

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

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

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

Weekly Question: How do computers 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 1d, 5d

Vocabulary	
Input	<i>any information or data sent to a computer for processing</i>
Output	<i>a place where power or information leaves a system</i>
Circuit	<i>the path on which electricity flows</i>
Binary	<i>a coding system using the binary digits 0 and 1 to represent a letter, digit, or other character in a computer or other electronic device</i>
Operating system	<i>a set of instructions that manages all of the hardware and software in a computer</i>
Component	<i>a part or an element of a larger whole</i>
Data	<i>the information that computers work with, like pictures, numbers, words, or sounds</i>
CPU	<i>(Central Processing Unit) the brain of the computer</i>
BIOS	<i>(Basic Input Output System) a set of computer instructions which control input and output operations</i>
Pixel	<i>a very small area that lights up on a screen</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

Vocabulary	
Gesture	<i>a movement of part of the body, especially a hand or the head, to express an idea or meaning</i>
Right-click	<i>to press the right button</i>
Scroll	<i>to move up, down, left, or right</i>
Drag and drop	<i>to move something by clicking, holding, and moving the pointer using a mouse or touchpad</i>
Select	<i>to choose an item by clicking on it</i>
Touchpad	<i>part of a computer that lets you move the pointer with your finger</i>
Touchpad gesture	<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: Using the information from the History of Computers video and reading, ask students to create a timeline of events in the history of computers, including dates and relevant details.

Standards: ISTE 1d

Vocabulary	
Transistor	<i>a device used to amplify or switch electronic signals and electrical power</i>
Semiconductor	<i>a solid crystal substance that can sometimes conduct electricity and other times does not</i>
Integrated circuit	<i>an object put onto a small piece of material such as silicon that allows the flow of electricity</i>
GUI	<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>
UI	<i>(User Interface) a way for a user to interact with the computer using a screen</i>
Graphic	<i>pictures or images on the screen of a computer, television, etc.</i>
Vacuum tube	<i>a tube containing absolutely nothing, not even air, that allows the free passage of electricity</i>

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

Suggested In-class Extension Activity: Have students brainstorm internal and external parts of a computer 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 1c, 1d

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

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

Suggested In-class Extension Activity: Think, Pair, Share: Challenge students to name as many pieces of software as they can that they use regularly. What do those pieces of software do? What hardware components do you think they need?

Standards: ISTE 1d

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

Weekly Question: What is an operating system?

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 1d

Vocabulary	
Operating system	<i>a set of instructions that manages all of the hardware and software in a computer</i>
GUI	<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>
Desktop	<i>home screen or first landing page with icons and a menu bar</i>
Process manager	<i>part of operating system that keeps track of the status of each project the computer is working on</i>
Memory manager	<i>gives memory space to programs that need it and frees up space when it can</i>
Device manager	<i>monitors every device to find the most efficient way to distribute resources</i>

Weekly Question: What are computer memory and storage?

Suggested In-class Extension Activity: Use the Venn Diagram Template to have students compare “Hard Disk Drives” and “Solid State Drives”.

Standards: ISTE 1d

Vocabulary	
RAM	<i>(Random Access Memory) a device that stores data for a very short time for the computer to process the data</i>
Bit	<i>short for binary digit, the smallest unit of data in a computer</i>
Byte	<i>eight bits grouped together</i>
Kilobyte	<i>a unit of computer information equal to about 1,000 bytes</i>
Megabyte	<i>a unit of computer information equal to about 1,000 kilobytes</i>
Gigabyte	<i>a unit of computer information equal to about 1,000 megabytes</i>

Weekly Question: How can we use keyboard shortcuts?

Suggested In-class Extension Activity: Keyboard Magic Labeling Activity

Standards: ISTE 1d

Vocabulary	
Function keys	<i>the keys located at the top of the keyboard that perform certain tasks when used in combination with other keys</i>
Keyboard shortcut	<i>a combination of keys pressed in a certain order to perform a certain task</i>
Refresh	<i>start over; reload</i>

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

Suggested In-class Extension Activity: Files and Folders Sorting Activity

Standards: ISTE 1b, 1d, 2d

Vocabulary	
File	<i>an object on a computer that stores information</i>
Folder	<i>a storage space where files and other folders can be kept and organized</i>
Hard drive	<i>the main drive of a computer where files and folders are stored</i>
Drive	<i>a storage device that can store files and folders</i>
File extension	<i>letters after the period in a file name which tell the computer what kind of file it is</i>
Directory	<i>a place on the computer or network where files and folders are stored</i>
File structure	<i>the way that files and folders are organized on a computer</i>
Subfolder	<i>a folder within another folder</i>
Underscore	<i>a symbol on the keyboard to create visual spacing between characters which looks like underlining where there isn't any text</i>

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

Suggested In-class Extension Activity: Ask students to create a T-chart to brainstorm pros and cons of using certain Google for Education programs. What can they do about any of the cons they come up with? Is there another program they can use or an offline solution?

Standards: ISTE 1d, 6a

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

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

Suggested In-class Extension Activity: In groups, pairs, or individually, have students browse the templates in Google Docs and choose one that interests them to try out. They can write about something they are learning in class, or another topic they are interested in. Have students share their finished documents.

Standards: ISTE 4b

Vocabulary	
Document	<i>a computer file containing data entered by a user</i>
Highlight	<i>to cause (something, such as text or an icon) to be displayed in a way that stands out on an electronic screen</i>
Text	<i>letters and words</i>
Collaborate	<i>to work with another person or group to achieve something</i>
Format	<i>general plan of organization and arrangement</i>
Consistent	<i>always in the same way</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 extreme weather conditions. 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

Vocabulary	
Toolbar	<i>a row of icons on a computer screen that allow you to do various things when you are using a particular program</i>
Highlight	<i>to cause (something, such as text or an icon) to be displayed in a way that stands out on an electronic screen</i>
Menu bar	<i>a row of menu titles that, when clicked, show dropdown menus of other items or commands</i>
Drop-down menu	<i>a list of choices that appears on a computer screen when a button or word is clicked</i>
Transparency	<i>the quality that makes it possible to see through something</i>
Hue	<i>a specific color</i>
Align	<i>to arrange things so that they form a line or are in proper position</i>
Resize	<i>to change the size</i>
Arrange	<i>to move and organize (things) into a particular order or position</i>
Group	<i>in software programs, to associate objects in order to edit them together</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. Ask students to provide thoughtful critique for each other's presentations. Optional: ask them to write a step-by-step tutorial for creating their presentation in Google Slides.

Standards: ISTE 4b

Vocabulary	
Text box	<i>a section of a page that allows a user to enter text</i>
Insert	<i>to put in</i>
Slide	<i>a single page of a presentation</i>
Reinforce	<i>to support or emphasize an idea</i>

Weekly Question: How can we create and use spreadsheets?

Suggested In-class Extension Activity: Ask students to design a short survey to give their classmates. Questions should have numerical answers, such as surveying how many pets everyone has. Once they have collected their data, students create a simple spreadsheet and practice filtering their data, applying formulas, and formatting to showcase their data. Ask students to share something interesting or surprising that their data set shows.

Standards: ISTE 4b

Vocabulary	
Cell	<i>a rectangular space where a column and a row intersect</i>
Column	<i>a group of printed or written items (such as numbers or words) shown one under the other down a page</i>
Row	<i>a line of words, numbers, pictures, etc. going straight across</i>
Header	<i>text at the top of each page of a document</i>
Sort	<i>arrange data in alphabetical or numerical order, such as in a spreadsheet</i>
Formula	<i>in spreadsheet software, an equation that makes calculations based on the data in your spreadsheet</i>
Filter	<i>choose to see only certain rows in a spreadsheet</i>
Spreadsheet	<i>a document that has columns and rows which are used to calculate numbers and organize information</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

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

Weekly Question: How does the internet work?

Suggested In-class Extension Activity: Have students use the Compare and Contrast Template to compare “URLs” and “IP Addresses”.

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

Vocabulary	
Data	<i>the information that computers work with, like pictures, numbers, words, or sounds</i>
Packet	<i>a small piece of data</i>
HTTP	<i>(HyperText Transfer Protocol) the way that information is arranged and sent on the World Wide Web</i>
Server	<i>a computer that is connected directly to the Internet</i>
ISP	<i>Internet Service Provider (ex. AT&T, Comcast, Spectrum, Verizon)</i>
Protocol	<i>a set of rules used in programming computers so that they can communicate with each other</i>
Client	<i>a computer that connects to servers</i>
IP	<i>Internet Protocol (as in IP address)</i>
DNS	<i>(Domain Name System) the way a domain name is translated into an IP address</i>
URL	<i>(Uniform Resource Locator) the address of a web page</i>

Weekly Question: How can we use email responsibly?

Suggested In-class Extension Activity: Have students use the Venn Diagram Template to compare “Email” and “Text Messaging”.

Standards: ISTE 1a, 1d, 6a

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

Weekly Question: What is cloud computing?

Suggested In-class Extension Activity: Have students fill out the Vocab Graphic Organizer Template using the term “Cloud Computing”.

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

Vocabulary	
Service	<i>an organization, company, or system that provides something to the public</i>
Network map	<i>a diagram of all the components of a computer network or the internet</i>
Cloud computing	<i>using applications or services at least partly based online</i>

Level 5 | Digital Literacy | Course Conclusion

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