



Lesson 2

Input and Output Devices



In this lesson you will learn:

About input and output devices

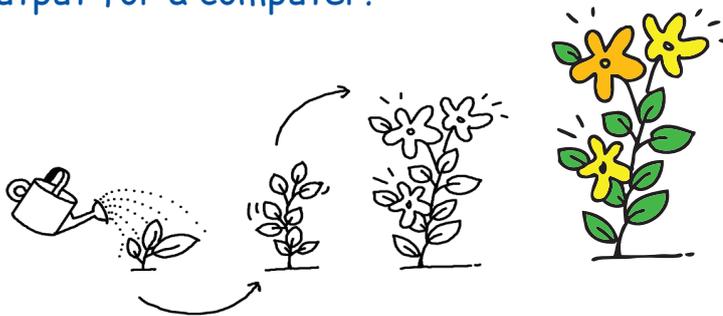
Some examples of input and output devices



Jyoti [holding a Marigold flower]: Moz, This flower from my garden is for you.

Tejas [holding a printout of a painting]: Moz, This painting from the computer is for you.

Moz: Thanks. The plant takes in the water and gives out flowers. Taking in is called "Input". Giving out is called "Output". Water is the input and flowers are the output for the plant. Can you give an example of input and output for a computer?



Tejas: When I draw using a mouse, it is an input to the computer. When the computer gives the printout, it is the output.

Moz: Correct. What did you use to give the command to print?

Tejas: The mouse. I clicked on the Print icon.

Moz: The command given using the mouse is input. So mouse is an input device.

Input devices allow us to send information to the computer. Input is usually given by clicking the mouse or typing on the keyboard.

Moz: From which device did you get the output?

Jyoti: Printer! So printer must be the output device.



Output devices allow us to receive information from the computer. Output may be printouts from the printer, sounds on the speaker, or images on the monitor.

Tejas: Whatever we type using the keyboard, appears on the monitor. So the keyboard is an input device and the monitor is the output device.

Moz: Right, the commands you type are the input and what you see on the monitor is the output.



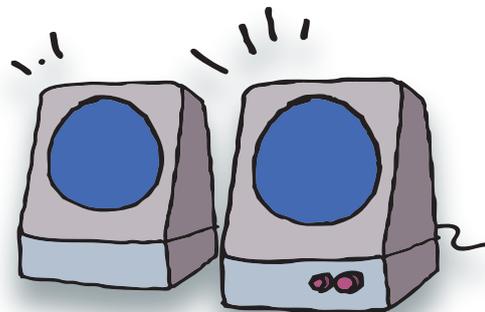
Jyoti: When we paint using the computer, the painting can be seen on the monitor. So the Paint actions that we do using the mouse are input. The painting shown on the monitor is the output.

Moz: Yes. The mouse pointer, words, numbers, painting, and everything that is seen on the monitor is output from the computer.

Moz [plays a song on the computer]: Now tell me what is the input and output?

Tejas: The song that we hear is the output.

Jyoti: We hear the songs from the speakers. So speakers are the output device.



Moz: Correct. What about the input?

Jyoti: You clicked on the song icon using the mouse. This clicking is the input.

Tejas: So the mouse is the input device.

Jyoti: During holidays, I saw a movie on the computer. The picture was on the monitor and the sound was through the speakers. That means, both the monitor and the speakers were giving the output at the same time!



Moz: You are right.

Moz disconnects the keyboard and asks Tejas to type his name on the keyboard.

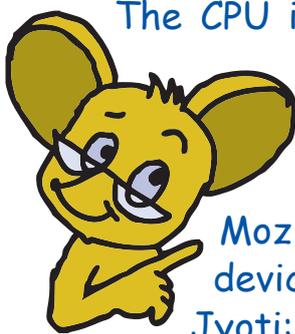
Tejas: I don't see my name on the monitor. The CPU is not able to receive the input as the keyboard is disconnected. So there is no output on the monitor.

Moz: Correct. Suppose input or output is not working what should we do?

Tejas: Check if all the devices are connected to CPU or not!

Moz: Good. So now you know that:

- Keyboard and Mouse are input devices.
- Monitor, Speakers and Printer are output devices.
- Any device has to be connected to the CPU to receive or send information.
- CPU controls all the connected input and output devices. The CPU is neither an input nor an output device. It only processes the information given by the input devices and sends the result to the output devices

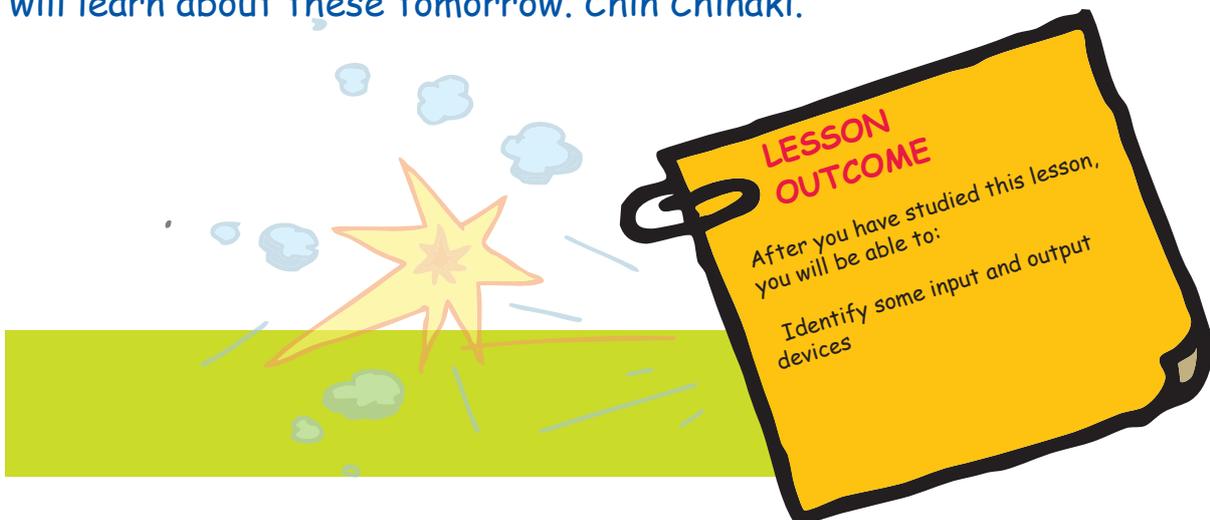


The CPU is neither an input nor an output device. It only processes the information given by the input devices and sends the result to the output devices

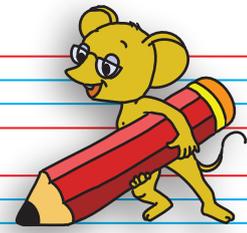
Moz: What are the dos and don'ts when we use these devices?

Jyoti: Sit straight. Keep a distance from monitor.

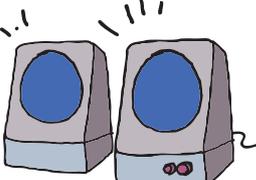
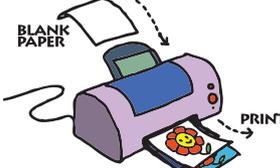
Moz: Yes, and there are some more exercises that we should do. We will learn about these tomorrow. Chin Chinaki.



WORKSHEETS 2.2



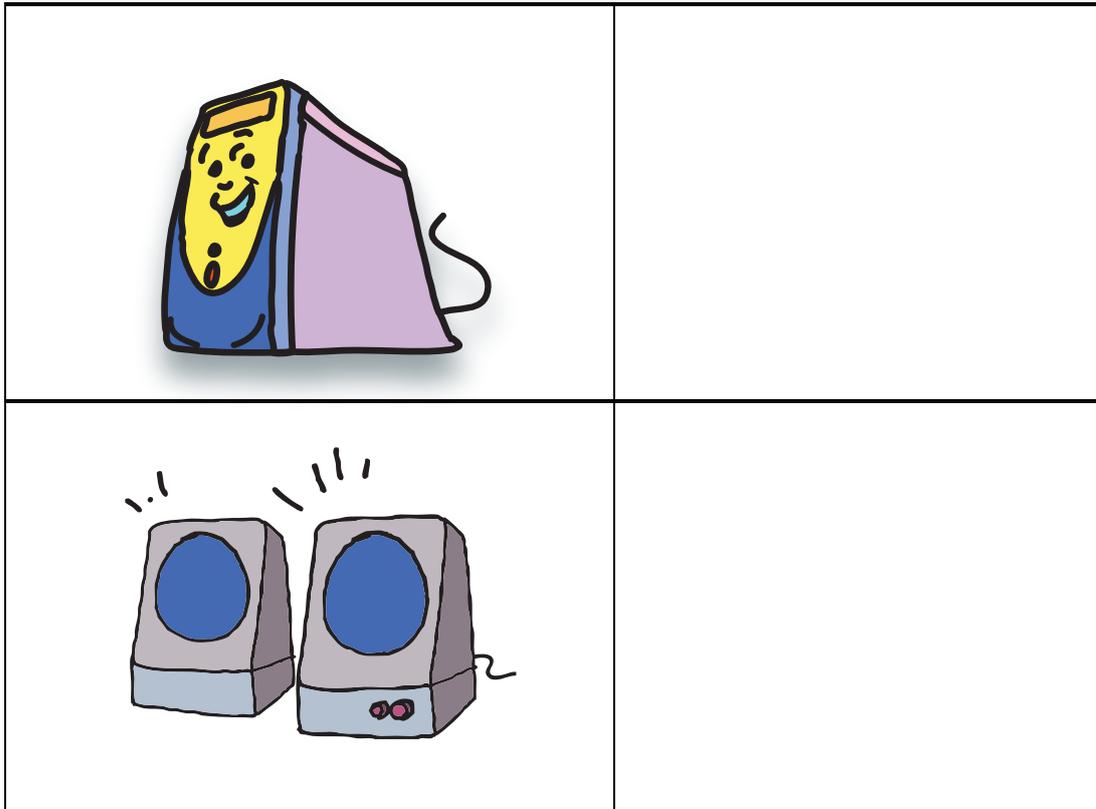
1. Match the computer parts:

	SPEAKERS
	PRINTER
	WEBCAM
	CD

2. Name the following parts :

WORKSHEET 2.2



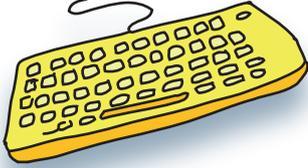
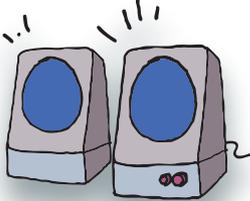
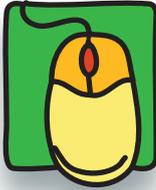
3. Babu wants to attach all the additional parts of the computer to the basic parts of the computer but doesn't know the way can you guide him? [Draw a picture and label additional parts]

4. Answer True or False:

- Your eyes are input devices of your body. True / False.
- Petrol is an output for a vehicle running on the road. True / False.
- The computer uses an output device to show us something. True / False
- We use input devices to tell the computer what to do. True / False

WORKSHEET 2.2

5. Sort which are the input and output devices of the computer and write their names

	
(Input/ Output Device)	(Input/ Output Device)
	
(Input/ Output Device)	(Input/ Output Device)
	
(Input/ Output Device)	(Input/ Output Device)

6. The following are names of output devices. Fill in the blanks to identify them.

a. M _ _ n _ _ _ o _ _

b. _ _ r _ _ n _ _ _ r

c. M _ _ us _ _

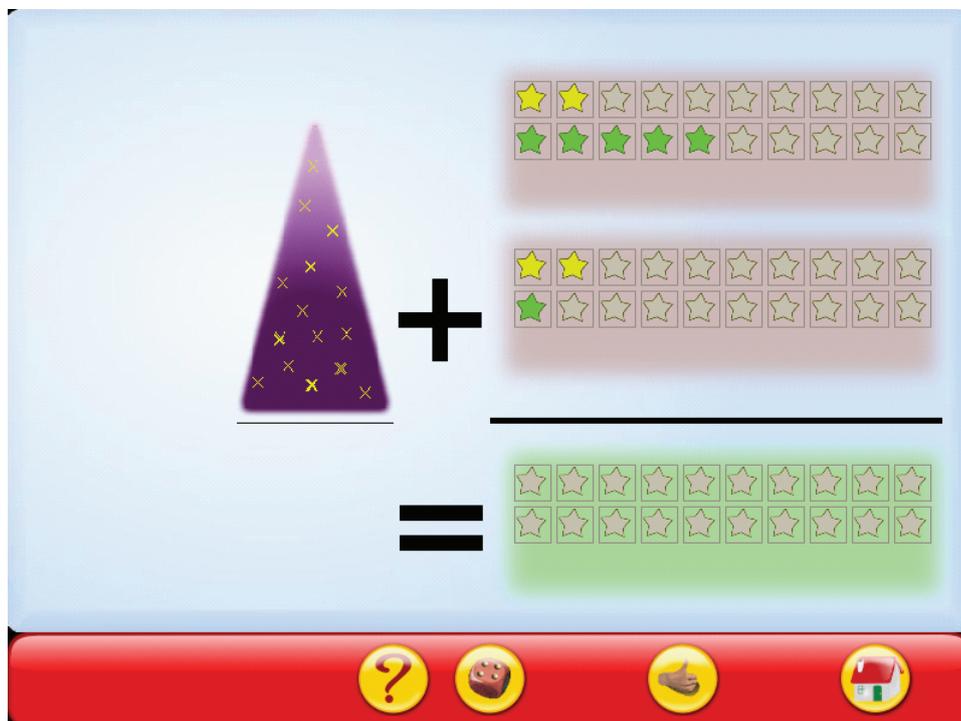
d. S _ _ e _ _ k _ _ r



ACTIVITY 2.1

[Some activities to be done in the class by groups of students]

1. Group activity: in a television, remote control or the buttons on the TV are input devices; the monitor and speakers are output devices
2. Identify your body parts that can be compared to computer parts. For example, just as your brain thinks and allows you to do different activities, CPU is the brain on computer and connects the input and output devices.
3. Play the magician hat game and identify the input and output in it. Find this game in GCompris under math activities



Explore!

1. Observe a house/building being constructed and identify the input and output.
 - Observe a tailor stitching clothes and identify the input and output.
 - What is the body part that can be both input and output device?

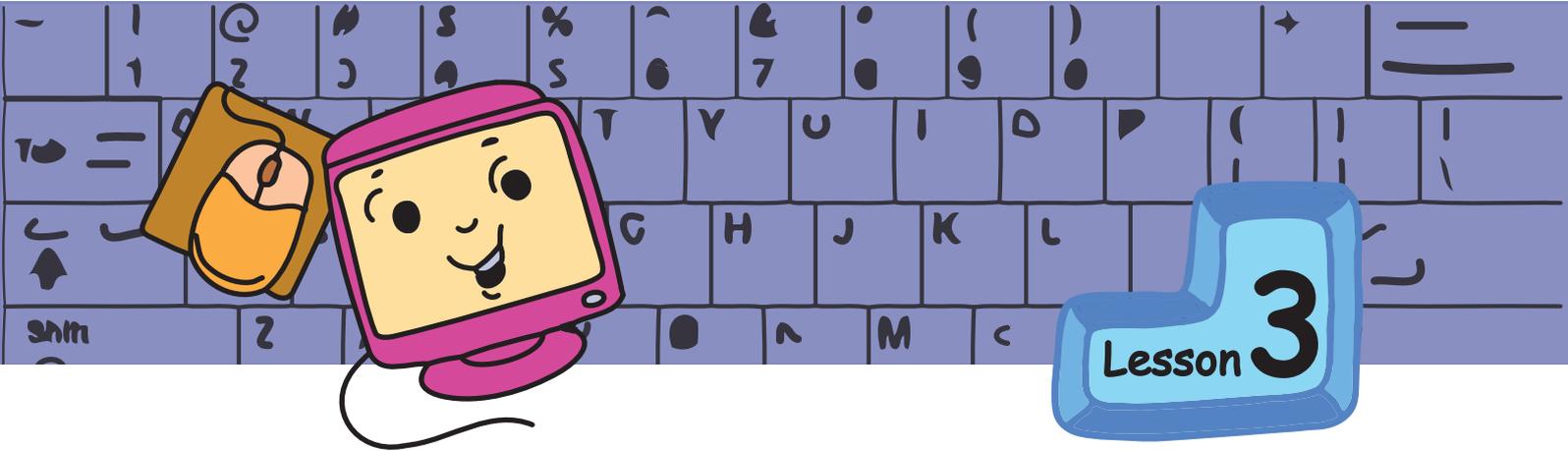
Teacher's Corner 2.2

1. Start the class by telling the students a story of how a fruit tree grows from a seed. Ask them what were the actions done to get the fruits. Water, sunshine are the inputs and the fruit is the output. Give more examples to clarify the concept of input and output. For instance, a vehicle driving on road requires various inputs such as petrol, steering wheel. More examples can be given from other subjects as well.
2. Revise the various computer parts and ask them to identify what is the input and output device. Do not give the answer. Ask them more questions so that they can discover the right answer for themselves.
3. Ask the class what would happen if the computer system did not have a monitor, a keyboard, a mouse, a speaker.
4. Play a video. Turn off the monitor. Can you still hear the sound? What output is missing? Turn the monitor on again and detach the speakers. Can you see the video playing? Can you hear the sound? If there are built-in speakers, the students may hear the sound even if the speakers are unplugged. Show them where the built-in speakers are located.
5. Ask what are the minimum output devices and input devices that we need to interact with the computer.

References:

<http://www.kidsdomain.com/brain/computer/>

<http://www.howstuffworks.com>



Remain Healthy while using Computers

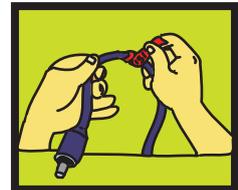


In this lesson you will learn:
Precautions to be observed while using a computer
Posture while using computers
Exercises for body fitness

We know that computers can be both fun and helpful. Children can use the computers for a maximum of one hour per day in two sessions with maximum of half an hour in each session. This usage should preferably be for educational purposes. Good postures, precautions, and exercises are the key to enjoying many activities and it is the same with computers.

Jyoti: Moz, the power cord of the computer is torn.
Moz puts an insulation tape around the tear.

Moz: A torn power cord can give an electric shock and cause injury. You should be careful with the power cords and the power sockets.



Safety with power cords and sockets

- Do not touch power cords.
- Make sure that the power cords are well insulated. If you see any tear, report to teacher.
- Do not put fingers or objects in the power socket.

Safety with the computer

- Do not put any objects in any outlet meant for external devices.

Tejas: Can we use liquids to clean a computer and its parts?

Moz: A computer and its parts should be cleaned with a dry soft cloth only.

- Do not use any liquids to clean the computer.
Use a dry soft cloth only.



Posture and Exercises



Moz: What happens if we do not observe good posture?

Jyoti: We get body aches if we do not sit straight.

Tejas: Eyes pain if we use the computer without a break and when we sit very near to the monitor.

Moz: Correct.

Use the computer only if necessary and remember the maximum limit of half an hour in each session. To avoid pains and aches in the eyes, neck, wrists, spine and hands, practice good posture while using the computer. To keep your body fit do some exercises.

Posture to be observed while using the computer and its parts.

f) Maintain good posture when working. Sit all the way back in the chair against the backrest. Keep your knees equal to, or lower, than your hips with your feet supported.

g) Make sure your entire body faces the computer screen and keyboard.

h) Make sure you are not looking up or down at the monitor. Keep your neck as straight as possible. Keep your eyes at least a foot from the monitor.

i) After 10 min. of using the computer, move your eyes and neck. Stretch your hands and fingers if you are using the keyboard or mouse.

j) Keep your elbows slightly away from you body, with your wrists in a straight position. Avoid overreaching. Keep the mouse and keyboard within close reach.

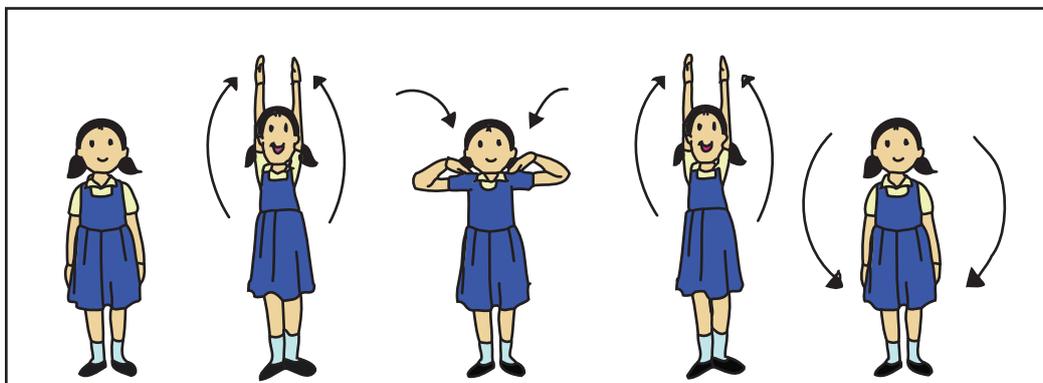
k) Use good typing technique. Float your arms above the keyboard and keep your wrist straight when keying.

l) Keep your wrists straight and hands relaxed when using the mouse. Don't hold the mouse with a tight grip or extend fingers above the activation buttons. Avoid moving the mouse with your thumb or wrist.

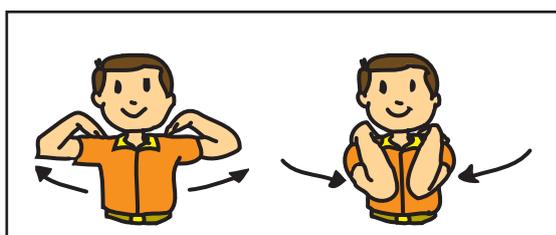
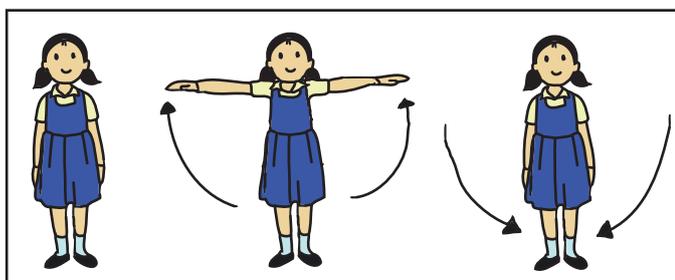


Exercises to keep your body fit

1 Keep your ears straight over your shoulders. Raise both arms straight up along side your ears. Remember to keep your ears aligned. Bend forearms toward shoulders to touch your shoulder blades. Do 10 repetitions with both arms, then alternately for each arm singularly.

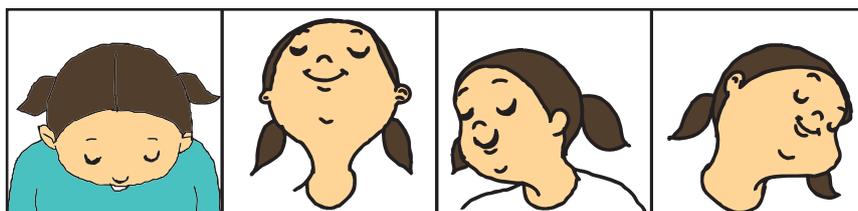


2 Keep your ears straight over your shoulders. Raise both arms out to sides at shoulder length. Hold for a slow count of ten. Slowly lower arms to sides, counting ten as you lower. Slowly raise arms back to shoulder height, counting to ten as you raise arms.



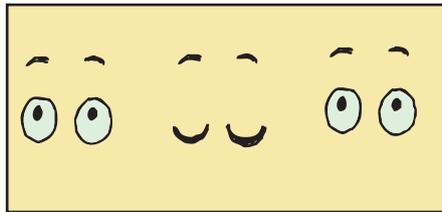
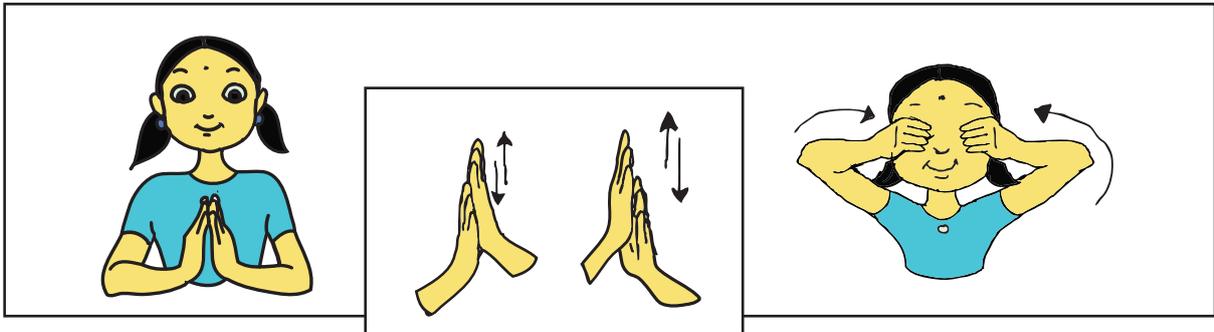
3 Be a penguin. While you wait for computer or a particular program to start, place elbows at your side, and touch your shoulders with your hands. Keeping your hands on your shoulders, and your ears aligned, raise both elbows (count one, two) and lower back to your waist (count one, two). Do as many times as your wait allows.

4. Tilt (stretch) your head in all four directions over your shoulders (forward, back, left, right), and gently massage your neck.



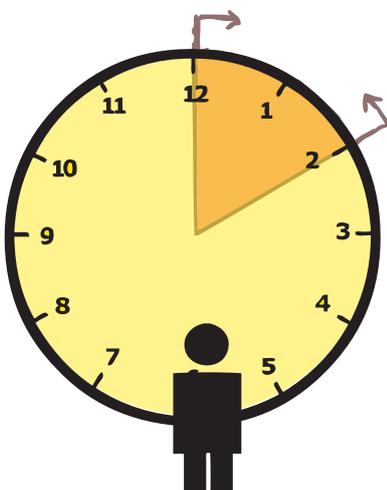
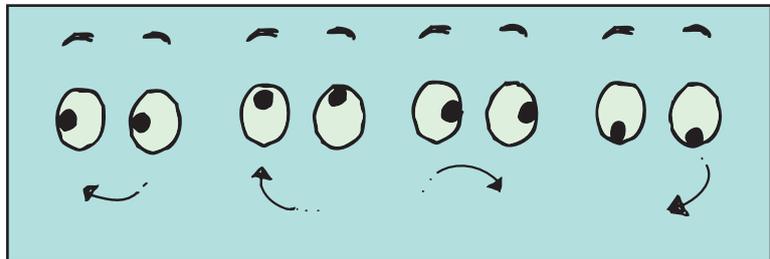
Exercise for the Eyes

1. Sit comfortably on a chair. Rub your hands together until they feel warm. Close your eyes and cover them lightly with your cupped palms. Avoid applying pressure on your eyeballs. Place your palms so that the nose remains uncovered. Make sure that no light rays enter the eyes. Take deep breaths slowly and evenly, while thinking of some happy incident. Repeat the palming for 3 minutes or more.



2. Close your eyes tightly for 3-5 seconds then open them for 3-5 seconds. Repeat this 7 or 8 times.

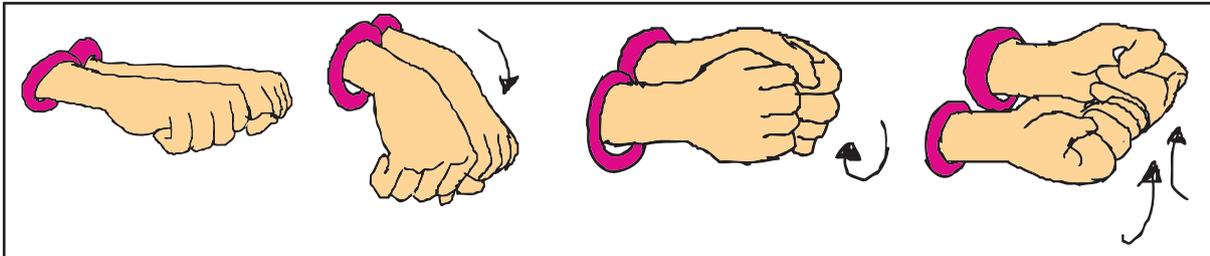
3. Sit and relax. Roll your eyes clockwise, then counter-clockwise. Repeat 5 times and blink in between each time.



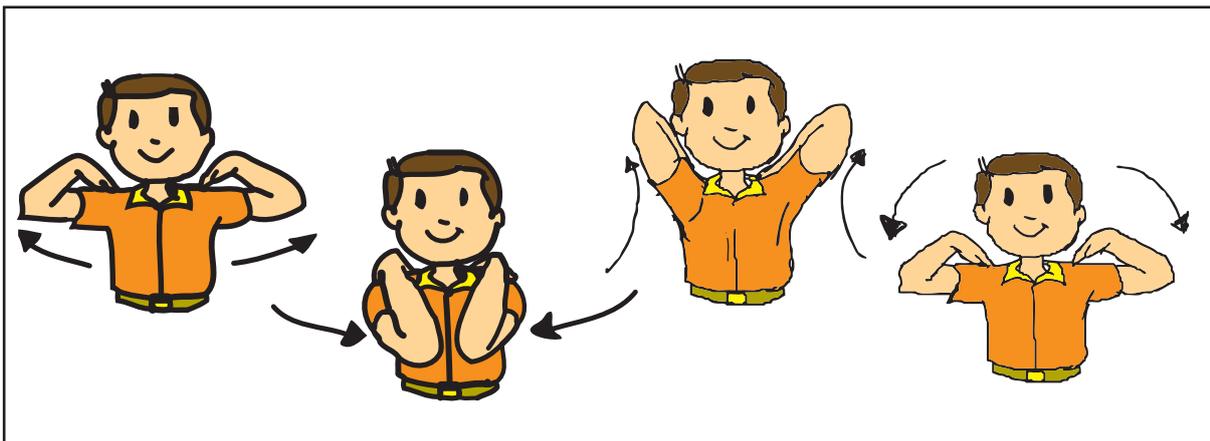
4. Imagine that you are standing in front of a really big clock. Look at the middle of the clock. Then look at any hour mark, without turning your head. Look back at the center. Then look at another hour mark. Do this 10 times. You can also do this exercise with your eyes closed.

Exercise for the Hands

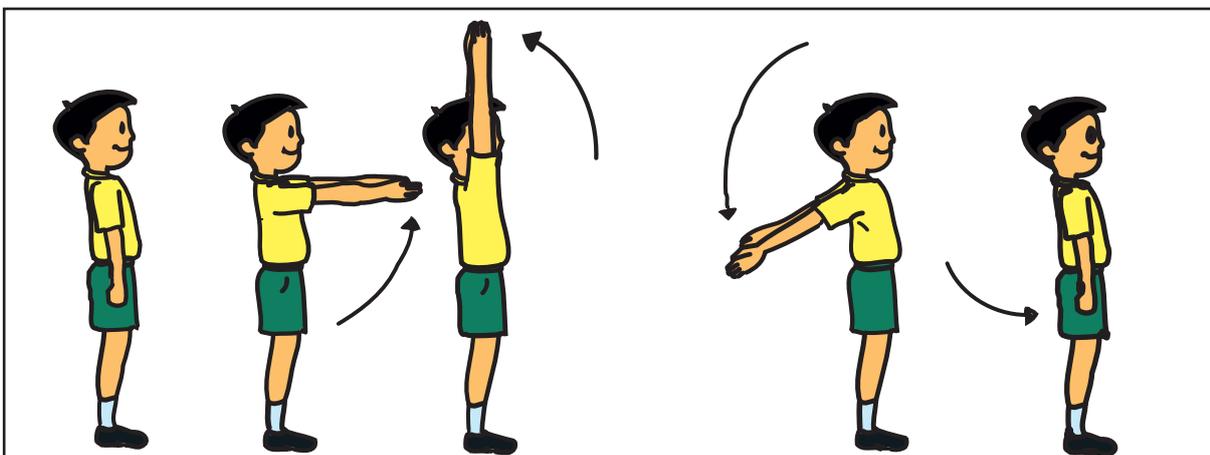
1. Wrist rotation: Stretch both arms straight to the front with closed fists. Rotate both the fists together ten times in the clockwise direction and ten times in the anticlockwise direction. Do ensure that only your fists are rotating and the rest of your arms are not moving.



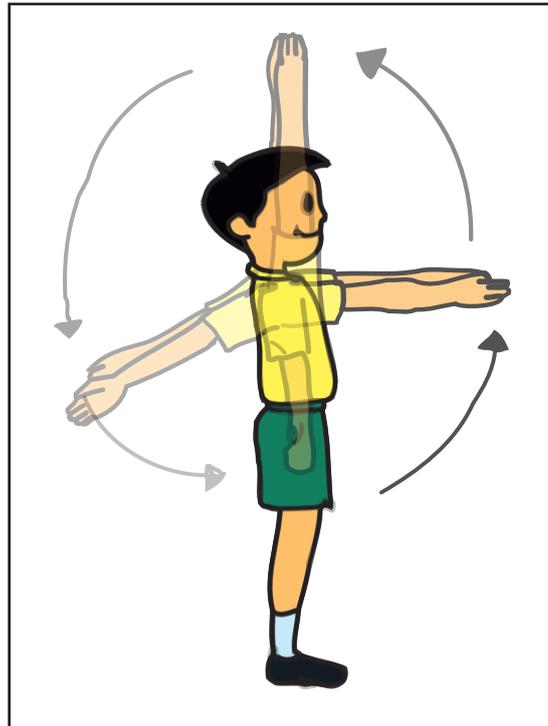
2. Elbow rotation: Bend your hands towards the front and hold your shoulders with your palms. Now, rotate your elbows ten times in the clockwise direction and ten times in the anticlockwise direction.



3. Whole hands, small circles: Stretch both hands to the sides holding your palms straight up. Now, make small circles with both palms ten times in the clockwise direction and ten times in the anticlockwise direction.



4. Whole hands, big circles: Stretch your hands to the sides. Make big circles (as big as possible) with both the hands ten times in the clockwise and ten times in the anticlockwise direction..



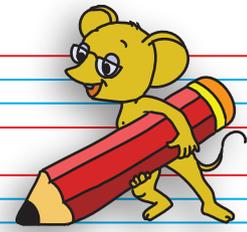
Tejas and Jyoti: We enjoyed doing the exercises. We have learned some of these exercises in the yoga class.



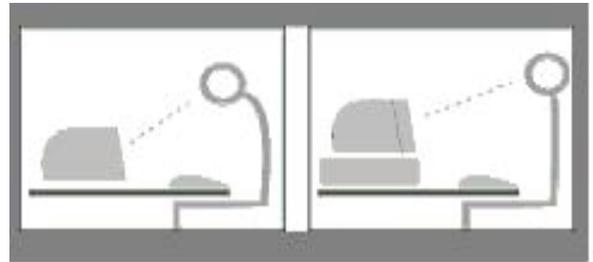
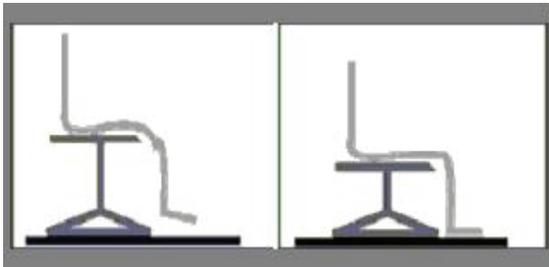
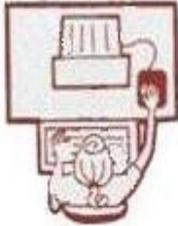
Moz: Good. Observe the posture and do the exercises regularly to keep your body fit and healthy. It is time for you to go home. Meet you tomorrow. Chin Chinaki.



WORKSHEET 2.3



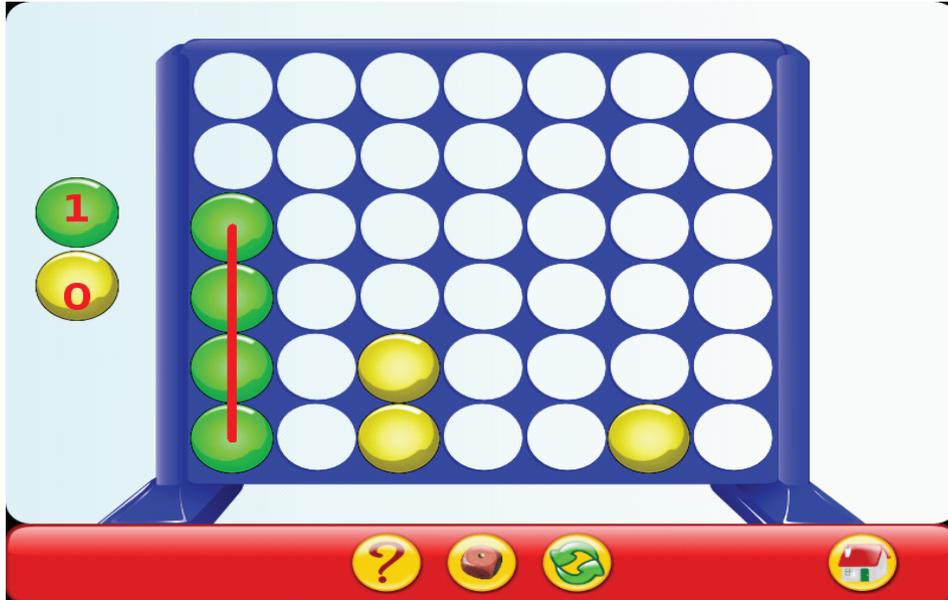
1. Tick the correct postures:





ACTIVITY 3.1

1. Using correct posture for using keyboard, play the following game (screen shot reqd) Connect: Using arrow keys, arrange four coins in a row. To play this game, follow the following steps: Applications --> Games --> Educational suite Gcompris --> Strategy games



2. Using correct manner of using mouse, play the following game Balance the scales: Drag and drop masses to balance the scales. Add the weights to find out what is the total weight of the item in the other scale. To play this game, follow the following steps: Applications --> Games --> Educational suite Gcompris --> 123 (Mathematics)





ACTIVITY 3.1

3. Keeping appropriate distance from the monitor, play the following game. Throw the clowns before they fall and hit the balloons with them. To play this game, follow the following steps: Applications --> Games --> Circus Linux



4. Divide the class in groups of three and let each group practice the exercises taught in the lesson. After 20 minutes, the teacher asks one student from each group to demonstrate one exercise.

5. Play passing the parcel. The student who holds the parcel when music stops should demonstrate an exercise taught in the lesson. You can use the duster as the parcel and create music with the desk as the tabla!



Explore!

1. Find out what are the different health problems caused due to incorrect posture during computer use.

Teacher's Corner 2.3

1. Begin the lesson by revising the dos and don'ts the students learned in class I. Ask questions as to why it is important to follow certain rules while using computer.
2. Introduce the new lesson, by saying that as they continue to use computers they should also learn more rules so that they can remain healthy and safe. Tell the students that anything in excess is not ok. Even if they like to use computer, they should not use it for too long. Discuss the different purposes for which students want to use computers.
3. Emphasize that it is important to ensure safety while using electronic devices. Explain how to handle power cords and be careful while using computers. Show them illustrations in the lesson to identify the correct and incorrect ways of handling computers.
4. Play out a skit where the actors selected amongst the students bring out right and wrong usage of computer
5. Mention the importance of exercises to remain healthy. Students may have already learnt some exercises. Ask them to show some of these exercises. Now highlight the importance of exercises for correct posture, eyes and hands. Explain why it is important to do these exercises if you are a computer user. Demonstrate the exercises in the class with the help of pictures in the lesson. You can even take them out of the classroom to the school ground and practice this exercise!
6. Summarize the lesson and emphasize that it is important to continue practicing this exercise as long as they continue to use computers

References:

<http://www.kidsdomain.com/brain/computer/>

<http://www.howstuffworks.com>