Programming with LOGO

Learning Outcomes

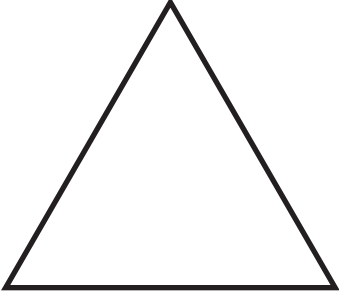**After this lesson, students will be able to:**

- » Recall how to start LOGO.
- » Recall the components of the LOGO interface.
- » Recall the FD, BK, RT and LT commands (make square).
- » Recall the PR command (number, word, sentence, print first).
- » Perform calculations (sum, difference, product, quotient).
- » Use logical operators.
- » Use the Repeat command.
- » Create, save, load and run a procedure.
- » Edit and erase procedures.

WARM UP

Recall the LOGO commands to make the following figures.

Ans.

	Commands	
	FD 40	FD 40
	RT 90	RT 90
	FD 40	FD 40
	RT 90	RT 90

	Commands
	RT 120 RT 120
	FD 60 FD 60
	RT 120
	FD 60

CHAPTER NOTES

» The PRINT or PR command is used to display an output on the screen. For example: PRINT "HELLO.

» Use the command PRINT FIRST to print the first character of a word or the first word of a sentence.

» Generally, we use LOGO language for drawing figures. However, it can also be used for doing mathematical calculations and logical operations.

» The logical operations include true or false if we compare two values.

» You may do calculations while using LOGO primitives for drawing shapes.

» While drawing a figure in LOGO, we sometimes repeat some commands.

» When the turtle completes a full circle while rotating and comes back to the normal position, we say that it has turned 360 degrees (360°).

» For drawing a polygon, we divide the number of sides by 360 to decide the turn angle of the turtle.

» Procedures are how you do things, the steps you take to make something happen.

» We can create a procedure and save it for future. Whenever we want to use a particular LOGO procedure again, we can fetch it from the memory of the computer and use it or modify it.

» A LOGO procedure is therefore defined as a set of instructions given in proper order to draw something or carry out a calculation, collectively saved under a name.

» A LOGO procedure is divided into three main parts: Title, Body and End.

   o Title is the first part of the procedure. It starts with a keyword – TO, followed by the procedure name. When you press the Enter key after this, an Input Box appears.

   o Body is the main part of the procedure and it contains the set of commands to draw the figure. The Body commands are written in the Input Box.

   o END is the last part of the procedure and it ends the procedure with the keyword – END.

» The procedure name should always start with a letter. It may be followed by numbers and other characters. For example, SQUARE 1 is a valid name but 1SQUARE is invalid.

» Spaces are not allowed in the procedure name. For example, SQUARE 1 is a wrong procedure name.

» Never use a LOGO primitive as a procedure name. For example, RIGHT is an incorrect procedure name in LOGO because RIGHT is a LOGO command.

» You cannot use mathematical operators in the procedure name. For example: SQUARE+ is not a valid procedure name.

» To save a procedure in MSW LOGO, select the File tab and then select the Save option.

» Loading a procedure means opening a saved file at a later time. In this process, the procedure saved in the hard disk of the

computer is moved to primary memory (RAM). That is why it is called Loading.

DEMONSTRATION

Show how to do the following:
- » Open LOGO
- » Recall the FD, BK, RT and LT commands (make square)
- » Recall the PR command (number, word, sentence, print first)
- » Perform calculations (sum, difference, product, quotient)
- » Use logical operators
- » Use the Repeat command
- » Create, save, load, and run a procedure
- » Edit and erase procedures

LAB ACTIVITIES

- » Using LOGO, create the procedures:
  - o Make two squares
  - o Add, subtract, multiply and divide any two numbers
  - o Print 'Hello' on the screen
  - o Make a hexagon
- » Try making the following using the Repeat command.
  - o Square
  - o Rectangle
  - o Triangle
  - o Stairs

ASSESSMENT

Test the students on the following:

    (a) The commands used to make a square.

    (b) Use of logical operators.

    (c) Use of the Repeat command.