

Using Computers Safely

Be a Power Reader

One-Sentence Summaries Summarizing is a key strategy for checking your understanding of new material. As you finish reading each paragraph, write one sentence that relates the key information in your own words. This can be difficult because it forces you to identify the main idea from supporting details. When you are finished, you will have an excellent main idea summary.

Getting Comfortable

How do your eyes feel after you've spent two or three hours looking at a computer screen? Do they feel scratchy? Do they burn and water? Have you ever gotten a stiff back from sitting at the computer for a long time? What about your hands and wrists? Do they ever tingle or ache? Even if you don't have these problems now, bad computer habits can increase the chances you will have problems when you are older.

This is a situation in which ergonomics can be useful. **Ergonomics** is the scientific study of how people can use things (such as computer equipment) in the most efficient and safe way. Let's look at some of the ways that ergonomics can help computer users.

Sitting Right

Sammie often waits to the last minute to write school reports. So, she has to spend many hours at the computer to get them done. She doesn't get up and walk around or rest her eyes. She is in such a hurry that she works as hard as she can, sometimes for five or six hours at a stretch. To make matters worse, she uses a folding chair while sitting at the computer. When she's done, she can hardly stand up straight and her eyes burn.

There are a number of things Sammie can do to avoid these problems. You may find these tips helpful, too.

- It is best to not use a computer for more than an hour or two at a time. Plan ahead so that you're not caught in a big, last-minute rush.
- If you must work for a long period, get up and walk around every half hour. Bend your knees and stretch your arms above your head. Focus on things that are at a distance. This will give your eyes a rest.
- Sit up straight and hold your head erect.
- Your elbows should be kept close to your body and bent at a 90-degree angle.
- A desk chair is much more comfortable than a folding chair or dining room chair.



Proper Seating Position

Desk chairs provide solid support for your back. They usually can be adjusted in several ways. Before you start working, make certain the chair is adjusted for you. Adjust the height so that your feet are flat on the floor. Your knees should be bent as shown in the picture. If necessary, adjust the seatback so that it cradles your back.

Those Burning Eyes



When you look at a monitor for too long a time, you may get eye strain. Try these ideas to avoid eye strain:

- Make certain that you are seated directly in front of the monitor.
- Keep your face about two feet away from the screen.
- The topmost line of the screen should not be higher than your eyes. You should be looking slightly down at the screen.
- Avoid staring at the screen for long periods of time. Every fifteen or twenty minutes, focus on something at a distance.
- Remember to blink. Studies have shown that when people use computers, they sometimes forget to blink their eyes. This makes their eyes dry and scratchy feeling.

Keyboarding and Mousing Around

It is surprising how many people have pain from using a keyboard or mouse. These problems are more common among adults. However, while you might not have problems now, bad habits can lead to serious results when you're older. So, here are some tips for avoiding injury:

- Position the keyboard and the mouse so that you do not have to reach to use them. They should be close to your body.

- Do not bend your wrists upward when using the keyboard. Your wrists should be kept straight while you are keying and using the mouse. If necessary use a wrist rest to properly position your hands.
- Don't rest your wrists or elbows on the desk or table while you are using the keyboard.

The keyboard that most of us use is taken from a 100-year-old design. It was never meant to be used for hours and hours at a time. This keyboard forces your hands to adjust to rows of parallel keys. This can lead to **repetitive stress injury (RSI)**. Repetitive stress injury can occur when you perform the same action over and over, without taking a break.



Keep your wrists straight while using the keyboard.

Carpal tunnel syndrome is probably the best known type of repetitive stress injury. There is a special channel, called the carpal tunnel, that passes through your wrist. This tunnel can become swollen and place pressure on a nearby nerve. The pressure can cause pain, tingling, and numbness in your hand. Taking frequent breaks and following the tips listed above can help.

Ergonomic Keyboards

Some people still have problems with repetitive stress injury, even when following the tips we've talked about. To help them, manufacturers have designed special

ergonomic keyboards. There are many different types of ergonomic keyboards.

These keyboards help keep the hands and wrists from being bent into abnormal positions. Some of them can be adjusted so that the angle of the keys matches the angle of the wrists. Many provide built-in wrist rests. If you are interested in getting an ergonomic keyboard, you will want to try it out before buying. Everybody has a slightly different way of using a keyboard. It is important that the keyboard is well-suited to you.



This ergonomic keyboard lets you adjust each side separately.

Online Safety

Bin enjoys going on the Internet and talking with other people. He is interested in collecting basketball player cards. He often goes to a Web site where you can buy and sell cards. This Web site also has a **chat room**. People go to the chat room to “talk” (write messages back and forth). They enjoy sharing their passion for basketball cards with other collectors.

But Bin also knows that when you visit a chat room, you must be careful. You usually don’t personally know the other people with whom you are chatting. It is easy for someone to claim to be someone he or she is not. Here are some rules Bin has learned. You should always follow them when you are online.

- Never give any information that will identify you. Don’t tell anyone your name, home address, or telephone number. If you have a fairly common first name, you may wish to use it, or you can use a pseudonym (a pretend name).
- Never arrange to actually meet someone you’ve met online unless you have the permission of your parents or another trusted adult.
- Never respond to messages that are threatening, use bad language, or are obscene. If someone makes you feel uncomfortable, do not chat with him or her.
- Remember that you never know exactly who you’re talking with (unless, of course, it’s somebody you know in real life). A fifty-year-old man can pretend to be a fourteen-year-old girl.
- Many things you read online may not be true. Internet rumors are passed from one person to another. Some people like to make up rumors because they think it is fun. Be smart: if you think something’s false, ignore it.
- If you come across something online that makes you feel uncomfortable, tell your parents or another trusted adult.
- The number one rule: Your own judgment is your best protection.



Review Questions

1. List two ways of avoiding eye strain when using computer monitors for a long period of time.
2. Is it a good idea to sit with your legs crossed when you are at the computer? Why or why not?
3. Why is using a wrist rest a good idea when using a keyboard?
4. How can ergonomic keyboards help prevent wrist injuries?
5. List at least three rules to follow when chatting with people online.



What Do You Think?

1. Write a short report listing at least three ways that your computer lab could be changed to make using the computers more comfortable and reduce the chances of injuries.
2. Do you think the science of ergonomics could be applied to other tasks you perform, such as carrying a backpack or washing dishes? How might this be done?
3. Can you think of any additional ways of being safe on the Internet? Share your ideas with your classmates.

Glossary

carpal tunnel syndrome A form of repetitive stress injury. The tunnel passing through the wrist becomes swollen, causing pressure on a nearby nerve. It can lead to pain, tingling, and numbness in the hands and wrists.

chat room A location on the Internet or other online community where people use their keyboards to send messages back and forth.

ergonomics The scientific study of how people can use things (such as computer equipment) efficiently and safely.

repetitive stress injury (RSI) Damage caused by performing the same action (such as pressing keys on a keyboard) repeatedly for long periods of time.