4 Programming with Scratch

After this lesson, students will be able to:

- » Define Scratch as a block programming language.
- » Open Scratch.
- » Identify the components of the Scratch window.
- » Define and identify a sprite.
- » Create a new sprite.
- » Change the costume.
- » Make a sprite walk.
- » Make a sprite go back and forth.
- » Add a background.
- » Add sounds from the Sound block.
- » Use the Forever block.

WARM UP

Draw any two cartoon characters which you would like to paint and animate on the computer using Scratch.

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Ans. Do it yourself.

CHAPTER NOTES

» Scratch is a fun-filled computer language developed at MIT. It helps in creating computer games easily.

» In Scratch, Sprites (objects) are manipulated on the stage (background) using various Scripts (small program segments).

» Each sprite has its own set of scripts to control its behaviour and how it interacts with other sprites and events.

» Scratch helps to create a program by simply dragging blocks in the Script Area.

» We can create a new sprite using various methods - Choosing from the library, painting a new sprite, uploading sprite from a file,creating a new sprite from the camera.

» Blocks in Scratch are puzzle-piece shapes that are used to create code. The blocks connect to each other vertically like a jigsaw puzzle. Each block has its own shape and a specially shaped slot for it to be inserted into.

» A series of connected blocks is called a script.

» Blocks in Scratch are divided into 10 categories (palettes): Motion, Looks, Sound, Pen, Data, Events, Control, Sensing, Operators, and More Blocks.

» Blocks are colour-coded to help you find related blocks easily.

» Sprites can be moved on the stage with the help of Costumes.

» A costume is one out of many "frames" or alternative appearances of a sprite. Sprites can change their looks to any of their costumes. They can be named, edited, created, and deleted, but every sprite must have at least one costume.

» Sound Blocks is one of the ten categories of Scratch blocks. They are color-coded pink/magenta, and are used to control sounds.

» The Forever If () block is a Control block. The block continuously checks its condition. If the condition is true, the code held inside the block would run, and then the script continues, but if the condition is false, nothing would happen until it becomes true again. The block continuously runs in a loop; in fact, this block works just like the If () block placed inside the Forever block. After being removed, this block is replaced with its workaround.

DEMONSTRATION

Show how to do the following:

» Open Scratch.
» Create a new sprite - from the library, from the camera, from a file, or by painting it.
» Use the Looks and Motion blocks.
» Change the costume.
» Make a sprite walk.
» Make a sprite go back and forth.
» Add a background.
» Add sounds from the Sound block.
» Use the Forever block.

LAB ACTIVITIES

» Create a dialogue scene between any two sprites. Choose an appropriate background. Here is an example.
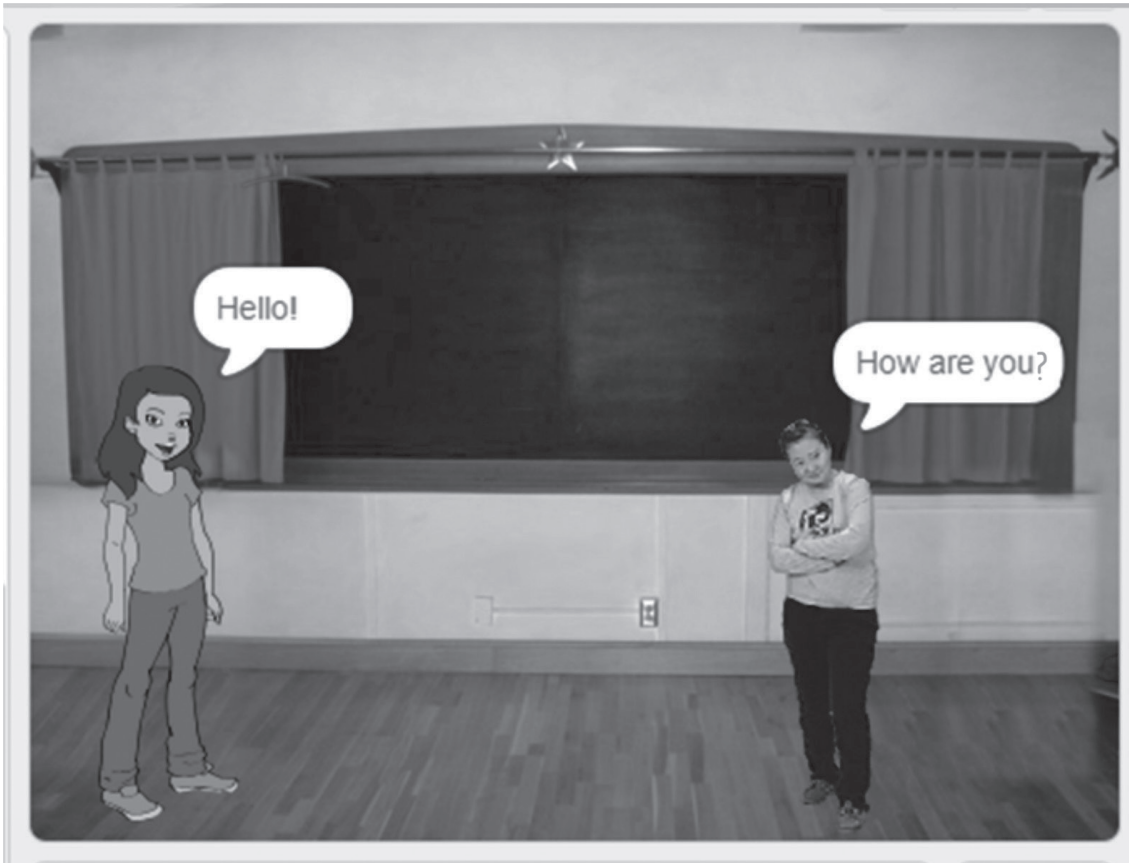
ASSESSMENT

Test the students on the following:

1. Different ways of creating a new sprite.
2. Making a sprite go back and forth.
3. Using the forever block.