Computing Devices as a Technology

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1. Introduction

A **computer** is a general-purpose device that can be programmed to carry out a set of arithmetic or logical operations automatically. Since a sequence of operations can be readily changed, the computer can solve more than one kind of problem.

Conventionally, a computer consists of at least one processing element, typically a central processing unit (CPU), and some form of memory. The processing element carries out arithmetic and logic operations, and a sequencing and control unit can change the order of operations in response to stored information. Peripheral devices allow information to be retrieved from an external source, and the result of operations saved and retrieved.

Mechanical analog computers started appearing in the first century and were later used in the medieval era for astronomical calculations. In World War II, mechanical analog computers were used for specialized military applications such as calculating torpedo aiming. During this time the first electronic digital computers were developed. Originally they were the size of a large room, consuming as much power as several hundred modern personal computers (PCs).

Modern computers based on integrated circuits are millions to billions of times more capable than the early machines, and occupy a fraction of the space. Computers are small enough to fit into mobile devices, and mobile computers can be powered by small batteries. Personal computers in their various forms are icons of the Information Age and are what most people consider as "computers." However, the embedded computers found in many devices from MP3 players to fighter aircraft and from electronic toys to industrial robots are the most numerous.

Computer system is define as the combination of hardware, software user and data with referring to communication and procedure involved in between them

Computers have simplified our life to a great extent. Things that were impossible earlier can now be completed instantly thanks to computers. However, this does not mean that a PC is all work and no play.

Computer Basics This module introduces pupils to the world of computers and equips them with a basic knowledge of computers and how to take care of computer equipment. While the emphasis is on fundamental knowledge and skills, the developments in hardware and software are also included as and when applicable.

2. Computers in Everyday Life

This module covers the use of computers in the home, school, workplace and community. Pupils learn the impact of computers and the Internet on people and society, and are introduced to emerging trends and developments.

Computer Graphics This module introduces pupils to computer art and design through the use of computer software like corel draw, fireworks paint eyc. The basic concepts, tools and techniques are covered for creating and manipulating 2D vector graphics and bitmap graphics.

a) Document Processing
Document processing is the process of putting ideas into visually effective documents quickly and accurately through the use of computer technology. The process includes creating, editing, formatting, manipulating, storing, retrieving and printing of content in a desired manner. The study of this module is reinforced through practical work.

b) Spreadsheets
A spreadsheet program enables the user to enter text, numbers and formulae into a convenient useful table. This module covers features of spreadsheet software to carry out specific tasks involving organisation, manipulation and presentation of data.

c) Multimedia Presentation
Multimedia presentations incorporate the different media elements: text, graphics, sound, animation and video. The module concentrates on the design of a multimedia presentation through the use of presentation software in an effective way so as to enable the message and/or ideas to be communicated.

3. Computing

Computing is any goal-oriented activity requiring, benefiting from, or creating algorithmic processes—e.g. through computers. Computing includes designing, developing and building hardware and software systems; processing, structuring, and managing various kinds of information; doing scientific research on and with computers; making computer systems behave intelligently; and creating and using communications and entertainment media. The field of computing includes computer engineering, software engineering, computer science, information systems, and information technology.

"In a general way, we can define computing to mean any goal-oriented activity requiring, benefiting from, or creating computers. Thus, computing includes designing and building hardware and software systems for a wide range of purposes; processing, structuring, and managing various kinds of information; doing scientific studies using computers;

making computer systems behave intelligently; creating and using communications and entertainment media; finding and gathering information relevant to any particular purpose, and so on. The list is virtually endless, and the possibilities are vast."

Application of Computing are:
- Computational Thinking
- Cloud Computing
- Internet of Things

3.1 Computational Thinking

One of the exciting things about Computing is that you learn a new and fundamental way of thinking and problem solving; a way of thinking that is critical in the 21st Century. It is called "Computational Thinking"

Computational thinking is thinking in terms of prevention, protection, and recovery from worst-case scenarios through redundancy, damage containment, and error correction. It is calling gridlock deadlock and contracts interfaces.

It represents a universally applicable attitude and skill set everyone, not just computer scientists, would be eager to learn and use. Which in turn result to computional thinking. To reading, writing, and arithmetic, we should add computational thinking to every child's analytical ability.

Just as the printing press facilitated the spread of the three Rs - **Reduce, Reuse and Recycle**, what is appropriately incestuous about this vision is that computing and computers facilitate the spread of computational thinking.

Computational methods and models give us the courage to solve problems and design systems that no one of us would be capable of tackling alone. Computational thinking confronts the riddle of machine intelligence: What can humans do better than computers? And What can computers do better than humans? Most fundamentally it addresses the question: What is computable? Today, we know only parts of the answers to such questions.

Computational thinking involves solving problems, designing systems, and understanding human behavior, by drawing on the concepts fundamental to computer science. Computational thinking includes a range of mental tools that reflect the breadth of the field of computer science. Having to solve a particular problem, we might ask: How difficult is it to solve? and What's the best way to solve it? Computer science rests on solid theoretical underpinnings to answer such questions. Stating the difficulty of a problem accounts for the underlying power of the machine—the computing device that will run the solution. We must consider the machine's instruction set, its resource constraints, and its operating environment.

Computational thinking is thinking recursively. It is parallel processing. It is interpreting code as data and data as code. It is type checking as the generalization of dimensional analysis. It is recognizing both the virtues and the dangers of aliasing, or giving someone or something more than one name. It is recognizing both the cost and power of indirect addressing and procedure call. It is judging a program not just for correctness and efficiency but for aesthetics, and a system's design for simplicity and elegance.


Hardware is any part of your computer that has a **physical structure**, such as the keyboard or mouse. It also includes all of the computer's internal parts, which you can see in the image below.

- **Software** is any **set of instructions** that tells the hardware what to do. It is what guides the hardware and tells it how to accomplish each task. Some examples of software include web browsers, games, and word processors. Below, you can see an image of Microsoft PowerPoint, which is used to create presentations.
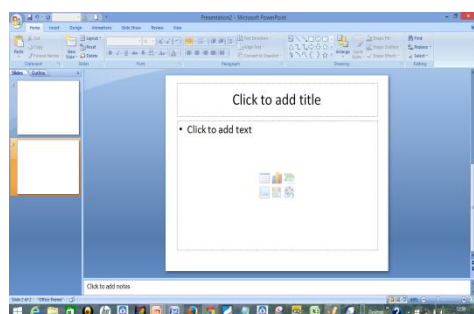
Everything you do on your computer will rely on both hardware and software. E-Learning Resources (Exposition of valuable learning sites/resources from the net)

4. Hand-On Activities on Basic Operating Drills in Computers

- **Basic Computer Skills** include how to use a mouse, keyboard and typing skills, opening and closing files, accessing data from a CD-ROM, how to locate saved files, how to copy and paste text, review questions, activities, and a quiz. (attached to this paper is a list of shortcuts we can use on the keyboard).
- Furthermore, it is very important to make our lessons multimedia i.e. the use of different media to convey information i.e. text together with audio, graphics and animations.

1) How to prepare Powerpoint presentations for our lesson; the slides, the design, animations, inserting pictures, audios and videos.
2) Using MS Excel to add, subtract, find average etc.

5. Hand-On Activities On E-Learning Resources in DLHS

In DLHS, we have the Internet in place, the Intranet has two major parts, the LMS (i.e. E-learning portal) and CBT (E-exam portal).

The Internet is very useful in downloading relevant videos that we can upload into the school server for students to download or insert in our presentations.

6. How to download videos from the Internet:

1) Get video downloader e.g. youtube downloader, ilivid etc (You can also download this from the Internet)
2) There are many websites to get resources for our lessons. (Attached to this paper is 100 websites for teachers). We shall use Youtube.com/education for this practical.
3) Launch your browser, and type at the address bar: www.youtube.com/education.
4) At the search bar type the topic of your lesson, from the list find the relevant one which will not be too lengthy (3 to 5 minutes will not be too much to be part of your 40 minutes lessons)
5) Open you youtube downloader or ilivid
6) Copy the url (i.e. the address on the address bar of the video (e.g. https://www.youtube.com/results?search_query=input+d evices) of the videos and paste at the paste link of your downloader.
7) Click download and give it some time to download.
8) It is likely the video will be found in your 'download' or 'document'

The LMS part of the Intranet.
Adoption of Learning Management Systems offers new possibilities for managing courses and delivering instruction, and often online instruction. Learning Management Systems (LMS), also known as curriculum or course management systems, are platforms that offer discrete digital spaces for courses in which teachers and students can upload or download material, create content, and respond to one another's materials.

The CBT part of the Intranet avails the students the opportunity to write exams which is automatically marked

and they are able to see the results, corrections are also seen. Students can repeatedly attempt questions.

How to upload questions into DLHS server ... PRATICAL SESSIONS ...

Launch to the server through the IP address or the url, (this will be given to you by the ICT dept.)

Click 'Visit the E-Exam portal'

Click 'login', enter your username and password if you have registered, else register and then login.

Click E-Exams option

Enter TC Name and password, click 'login' (the ICT dept. would have given you your TC (Test Conductor) name and password)

Choose 'manage subject' from the options.

Click 'Add' and enter subject name and description.

Go back to dashboard by clicking 'Dashboard' and Choose 'manage tests'

Click 'Add' and supply test details

Go back to dashboard and click 'Prepare questions'

Click 'manage questions'

Click 'Add' and Type in questions and answers

Choose the correct answer, Click 'save'

To write exams student will click E-exam and register from the Home page

In conclusion, the current strategic plans for ICT in education across a number of countries include what is considered to be the importance of technology related skills for success in today's global workforce. These policies state the importance of all students acquiring a solid grounding in ICT as a prerequisite for economic and social equity. Furthermore, educational use of ICT is considered an important means to promote greater social equity and the effective use of ICT to improve the quality of teaching and learning. These services include educational content, technical and pedagogical support, research, evaluation, and monitoring. As educators, we therefore need to go the extra mile to see to the realisation of this global goal, that our student anywhere ein world they find them selves, they will not be find wanting or be backward.

Thanks.

Quotes
1. *"The most effective, successful professionals are constantly learning, they take the time to apply what they have learned, and they continually work to improve themselves."* - Joel Gardner
2. *"Think out of the box and create a learning experience where the learner can interact with the content and their brains."* - Rosalie Ledda Valdez

The use of keyboard and the **General Shortcuts**
* CTRL+C (Copy)
* CTRL+X (Cut)
* CTRL+V (Paste)
* CTRL+Z (Undo)
* DELETE (Delete)
* SHIFT+DELETE (Delete the selected item permanently without placing the item in the Recycle Bin)
* CTRL while dragging an item (Copy the selected item)
* CTRL+SHIFT while dragging an item (Create a shortcut to the selected item)

* F2 key (Rename the selected item)
* CTRL+RIGHT ARROW (Move the insertion point to the beginning of the next word)
* CTRL+LEFT ARROW (Move the insertion point to the beginning of the previous word)
* CTRL+DOWN ARROW (Move the insertion point to the beginning of the next paragraph)
* CTRL+UP ARROW (Move the insertion point to the beginning of the previous paragraph)
* CTRL+SHIFT with any of the arrow keys (Highlight a block of text)
* SHIFT with any of the arrow keys (Select more than one item in a window or on the desktop, or select text in a document)
* CTRL+A (Select all)
* F3 key (Search for a file or a folder)
* ALT+ENTER (View the properties for the selected item)
* ALT+F4 (Close the active item, or quit the active program)
* ALT+ENTER (Display the properties of the selected object)
* ALT+SPACEBAR (Open the shortcut menu for the active window)
* CTRL+F4 (Close the active document in programs that enable you to have multiple documents open simultaneously)
* ALT+TAB (Switch between the open items)
* ALT+ESC (Cycle through items in the order that they had been opened)
* F6 key (Cycle through the screen elements in a window or on the desktop)
* F4 key (Display the Address bar list in My Computer or Windows Explorer)
* SHIFT+F10 (Display the shortcut menu for the selected item)
* ALT+SPACEBAR (Display the System menu for the active window)
* CTRL+ESC (Display the Start menu)
* ALT+Underlined letter in a menu name (Display the corresponding menu)
* Underlined letter in a command name on an open menu (Perform the corresponding command)
* F10 key (Activate the menu bar in the active program)
* RIGHT ARROW (Open the next menu to the right, or open a submenu)
* LEFT ARROW (Open the next menu to the left, or close a submenu)
* F5 key (Update the active window)
* BACKSPACE (View the folder one level up in My Computer or Windows Explorer)
* ESC (Cancel the current task)
* SHIFT when you insert a CD-ROM into the CD-ROM drive (Prevent the CD-ROM from automatically playing)

Dialog Box Keyboard Shortcuts

* CTRL+TAB (Move forward through the tabs)
* CTRL+SHIFT+TAB (Move backward through the tabs)
* TAB (Move forward through the options)
* SHIFT+TAB (Move backward through the options)
* ALT+Underlined letter (Perform the corresponding command or select the corresponding option)
* ENTER (Perform the command for the active option or

button)
 * SPACEBAR (Select or clear the check box if the active option is a check box)
 * Arrow keys (Select a button if the active option is a group of option buttons)
 * F1 key (Display Help)
 * F4 key (Display the items in the active list)
 * BACKSPACE (Open a folder one level up if a folder is selected in the Save As or Open dialog box)

Microsoft Natural Keyboard Shortcuts

 * Windows Logo (Display or hide the Start menu)
 * Windows Logo+BREAK (Display the System Properties dialog box)
 * Windows Logo+D (Display the desktop)
 * Windows Logo+M (Minimize all of the windows)
 * Windows Logo+SHIFT+M (Restore the minimized windows)
 * Windows Logo+E (Open My Computer)
 * Windows Logo+F (Search for a file or a folder)
 * CTRL+Windows Logo+F (Search for computers)
 * Windows Logo+F1 (Display Windows Help)
 * Windows Logo+ L (Lock the keyboard)
 * Windows Logo+R (Open the Run dialog box)
 * Windows Logo+U (Open Utility Manager)

Accessibility Keyboard Shortcuts

 * Right SHIFT for eight seconds (Switch FilterKeys either on or off)
 * Left ALT+left SHIFT+PRINT SCREEN (Switch High Contrast either on or off)
 * Left ALT+left SHIFT+NUM LOCK (Switch the MouseKeys either on or off)
 * SHIFT five times (Switch the StickyKeys either on or off)
 * NUM LOCK for five seconds (Switch the ToggleKeys either on or off)
 * Windows Logo +U (Open Utility Manager)

Windows Explorer Keyboard Shortcuts

 * END (Display the bottom of the active window)
 * HOME (Display the top of the active window)
 * NUM LOCK+Asterisk sign (*) (Display all of the subfolders that are under the selected folder)
 * NUM LOCK+Plus sign (+) (Display the contents of the selected folder)
 * NUM LOCK+Minus sign (-) (Collapse the selected folder)
 * LEFT ARROW (Collapse the current selection if it is expanded, or select the parent folder)
 * RIGHT ARROW (Display the current selection if it is collapsed, or select the first subfolder)

Shortcut Keys for Character Map
 * After you double-click a character on the grid of characters, you can move through the grid by using the keyboard shortcuts:
 * RIGHT ARROW (Move to the right or to the beginning of the next line)
 * LEFT ARROW (Move to the left or to the end of the

previous line)
 * UP ARROW (Move up one row)
 * DOWN ARROW (Move down one row)
 * PAGE UP (Move up one screen at a time)
 * PAGE DOWN (Move down one screen at a time)
 * HOME (Move to the beginning of the line)
 * END (Move to the end of the line)
 * CTRL+HOME (Move to the first character)
 * CTRL+END (Move to the last character)
 * SPACEBAR (Switch between Enlarged and Nor mal mode when a character is selected)

Microsoft Management Console (MMC) Main Window Keyboard Shortcuts

 * CTRL+O (Open a saved console)
 * CTRL+N (Open a new console)
 * CTRL+S (Save the open console)
 * CTRL+M (Add or remove a console item)
 * CTRL+W (Open a new window)
 * F5 key (Update the content of all console windows)
 * ALT+SPACEBAR (Display the MMC window menu)
 * ALT+F4 (Close the console)
 * ALT+A (Display the Action menu)
 * ALT+V (Display the View menu)
 * ALT+F (Display the File menu)
 * ALT+O (Display the Favorites menu)

Window Keyboard Shortcuts
 * CTRL+P (Print the current page or active pane)
 * ALT+Minus sign (-) (Display the window menu for the active console window)
 * SHIFT+F10 (Display the Action shortcut menu for the selected item)
 * F1 key (Open the Help topic, if any, for the selected item)
 * F5 key (Update the content of all console windows)
 * CTRL+F10 (Maximize the active console window)
 * CTRL+F5 (Restore the active console window)
 * ALT+ENTER (Display the Properties dialog box, if any, for the selected item)
 * F2 key (Rename the selected item)
 * CTRL+F4 (Close the active console window. When a console has only one console window, this shortcut closes the console)

Remote Desktop Connection Navigation
 * CTRL+ALT+END (Open the microsoft Windows NT Security dialog box)
 * ALT+PAGE UP (Switch between programs from left to right)
 * ALT+PAGE DOWN (Switch between programs from right to left)
 * ALT+INSERT (Cycle through the programs in most recently used order)
 * ALT+HOME (Display the Start menu)
 * CTRL+ALT+BREAK (Switch the client computer between a window and a full screen)
 * ALT+DELETE (Display the Windows menu)
 * CTRL+ALT+Minus sign (-) (Place a snapshot of the active window in the client on the Terminal server clipboard and provide the same functionality as pressing PRINT SCREEN on a local computer.)
 * CTRL+ALT+Plus sign (+) (Place a snapshot of the entire

client window area on the Terminal server clipboard and provide the same functionality as pressing ALT+PRINT SCREEN on a local computer.)

Internet Explorer navigation
 * CTRL+B (Open the Organize Favorites dialog box)
 * CTRL+E (Open the Search bar)
 * CTRL+F (Start the Find utility)
 * CTRL+H (Open the History bar)
 * CTRL+I (Open the Favorites bar)
 * CTRL+L (Open the Open dialog box)
 * CTRL+N (Start another instance of the browser with the same Web address)
 * CTRL+O (Open the Open dialog box, the same as CTRL+L)
 * CTRL+P (Open the Print dialog box)
 * CTRL+R (Update the current Web page)
 * CTRL+W (Close the current window)

The 100 Best Video Sites For Educators
Bringing multimedia into the classroom is a great way to engage students in learning. Supplementing lessons, opening up new interests, and offering inspiration, online videos make for an incredible teaching tool. In 2010, we covered our favorite 100 video sites for educators, and we've now updated our list for 2012 with more than 100 resources and more than 25 brand new entries. Read on, and you'll be able to check out the very best sources for educational videos on the web.

7. Educational Video Collections

Specifically designed for education, these collections make it easy to find video learning resources.
1) **TeacherTube**: This YouTube for teachers is an amazing resource for finding educationally-focused videos to share with your classroom. You can find videos uploaded by other teachers or share your own.
2) **Edutopia**: An awesome place to find learning ideas and resources, Edutopia has videos, blogs, and more, all sorted into grade levels.
3) **YouTube EDU**: A YouTube channel just for education, you can find primary and secondary education, university-level videos, and even lifelong learning.
4) **Classroom Clips**: Classroom Clips offers media for educators and students alike, including video and audio in a browseable format.
5) **neoK12**: Find science videos and more for school kids in K-12 on neoK12.
6) **OV Guide**: Find education videos on this site, featuring author readings and instructional videos.
7) **CosmoLearning**: This free educational website has videos in 36 different academic subjects.
8) **Google Educational Videos**: Cool Cat Teacher offers this excellent tutorial for finding the best of Google's educational videos.
9) **Brightstorm**: On Brightstorm, students can find homework help in math and science, even test prep, too.
10) **Explore.org**: Explore.org shares live animal cams, films, educational channels, and more for your classroom to explore.
11) **UWTV**: Offered by the University of Washington, UWTV has videos in the arts, K-12, social sciences, health, and more.
12) **Videolectures.net**: With Videolectures.net, you'll get access to browseable lectures designed for the exchange of ideas and knowledge, offering videos in architecture, business, technology, and many more categories.
13) **TED-Ed**: From a site that's long been known for big ideas, you'll find TED-Ed, videos specifically designed to act as highly engaging and fun lessons.
14) **Zane Education**: Zane Education offers resources for visual learning, including the very popular on demand subtitled videos.
15) **Backpack TV**: In this educational video library, you'll find a special interest in math, science, and other academic subjects.
16) **MentorMob**: Featuring learning playlists, MentorMob is a great place to find lessons you want to teach.
17) **Disney Educational Productions**: This resource from Disney is a great place to find videos for students at the K-12 level.

8. General Video Collections

Network TV, inspiring talks, and more are all available in these collections. Check out special categories and searches to find videos that will work in your classroom.
18) **Hulu:** A great place to find the latest TV shows, Hulu is also a source of educational videos. Documentaries, PBS, even Discovery videos are all available on the site.
19) **Internet Archive:** Find so much more than videos in the Internet Archive. Images, live music, audio, texts, and yes, historical and educational videos are all available on Archive.org.
20) **TED:** Share seemingly endless inspiration with your students through TED, a fountain of talks based on compelling ideas.
21) **MIT Video:** Online education giant MIT has an incredible video collection, offering more than 10,000 videos for science, technology, and more.
22) **TVO:** TVO is a really fun and useful online TV station, with great ways for kids, parents, and educators to learn about the world.
23) **Big Think:** Much like TED, Big Think offers videos (and more) from some of the world's top thinkers and learners.
24) **@Google Talks:** On this YouTube channel, you'll find talks from creators: authors, musicians, innovators, and speakers, all discussing their latest creations.
25) **Metacafe:** Find free video clips from just about anywhere, offering educational videos, documentaries, and more.
26) **Link TV:** On Link TV, you'll find videos and broadcasts meant to connect you and your students to the greater world through documentaries and cultural programs.

9. Teacher Education

Featuring higher-level learning, these video sites are great resources for finding education that's fit for teachers.

27) **Academic Earth**: Learn about science, justice, economics, and more from some of the world's great universities. You can even earn a degree from this site!

28) **Teacher Training Videos**: Specifically created to teach educators, Teacher Training Videos is a great place to find online tutorials for technology in education.

29) **Classroom 2.0**: Check out Classroom 2.0′s videos to learn about Web 2.0, social media, and more.

30) **Atomic Learning**: Visit Atomic Learning to find resources for K-12 professional development.

31) **iTunesU**: Find university-level learning and more from iTunesU.

32) **Videos for Professional Development**: An excellent collection of professional development videos, Wesley Fryer's post shares some of the best teacher videos available.

33) **Learner.org**: Annenberg Learner offers excellent teacher professional development and classroom resources for just about every curriculum available.

34) **MIT Open CourseWare**: The leader in Open CourseWare, MIT has free lectures and videos in 2,100 courses.

10. Lesson Planning

Put together your lesson plans with the help of these useful video sites.

35) **Teachers' Domain**: Join the Teachers' Domain, and you'll get access to educational media from public broadcasting and its partners, featuring media from the arts, math, science, and more.

36) **Meet Me at the Corner**: A great place for younger kids to visit, Meet Me At the Corner has educational videos, and kid-friendly episodes, including virtual field trips and video book reviews by kids, for kids.

37) **WatchKnowLearn**: WatchKnowLearn is an incredible resource for finding educational videos in an organized repository. Sorted by age and category, it's always easy to find what you're looking for.

38) **BrainPOP**: On this education site for kids, you'll find animated educational videos, graphics, and more, plus a special section for BrainPOP educators.

39) **The KidsKnowIt Network**: Education is fun and free on this children's learning network full of free educational movies and video podcasts.

40) **Khan Academy**: With more than 3,200 videos, Khan Academy is the place to learn almost anything. Whether you're seeking physics, finance, or history, you'll find a lesson on it through Khan Academy.

41) **Awesome Stories**: Students can learn the stories of the world on this site, with videos explaining what it was like to break ranks within the Women's Movement, the life of emperor penguins, and even Martin Luther King, Jr's "We Shall Overcome" speech.

42) **Nobelprize**: Cap off lessons about Nobel Prize winners with videos explaining their work and life, direct from the source on Nobelprize.org.

43) **JohnLocker**: JohnLocker is full of educational videos and free documentaries, including *Yogis of Tibet* and *Understanding the Universe*.

11. Science, Math, and Technology

You'll find special attention for STEM subjects on these video sites.

44) **Green Energy TV**: On Green Energy TV, you'll find learning resources and videos for the green movement, including a video version of the children's book *Living Green: A Turtle's Quest for a Cleaner Planet*.

45) **BioInteractive**: Find free videos and other resources for teaching "ahead of the textbook" from BioInteractive, part of the Howard Hughes Medical Institute.

46) **ARKive**: Share images and videos of the world's most endangered species with your students, thanks to ARKive. These wildlife films and photos are from some of the world's best filmmakers and photographers, sharing stunning images that everyone can appreciate.

47) **MathTV**: Students who need extra help with math can find support on MathTV. This site offers videos explaining everything from basic mathematics all the way to trigonometry and calculus.

48) **The Vega Science Trust**: A project of Florida State University, The Vega Science Trust shares lectures, documentaries, interviews, and more for students to enjoy and learn from.

49) **The Science Network**: Check out The Science Network, where you'll find the world's leading scientists explaining concepts including viruses and the birth of neurons.

50) **PopTech**: Bringing together a global community of innovators, PopTech has videos explaining economics, water, and plant-based fuels.

51) **PsychCentral**: Students can learn about what makes people tick through PsychCentral's brain and behavior videos.

52) **How Stuff Works**: The video channel from How Stuff Works offers an in-depth look at adventure, animals, food, science, and much more.

53) **Science Stage**: Find science videos, tutorials, courses, and more streaming knowledge on Science Stage.

54) **Exploratorium TV**: Allow students to explore science and beyond with Exploratorium TV's videos, webcasts, podcasts, and slideshows.

55) **SciVee**: SciVee makes science visible, allowing searchable video content on health, biology, and more.

56) The Futures Channel: Visit the Futures Channel to find educational videos and activities for hands-on, real world math and science in the classroom.

57) ATETV: Check out Advanced Technological Education Television (ATETV) to find videos exploring careers in the field of technology.

12. History, Arts, and Social Sciences

Explore history and more in these interesting video collections.

59) **The Kennedy Center**: Find beautiful performances from The Kennedy Center's Performance Archive.

60) The Archaeology Channel: Students can explore human cultural heritage through streaming media on The Archaeology Channel.

61) **Web of Stories**: On Web of Stories, people share their life stories, including Stan Lee, writer, Mike Bayon, WWII veteran, and Donald Knuth, computer scientist.

62) **Stephen Spielberg Film and Video Archive**: In this archive, you'll find films and videos relating to the Holocaust, including the Nuremberg Trials and Hitler speeches.

63) **Culture Catch**: Students can tune into culture with Dusty Wright's Culture Catch.

64) **Folkstreams**: On Folkstream.net, a national preserve of documentary films about American roots cultures, you'll find the best of American folklore films.

65) Digital History: A project of the University of Houston, Digital History uses new technology, including video, to enhance teaching and research in history.

66) **History Matters**: Another university project, this one is from George Mason University. Sharing primary documents, images, audio, and more, there's plenty of historic multimedia to go around on this site.

67) **Social Studies Video Dictionary**: Make definitions visual with this video dictionary for social studies.

68) **The Living Room Candidate**: From the Museum of the Moving Image, The Living Room Candidate features presidential campaign commercials from 1952 to 2008.

69) Video Active: Find Europe's TV heritage through Video Active, a collection of TV programs and stills from European audiovisual archives.

70) **Media Education Foundation**: The Media Education Foundation offers documentary films and other challenging media for teaching media literacy and media studies.

13. Video Tools

Make it easy to find, share, and view videos with these tools.

71) **DropShots**: On DropShots, you'll find free, private, and secure storage and sharing for video and photos.

72) **Muvee**: Using Muvee, you can create your own photo and video "muvees" to share privately with your class.

73) **Tonido**: Tonido makes it possible to run your own personal cloud, accessing video files on your computer from anywhere, even your phone.

74) **Vidique**: On Vidique, you'll find a video syndication system where you can create your own channel of curated content for the classroom.

75) **SchoolTube**: On SchoolTube, you'll find video sharing for both students and teachers, highlighting the best videos from schools everywhere.

14. Network and Program Videos

Check out these sites to find public broadcasting and other educational programs.

76) **PBS Video**: Watch and share PBS videos online with this site.

77) **National Geographic**: Find some of the world's most amazing videos of natural life on National Geographic's online video home.

78) **NOVA Teachers**: NOVA shares highly organized videos for teachers, with 1-3 hour programs divided into chapters, plus short 5-15 minute segments from NOVA scienceNOW.

79) **Discovery Education**: Use Discovery Education's videos to inspire curiosity, bringing the Discovery channel into your classroom.

80) **C-SPAN Video Library**: Find Congressional and other political programs and clips in this digital archive from C-SPAN.

81) **NBC Learn**: Check out NBC Learn to find excellent resources for learning from NBC, including the science behind just about everything from the summer Olympics to hockey.

82) **History.com**: Watch full episodes, clips, and videos from the History channel.

83) **Biography**: Get the true story behind peoples' lives from these videos from the Biography channel.

84) **BBC Learning**: BBC offers an excellent learning site, including learning resources for schools, parents, and teachers. One of BBC's most impressive resources is a live volcano conversation discussing the world's most active volcano in Hawaii.

15. Free Movies and Clips

Documentaries and other educational movies and clips are available on these sites.

85) **Free Documentaries:** On Free Documentaries, "the truth is free," with a variety of documentary films available for streaming.

86) **SnagFilms:** On SnagFilms, you can watch free movies and documentaries online, with more than 3,000 available right now.

87) **Top Documentary Films:** Watch free documentaries online in this great collection of documentary movies.

88) **TV Documentaries:** This Australian site has excellent documentaries about child growth, historic events, and even animations about classical Greek mythology.

16. How-Tos

Satisfy students' desire for knowledge and hands-on learning by sharing how-to videos from these sites.

89) **5min**: If you've got five minutes, you can learn how to do something on this site. Check it out to find instructional videos and DIY projects.

90) **Wonder How To**: Learn everything about anything from Wonder How To's show and tell videos.

91) **Instructables**: This community of doers shares instructions (often, video) for doing just about anything, from making secret doors to tiny origami.

92) **Howcast**: Find some of the best how-to videos online with Howcast.

93) **MindBites**: Check out MindBites to find thousands of video lessons, how-tos, and tutorials.

94) **W3Schools**: Through W3Schools' web tutorials (video and otherwise), you can learn how to create your own websites.

95) **Videojug**: Videojug encourages users to "get good at life" by watching more than 60,000 available how-to videos and guides.

17. Government and Organizations

Offered as a service from government organizations and other groups, these are great places to find top-notch educational videos and often, historical treasures.

96) **US National Archives**: Explore US history in this YouTube channel from the US National Archives.
97) **National Science Foundation**: From the National Science Foundation, you'll find a wealth of multimedia, including instructional and educational videos.
98) **NASA eClips**: NASA offers a great way for students and educators to learn about space exploration, with clips divided by grade level.
99) **NASA TV**: Tune in to NASA TV to watch launches, talks, even space station viewing.
100) **Library of Congress**: Through the Library of Congress, you can find videos and other classroom materials for learning about American history.
101) **American Memory Collections**: Search America's collective memory to find videos and other multimedia from the American past, including film and sound recordings from the Edison Companies and 50 years of Coca-Cola TV ads.
102) **Canadian National Film Bureau**: Check out the Canadian National Film bureau to find hundreds of documentaries and animated films available online