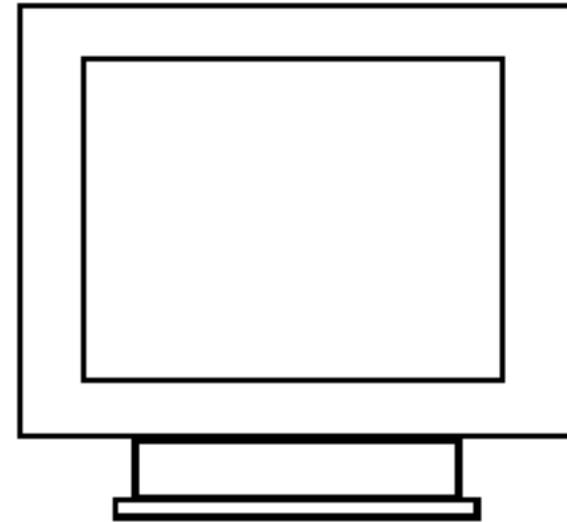
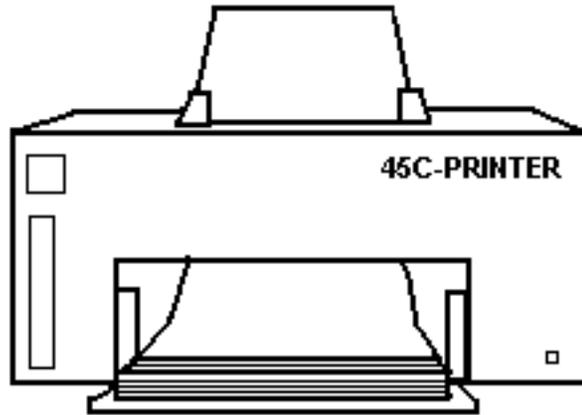


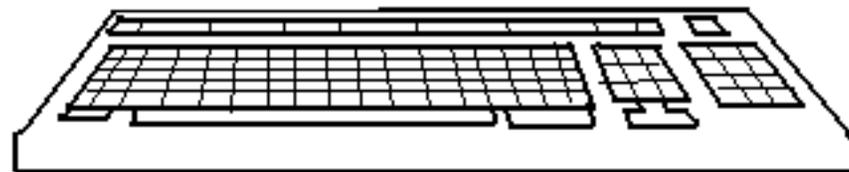
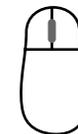
Identify the main parts of a personal computer system.



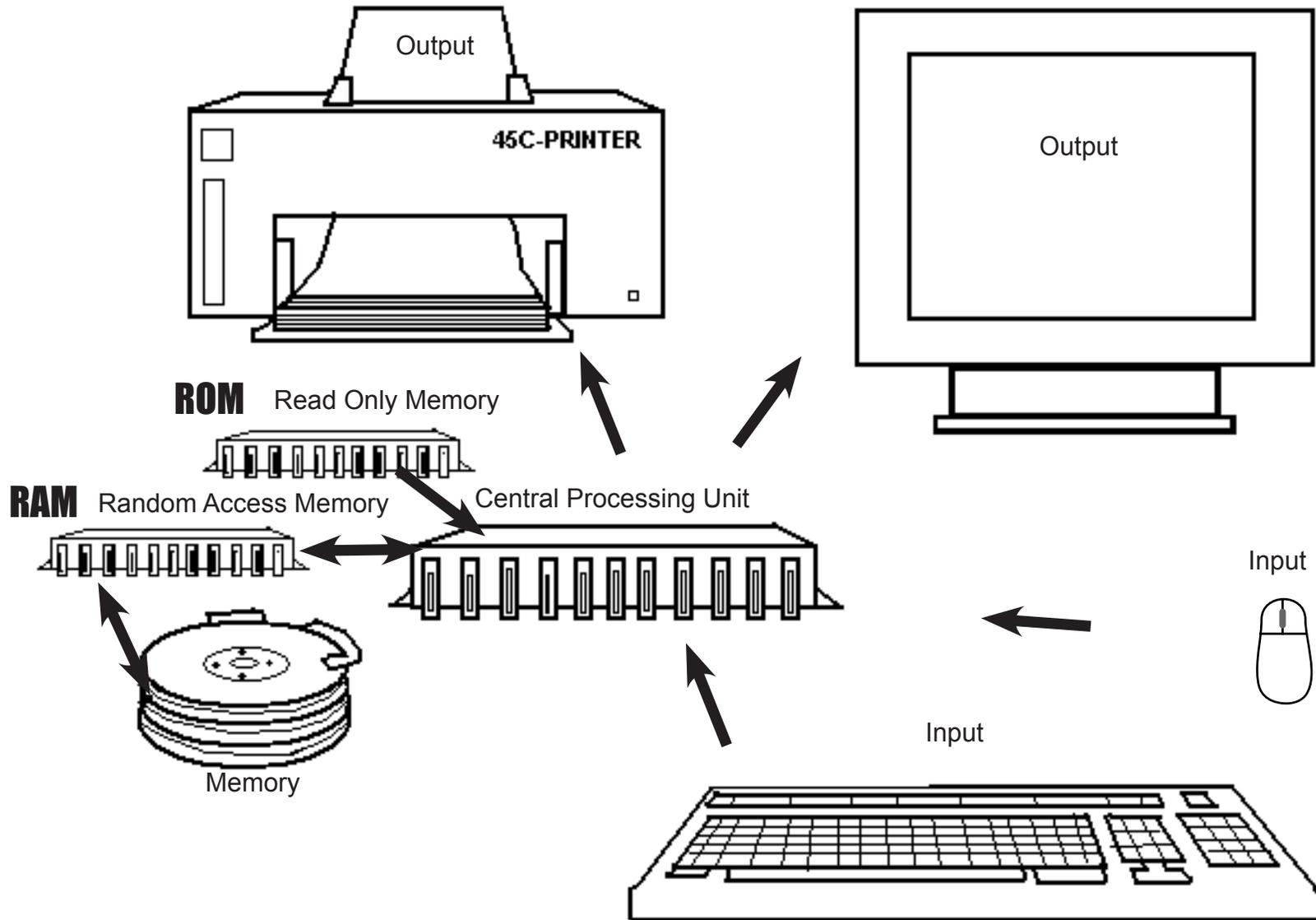
ROM



RAM



Identify the main parts of a personal computer system.



A Good Old Fashioned Computer

Today many computers are sold as one unit and it is easy for children to think of the computer screen as the actual computer. The old fashioned (ie circa 2005) personal computers had towers with wires connecting the keyboard and the monitor screen to the central processing unit.

Touch screens, laptops, ipads and smart phones have “hidden” the CPU into the device. But it helps students understand if they can see a computer system that has the parts separately.

If you don't have a system with separate devices in your home, visit a computer store or cut out pictures from a sale flyer that shows the individual parts.

Use the MatchCard to show how the parts function together.

Central Processing Unit

The brain of the computer is the CPU. It is like the SPU of other electronic systems that were studied in Technology MatchCard 4. How is the CPU different from an SPU? The signals are binary codes.

Software Vs Hardware

Software is the computer programming programs. You can buy software (show them the packaging) and some software is already downloaded in your computer when you buy it. The software tells the computer what to do with the inputs to accomplish a goal for the user.

RAM vs ROM

Read Only Memory is information stored in a computer that the user can read, but not change. Random Access Memory is information the user can add to, modify, or delete. Your student is likely familiar with Word documents or other word processing programs. They have probably seen or downloaded pdfs.

If they are not familiar with pdfs, have them download this or any other pdf. They can't change it, just use it.

Have your student convert one of their documents they have made to a pdf. This is done by hitting File:Save As. Under the file name box is another box that says “Save As Type.” Check the option “pdf” to make it read only.

Now they can share it with others without the other parties being able to change it.

Outputs

We are all familiar with the computer monitor and printer as outputs. They show us the information that the computer has processed.

MOST of the time the monitor is an output. We will look later at how it can sometimes be input.

Input - Browser - Output

We are going to show students how our computer browser acts as the Central Processing Unit to convert an input into an output.

Go to any computer page on the web. A page with pictures, advertisements, and links as well as written words is ideal. You are looking at the output.

Have the student take a look at the html code as the input. To do this right click on the page. You may have done this before if you wanted to copy an image off a web-page (beware of copyright laws - usually not an issue for a student using an image on a report - but correct attribution is required even for students.) But in this case you do not want to click on an image on the page but on the page itself.

After right clicking, a pop up box appears. Scroll down and click on the option “View Page Source.”

Continued Next Page

Input - Browser - Output (continued)

Whoa! That's a big difference. The html code you are looking at is the input; this is the way the webmaster wrote the page. Okay, sometimes they get a little help in doing all that coding.

So what, exactly, is a browser? It is the computer program that takes the computer code (input) and translates it into the web page you look at (output.)

Let's Have A Little Input

The output without the input would make computers much less functional. We are used to interactive computers, but we need some way of getting our input to the computer. Hence, the computer keyboard. The mouse is another input device.

Joysticks and speakers are other devices that are used to give input into the computer system.

Other Computer Systems

Now look at other computer systems in your house. A laptop or smart phone has all of those components embedded in one device. Compare the input and output of those devices and the desk top computer.

So Many Computers

Desk tops, mobile devices, notebooks, laptops... by the time you read this even more options may be widely available.

Look at a computer store (or at least a computer store's website) to look at any of these types of computers that you do not have in your home.

Your student might even make a chart of the advantages or disadvantages of each of the devices. Rather than getting stuck with the opinion "this device is better than that device" push them to consider "this device may be better for people who...."

Computers and the Internet

Younger students may equate a computer as being a device that can access the internet. Explain that not all computers are connected to the internet. You may have computerized toys in your home as an example. Your car or your watch may have a computer.

Show them the modem in your house which connects your computer to the internet.

Screens as Input and Output

We mentioned earlier that some screens can be inputs and outputs instead of just outputs. Have you figured out how? Touch screens and camera phones acts as inputs.

Your Computer Software

Introduce your student to the software that is included on your computer as well as any programs that you have downloaded. Word processing, spread sheets, paint or drawing programs, and photo processing programs are all valuable to have some experience with prior to high school.

And the Next Thing Is.....

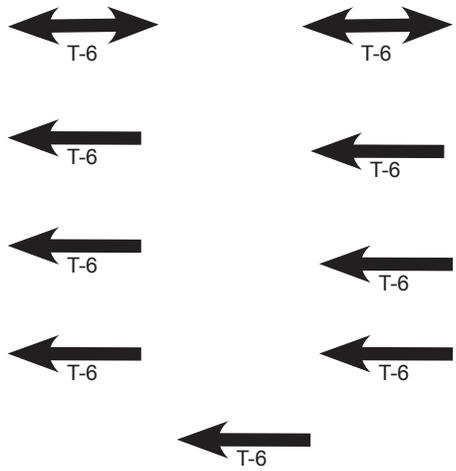
Talk to your students about how computers have changed in your lifetime. How has society changed as computers have changed? (I remember the first time I saw someone in a grocery store talking on a cell phone. I thought it was weird they were by themselves and talking.) Make some predictions of what new types of inputs and outputs may be around the corner.

Computer Programming

If your student is interested in further exploring how codes make computers function, you might like to introduce computer programming. Khan University has simple (and free) lessons to get either you or your student started.

Technology Information Pieces

Central Processing Unit T-6
Read Only Memory T-6
Random Access Memory T-6
Memory T-6
Input T-6
Input T-6
Output T-6
Output T-6



To Make Your **MatchCard** more durable:

1. Put the student MatchCard in a clear plastic page protector.
2. Laminate the information pieces. You can also make them sturdier by covering the paper with transparent tape prior to cutting the pieces out.
3. For more ideas on how to use the MatchCards, and for keeping a notebook for review, see the Instructor's Guide.
4. The complete Technology Unit Study provides the student worksheets, answer key, and teaching activities for this and 5 other objectives. See the website for more information.