**Online Activities to Support Key Concepts**

 **Introduction to Computers**

* How Stuff Works: Computer Hardware Pictures
<http://computer.howstuffworks.com/computer-hardware-pictures.htm>\*
Take your students on a virtual tour of the inside of a computer using these computer hardware pictures with informational captions. Many pictures include labels and links for more information.
* How Stuff Works: Computers
<http://www.howstuffworks.com/microprocessor.htm>\*
Have you ever wondered what is on the inside of your computer? This site has a video that will take you on a tour of your computer. Students can also test their knowledge with an online CPU Quiz.
* Old Computers: Online Museum
<http://www.old-computers.com/history/timeline.asp>\*
Explore this online museum to view pictures and a timeline of the evolution of computers.
* PBS: Nerds 2.0.1
<http://www.pbs.org/opb/nerds2.0.1/>\*
Explore the history of computers and the Internet on this PBS site. Students can test their knowledge about computers on the online quiz.
* Blogger
<https://www.blogger.com/>\*
Word Press
<http://wordpress.com/>\*
Which is smarter- a person or a computer? Create a classroom blog and post this question. Invite discussion among students, staff members, and experts in the computer field.
* Glogster: Poster Yourself
<http://edu.glogster.com/>\*
A collaborate online learning platform for teachers and students to express their creativity, knowledge, ideas, and skills in the classroom. Students can create a poster to illustrate the history and development of computers.
* Blabberize
<http://blabberize.com/>\*
Upload a picture and animate yourself. Students can create a blabber and use their own voices to explain and teach how computers work.
* ThinkQuest
<http://www.thinkquest.org/en/>\*
Projects come to life when students create pages with text, pictures, multimedia, votes, brainstorms, debates, and messages. Collaborate on a classroom ThinkQuest project to demonstrate knowledge about how computers work.
* Prezi
<http://prezi.com/>\*
Prezi is an online presentation tool that throws the slide-show model out the window and presents a giant canvas instead. Students can use pictures, sound, and animations to explain the history and development of computers.

**Circuits and Switches**

* ExploreLearning Gizmos: Circuits
<http://www.explorelearning.com/index.cfm?method=cResource.dspView&ResourceID=398>\*
Build a virtual circuit using batteries, light bulbs, resistors, fuses, wires, and a switch. Includes an ammeter, a voltmeter, and an ohmmeter for measuring current, voltage, and resistance throughout the circuit.
* Science Kids: Electricity Circuits
<http://www.sciencekids.co.nz/gamesactivities/electricitycircuits.html>\*
Learn about electricity circuits while experimenting with batteries, voltages, and light bulbs in this online interactive electricity activity.
* How Stuff Works: Circuits
<http://science.howstuffworks.com/environmental/energy/circuit.htm>\*
Graphics and diagrams explain circuit basics and illustrate different types of circuits.
* Poll Everywhere
<http://www.polleverywhere.com/>\*
Create a poll and gather live responses from your students using mobile phones or a web browser. Use the poll to gather predictions during the “Will It or Won’t It?” liquids and solids activity.
* IEEE Global History Network
[http://www.ieeeghn.org/wiki/index.php/Special:Home](http://www.ieeeghn.org/wiki/index.php/Special%3AHome)\*
Explore the history of innovation in the field of electrical engineering at the IEEE Virtual Museum. Includes a comprehensive history of electricity and electronics.

**Digital Information**

* OMSI Explore Technology: Robots and Computers
<http://www.omsi.edu/tech/robotscomputers.php>\*
Program your robot to navigate the perils of the robot obstacle course using your knowledge of binary code and computer “if-then” statements.
* OMSI Explore Technology: Binary Balance
<http://www.omsi.edu/tech/binary.php>\*
This interactive online activity explains how computers use binary math to calculate. Students are challenged to use binary number weights to balance the scale. Includes a detailed explanation of binary math and analog to digital conversion.
* OMSI Explore Technology: Mixing Primary Colors
<http://www.omsi.edu/tech/colormix.php>\*
An interactive Color Mixing Activity demonstrates how the millions of colors seen on computer monitors and TVs are created.
* OMSI Explore Technology: Resolution and Color Depth
<http://www.omsi.edu/tech/resolution.php>\*
An interactive activity demonstrates how pictures on a computer screen are made up of thousands of tiny dots, known as pixels. Students can explore resolution and color depth in a computer screen.
* Binary Decoder
<http://nickciske.com/tools/binary.php>\*
A binary digital coder that converts text to binary and back.
* Wikispaces
<http://www.wikispaces.com/site/privatelabel/k-12>\*
Create a class wiki site to foster student collaboration using digital information. Students can use the ASCII table to create a secret message and post in on the class wiki for other classmates to solve.

**Microprocessors**

* From Sand to Silicon: The Making of a Chip
<http://www.intel.com/pressroom/kits/chipmaking/index.htm>
An animated video, simple-to-follow documentation, and authentic graphics explain the process that Intel employs in building the chips that power many of the world’s computers.
* Intel Worldwide Manufacturing Photos
<http://www.intel.com/pressroom/archive/photos/manufacturing_photos.htm>
Photos of microprocessor manufacturing from inside an Intel clean room.
* Microprocessor Quick Reference Guide
<http://www.intel.com/pressroom/kits/quickref.htm?iid=pr1_hplinks_qrg>
The Intel microprocessor quick reference guide. This site includes “The Evolution of a Revolution,” an informative overview of Intel processor history.
* OMSI Explore Technology: Giant Trackball
<http://www.omsi.edu/tech/trackball.php>\*
An interactive activity invites students to explore the role of microprocessors in a computer mouse. Extend the learning by discovering what other components work together to create a computer mouse.
* Google SketchUp
<http://sketchup.google.com/>\*
Students can use Google SketchUp to create a 3D model of a microprocessor showing the different chip layers. Post creations to the class wiki for feedback and collaboration.
* Blabberize
<http://blabberize.com/>\*
Upload a picture and animate yourself. Students can create a blabber and use their own voices to explain and teach how microprocessors are manufactured.

**The Internet**

* How Stuff Works: The Internet
<http://computer.howstuffworks.com/internet/basics/internet.htm>\*
This comprehensive overview uses animated demonstrations, videos, and graphics to explain how the Internet works.
* PBS: Nerds 2.0.1
<http://www.pbs.org/opb/nerds2.0.1/>\*
Explore the history of computers and the Internet on this PBS site. Students can test their knowledge about the Internet on the online quiz.
* GetSmart Challenge: The Internet
<http://computer.howstuffworks.com/internet/basics/fact-or-fiction-internet-quiz.htm>\*
Students can test their knowledge about the Internet with this GetSmart Challenge online quiz titled Fact or Fiction: the Internet.
* How Stuff Works: Internet Infrastructure
<http://computer.howstuffworks.com/internet/basics/internet-infrastructure.htm>\*
Videos, animated demonstrations, and graphics illustrate the complexities of Internet infrastructure.
* Glogster: Poster Yourself
<http://edu.glogster.com/>\*
A collaborate online learning platform for teachers and students to express their creativity, knowledge, ideas, and skills in the classroom. Students can create a poster to illustrate how the Internet works.
* Make Beliefs Comix
<http://www.makebeliefscomix.com/>\*
Use animated characters and drawings to create a comic strip that demonstrates the step-by-step process of transmitting information over the Internet.
* Prezi
<http://prezi.com/>\*
Prezi is an online presentation tool that throws the slide-show model out the window and presents a giant canvas instead. Students can use pictures, sound, and animations to explain the history and development of the Internet.

**Technology and Society**

* Wordle
<http://www.wordle.net/>\*
How has technology transformed our society? What words capture the impact of technology on society? Students can use Wordle to generate a “word cloud” that illustrates their interpretation of technology and society.
* Glogster: Poster Yourself
<http://edu.glogster.com/>\*
A collaborate online learning platform for teachers and students to express their creativity, knowledge, ideas, and skills in the classroom. Students can create a poster to illustrate how technology impacts their daily lives.
* OMSI Explore Technology: Communications Technology
<http://www.omsi.edu/tech/communications.php#communications>\*
How has technology shaped the way our society communicates? The Gallery of Communications explores some of the ways that people have communicated throughout history and demonstrates how these technologies have changed the world.
* Tech 100: The Most Influential People in Technology
<http://tech100.t3.com/list/10-1/>\*
Society has evolved through the use of technology. Meet some of the most influential people in the field of technology and read about their contributions to society.
* VoiceThread
<http://voicethread.com/>\*
A VoiceThread is a collaborative, multimedia slideshow that holds images, documents, and videos and allows people to navigate slides and record comments. Students can create a VoiceThread of images that represent technology in our society, then invite classmates to collaborate with audio comments.