Processing Unit) the brain of the computer</i>
<b>Process</b>	<i>to take in and use information</i>
<b>Data</b>	<i>the information that computers work with, like pictures, numbers, words, or sounds</i>
<b>BIOS</b>	<i>(Basic Input Output System) a set of computer instructions which control input and output operations</i>

**Weekly Question:** What are some ways we can use a touchpad?

**Suggested In-class Extension Activity:** Instruct students to create a T-chart listing the pros and cons of using a touchpad compared to a mouse. Ask them to include examples of the tips they learned in the video/reading.

**Standards:** ISTE 1d

<b>Vocabulary</b>	
<b>Gesture</b>	<i>a movement of part of the body, especially a hand or the head, to express an idea or meaning</i>
<b>Right-click</b>	<i>to press the right button</i>
<b>Scroll</b>	<i>to move up, down, left, or right</i>
<b>Drag and drop</b>	<i>to move something by clicking, holding, and moving the pointer using a mouse or touchpad</i>
<b>Select</b>	<i>to choose an item by clicking on it</i>
<b>Mouse</b>	<i>a device you move with your hand to move the cursor on a computer screen</i>
<b>Touchpad</b>	<i>part of a computer that lets you move the mouse pointer with your finger</i>
<b>Touchpad gesture</b>	<i>a movement with your finger(s) on a touchpad to perform an action</i>

**Weekly Question:** How have computers changed over time?

**Suggested In-class Extension Activity:** History of Computers Timeline Activity

**Standards:** ISTE 1d

<b>Vocabulary</b>	
<b>Vacuum tube</b>	<i>a tube containing absolutely nothing, not even air, that allows the free passage of electricity</i>
<b>Program</b>	<i>a set of instructions that does a particular job in the computer</i>
<b>Transistor</b>	<i>a device used to amplify or switch electronic signals and electrical power</i>
<b>Semiconductor</b>	<i>a solid crystal substance that can sometimes conduct electricity and other times does not</i>
<b>Integrated circuit</b>	<i>an object put onto a small piece of material such as silicon that allows the flow of electricity</i>
<b>Printed circuit board</b>	<i>a board that has conductive material printed onto it</i>
<b>Software engineer</b>	<i>a person who designs, develops, maintains, tests, and evaluates computer software</i>

**Weekly Question:** How did the invention of the transistor change computers?

**Suggested In-class Extension Activity:** Fill out the Compare and Contrast template using the terms “Vacuum Tubes” and “Transistors”.

**Standards:** ISTE 1d

<b>Vocabulary</b>	
<b>Vacuum tube</b>	<i>a tube containing absolutely nothing, not even air, that allows the free passage of electricity</i>
<b>Transistor</b>	<i>a device used to amplify or switch electronic signals and electrical power</i>
<b>Electronic circuit</b>	<i>an object that allows the continuous flow of electricity</i>
<b>Computer</b>	<i>an electronic machine that can store and work with a lot of information</i>
<b>Binary system</b>	<i>a system in which information can be expressed by combinations of the digits 0 and 1</i>

**Weekly Question:** Why is it important to know the internal parts of a computer?

**Suggested In-class Extension Activity:** Internal Parts of a Computer Label the Part Activity

**Standards:** ISTE 1c, 1d

<b>Vocabulary</b>	
<b>RAM</b>	<i>(Random Access Memory) a device that stores data for a very short time for the computer to process the data</i>
<b>Hard drive</b>	<i>the main drive of a computer where files and folders are stored</i>
<b>Video card</b>	<i>a device in a computer that controls the images shown on screen</i>
<b>Sound card</b>	<i>a small plastic card that makes the sound from the computer sound better</i>
<b>USB</b>	<i>(Universal Serial Bus) a port or connection used to connect many external devices to the computer</i>
<b>CPU</b>	<i>(Central Processing Unit) the brain of the computer</i>
<b>Motherboard</b>	<i>the board that all of the internal parts of a computer are connected to</i>
<b>Network card</b>	<i>a small plastic card that connects a computer to a network or the Internet</i>
<b>CD DVD drive</b>	<i>a tray or slot where you put a CD or DVD to play on the computer</i>
<b>Expansion card</b>	<i>a way to improve or upgrade certain parts of the computer</i>

**Weekly Question:** What is the difference between computer hardware and software?

**Suggested In-class Extension Activity:** Hardware and Software Names of Software Activity

**Standards:** ISTE 1d

<b>Vocabulary</b>	
<b>Program</b>	<i>a set of instructions that does a particular job in the computer</i>
<b>System software</b>	<i>the programs that manage the computer itself</i>
<b>Application software</b>	<i>a program that is made for a person to perform a certain task</i>
<b>Hardware</b>	<i>the parts of a computer you can see and touch</i>
<b>Software</b>	<i>the files, programs, and applications on a computer</i>



**Weekly Question:** What is an operating system?

**Suggested In-class Extension Activity:** Operating Systems Definitions Worksheet

**Standards:** ISTE 1d

<b>Vocabulary</b>	
<b>Menu</b>	<i>a list of choices you can make when using the computer or a program</i>
<b>Home screen</b>	<i>also called a desktop, the main screen of a computer, tablet or mobile device</i>
<b>Window</b>	<i>a rectangle on the screen that lets you see information or a program</i>
<b>Operating system</b>	<i>a set of instructions that manages all of the hardware and software in a computer</i>
<b>Application</b>	<i>a software program that does a certain thing, like web browsing, email, or games</i>
<b>Icon</b>	<i>a small picture that you can click to open a file or program</i>
<b>GUI</b>	<i>(Graphical User Interface) a system of windows, pictures, and buttons that can be clicked on to use the different programs and files in a computer</i>

**Weekly Question:** What are computer memory and storage?

**Suggested In-class Extension Activity:** Use the Venn Diagram Template to have students compare and contrast “ROM” and “RAM”.

**Standards:** ISTE 1d

<b>Vocabulary</b>	
<b>Data</b>	<i>the information that computers work with, like pictures, numbers, words, or sounds</i>
<b>Memory</b>	<i>the part of a computer where information is stored</i>
<b>ROM</b>	<i>(Read-Only Memory) the part of a computer in which information that cannot be changed is stored</i>
<b>RAM</b>	<i>(Random Access Memory) a device that stores data for a very short time for the computer to process the data</i>
<b>Storage</b>	<i>a place that data is kept on a computer for an extended period of time</i>
<b>Hard disk drive</b>	<i>a type of hard drive; a computer storage device for “long term memory” that works by storing data with magnetic disks that spin very quickly</i>
<b>Solid state drive</b>	<i>a longer-lasting but more expensive type of hard drive; a computer storage device for “long term memory” that works with tiny electronic circuits on microchips, allowing electricity to run on different pathways</i>
<b>USB drive</b>	<i>a small storage device that uses microchips to store data and can plug into a USB port</i>
<b>Memory card</b>	<i>a very small storage device that uses microchips to store data, used in electronics such as computers, smartphones, digital cameras, and printers</i>

**Weekly Question:** How can we use keyboard shortcuts?

**Suggested In-class Extension Activity:** Keyboard Magic Labeling Activity

**Standards:** ISTE 1d

<b>Vocabulary</b>	
<b>Function keys</b>	<i>the keys located at the top of the keyboard that perform certain tasks when used in combination with other keys</i>
<b>Keyboard shortcut</b>	<i>a combination of keys pressed in a certain order to perform a certain task</i>
<b>Clipboard</b>	<i>part of a computer program that holds a copy of some data like text or a picture</i>

**Weekly Question:** How can computer files and folders help us stay organized?

**Suggested In-class Extension Activity:** Files & Folders Sorting Activity

**Standards:** ISTE 1b, 1d, 2d

<b>Vocabulary</b>	
<b>File</b>	<i>an object on a computer that stores information</i>
<b>Folder</b>	<i>a storage space where files and other folders can be kept and organized</i>
<b>Hard drive</b>	<i>the main drive of a computer where files and folders are stored</i>
<b>Drive</b>	<i>a storage device that can store files and folders</i>
<b>File management</b>	<i>a system of organizing files and folders on a computer</i>
<b>File extension</b>	<i>letters after the period in a file name which tell the computer what kind of file it is</i>

**Weekly Question:** How can we create different kinds of files for school assignments and for fun?

**Suggested In-class Extension Activity:** Think, Pair, Share: Have students generate lists of things they have already done or would like to do using at least three of the Google for Education programs. Then, have students share their ideas with the class.

**Standards:** ISTE 1d, 6a

<b>Vocabulary</b>	
<b>Classroom</b>	<i>a free online program for schools offered by Google that lets teachers assign and grade assignments</i>
<b>Docs</b>	<i>a free online word processor offered by Google</i>
<b>Gmail</b>	<i>a free email service offered by Google</i>
<b>Google Drive</b>	<i>a free online file storage program developed by Google</i>
<b>Google for Education</b>	<i>an integrated suite of secure, cloud-native collaboration and productivity apps</i>
<b>Slides</b>	<i>a free online presentation program offered by Google</i>

**Weekly Question:** How can formatting help us with assignments and projects?

**Suggested In-class Extension Activity:** Have students use the information from the video and reading to create a pamphlet, either about something they are learning in class or about a personal interest. Students may work in pairs or groups. Print a copy of each pamphlet when they are done so students may share.

**Standards:** ISTE 4b

<b>Vocabulary</b>	
<b>Bold</b>	<i>thicker lettering</i>
<b>Document</b>	<i>a computer file containing data entered by a user</i>
<b>Word processing</b>	<i>the use of computers, software, and printers to get data into printed form</i>
<b>Text</b>	<i>letters and words</i>
<b>Italicize</b>	<i>to make lettering slanted or tilted</i>
<b>Highlight</b>	<i>to mark something with a bright color</i>
<b>Format</b>	<i>general plan of organization and arrangement</i>

**Weekly Question:** How can we create digital drawings?

**Suggested In-class Extension Activity:** In groups or pairs, students use Google Drawings to create a drawing of something they like to do outdoors. It may be abstract or representational. Ask them to use at least 5 of the techniques in the video/reading. Optional: ask them to write a step-by-step tutorial for creating their drawing.

**Standards:** ISTE 4b

<b>Vocabulary</b>	
<b>Transparency</b>	<i>the quality that makes it possible to see through something</i>
<b>Align</b>	<i>to arrange things so that they form a line or are in proper position</i>
<b>Hue</b>	<i>a specific color</i>
<b>Distribute</b>	<i>to spread or place (something) over an area</i>
<b>Group</b>	<i>in software programs, to associate objects in order to edit them together</i>
<b>Insert</b>	<i>to put in</i>
<b>Resize</b>	<i>to change the size</i>
<b>Highlight</b>	<i>to mark something with a bright color</i>

**Weekly Question:** How can we create a simple but effective presentation?

**Suggested In-class Extension Activity:** In groups or pairs, students create a presentation in Google Slides about something they are learning in class or something of personal interest. Ask them to think about what they actually show on the slides vs. what they will say as they present. Optional: ask them to write a step-by-step tutorial for creating their presentation in Google Slides.

**Standards:** ISTE 4b

<b>Vocabulary</b>	
<b>Software</b>	<i>the files, programs, and applications on a computer</i>
<b>Text box</b>	<i>a section of a page that allows a user to enter text</i>
<b>Insert</b>	<i>to put in</i>
<b>Upload</b>	<i>to send information from a smaller computer to a larger computer or computer network</i>
<b>Slide</b>	<i>a single page of a presentation</i>
<b>Cursor</b>	<i>a movable marker on a computer screen that shows where to click on an icon or where letters can be typed in</i>



**Weekly Question:** How can we create and use spreadsheets?

**Suggested In-class Extension Activity:** Ask students to design a 1-question survey to ask their classmates: for example, everyone's favorite vegetable or ice cream flavor. Once they have collected their data, have them create a simple spreadsheet in Google Sheets and practice filtering their data in different ways.

**Standards:** ISTE 4b

<b>Vocabulary</b>	
<b>Cell</b>	<i>a rectangular space where a column and a row intersect</i>
<b>Column</b>	<i>a group of printed or written items (such as numbers or words) shown one under the other down a page</i>
<b>Row</b>	<i>a line of words, numbers, pictures, etc. going straight across</i>
<b>Header</b>	<i>text at the top of each page of a document</i>
<b>Sort</b>	<i>arrange data in alphabetical or numerical order, such as in a spreadsheet</i>
<b>Filter</b>	<i>choose to see only certain rows in a spreadsheet</i>
<b>Criteria</b>	<i>something used as a reason for making a decision</i>

**Weekly Question:** What is the internet?

**Suggested In-class Extension Activity:** Instruct students to create a T-chart listing the pros and cons of using the internet. Afterwards, ask students to share and compare ideas.

**Standards:** ISTE 1c, 1d, 2c, 3a, 5d

<b>Vocabulary</b>	
<b>Internet</b>	<i>the global computer network providing information and communication</i>
<b>Website</b>	<i>a page that is on the World Wide Web; a webpage</i>
<b>Online</b>	<i>done over the internet</i>
<b>World Wide Web</b>	<i>a way of sharing information on networks</i>
<b>Network</b>	<i>two or more computers connected together</i>

**Weekly Question:** How does the internet work?

**Suggested In-class Extension Activity:** Have students use the Define or Draw Vocab Template for at least 4 of the vocabulary words this week.

**Standards:** ISTE 1c, 1d, 3a, 5d

<b>Vocabulary</b>	
<b>Data</b>	<i>the information that computers work with, like pictures, numbers, words, or sounds</i>
<b>Packet</b>	<i>a small piece of data</i>
<b>HTTP</b>	<i>(HyperText Transfer Protocol) the way that information is arranged and sent on the World Wide Web</i>
<b>Server</b>	<i>a computer that is connected directly to the Internet</i>
<b>ISP</b>	<i>Internet Service Provider (ex. AT&amp;T, Comcast, Spectrum, Verizon)</i>
<b>Protocol</b>	<i>a set of rules used in programming computers so that they can communicate with each other</i>
<b>Client</b>	<i>a computer that connects to servers</i>

**Weekly Question:** How can we use email responsibly?

**Suggested In-class Extension Activity:** Sending an Email Template Activity

**Standards:** ISTE 1a, 1d, 6a

<b>Vocabulary</b>	
<b>Spam</b>	<i>junk email messages sent to a lot of people at once to try to sell something or harm people's computers</i>
<b>Inbox</b>	<i>a list where incoming email messages are stored</i>
<b>Subject</b>	<i>a summary of what an email is about</i>
<b>Reply all</b>	<i>a response to the sender of an email and all others who were sent the original email</i>
<b>Forward</b>	<i>resending an email possibly to a different address, moving the email "forward"</i>
<b>Reply</b>	<i>a response to the sender of an email</i>
<b>Attachment</b>	<i>a computer file such as a document or image sent in an email</i>
<b>Draft</b>	<i>an email that hasn't been sent yet</i>
<b>Carbon copy</b>	<i>(cc) additional email addresses an email is sent to</i>
<b>Email address</b>	<i>letters and numbers that identify where to send an electronic message over the internet</i>

**Weekly Question:** How can we use the internet to find information?

**Suggested In-class Extension Activity:** Internet Scavenger Hunt:

1. Have students use search engines to find different bits of information. For example, see if they can find Abraham Lincoln's birth date, where he was born, how old he was when he died, and one of his famous sayings. Next, ask your students to find different types of information about him using the image, video and news tabs.

2. Optional: Students may also try using multiple search engines and compare the results.

The differences are particularly noticeable for image searches.

**Standards:** ISTE 1b, 1d, 3a, 3b, 3c, 3d

<b>Vocabulary</b>	
<b>Search engine</b>	<i>a computer program that is used to look for information on the Internet</i>
<b>Ad</b>	<i>short for advertisement; a notice of something for sale</i>
<b>Browser</b>	<i>a program that lets you visit websites on the World Wide Web</i>
<b>Keyword</b>	<i>an important word for organizing information in an internet search</i>
<b>Link</b>	<i>words, images, or web addresses you can click to go to another web page</i>
<b>Filter</b>	<i>a barrier that allows wanted things to pass through but catches unwanted things so that they don't</i>

**Weekly Question:** How can we make sure that our research is reliable?

**Suggested In-class Extension Activity:** Using the Internet for HW and Research Activity

**Standards:** ISTE 3b

### Vocabulary

<b>Accurate</b>	<i>having no mistakes or errors</i>
<b>URL</b>	<i>(Uniform Resource Locator) the address of a web page</i>
<b>Domain name</b>	<i>the address where Internet users can find websites and identify computers on the Internet</i>
<b>Source</b>	<i>the book, website, or place where your information originally came from</i>
<b>Citation</b>	<i>credit given to the person who came up with an idea</i>

**Weekly Question:** How can we tell if a website is safe and trustworthy?

**Suggested In-class Extension Activity:** Divide students into groups and instruct them to use a Website Evaluation Form to evaluate a website. Have them present the attributes of safe and unsafe websites afterwards as a class.

**Standards:** ISTE 2b, 3b

<b>Vocabulary</b>	
<b>Virus</b>	<i>a code added to a computer program that can attach itself to and seriously damage other programs</i>
<b>Ads</b>	<i>short for advertisements; notices of things for sale</i>
<b>Pop-up</b>	<i>a window that comes up suddenly on the computer screen</i>
<b>Spam</b>	<i>junk email messages sent to a lot of people at once to try to sell something or harm people's computers</i>
<b>Personal information</b>	<i>recorded information about a person like name, email address, or phone number</i>
<b>Scam</b>	<i>a dishonest way to make money by deceiving people</i>

### **Review:**

Ask students to reflect on what they have learned. What have we learned about computers and technology? What surprised them the most? What do they remember best? How does their knowledge of technology now compare to their knowledge when they first began the course? Ask students to write quietly or share with a partner, then open up to a class discussion.

**Standards:** ISTE 1c, 2c