TRACKPAD

iPro Ver. 4.1

2

Teacher's Manual

Extended Support for Teachers

ORANGE
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Teacher's Time Table

Periods / Days	0	I	II	III	IV	BREAK	V	VI	VII	VIII
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
Saturday										

Development Milestones in a Child

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher identify and understand how children differ in different age groups.

Age
5 - 8 Years

Physical	• First permanent tooth erupts • Shows mature throwing and catching patterns • Writing is now smaller and more readable • Drawings are now more detailed, organised and have a sense of depth
Cognitive	• Attention continues to improve, becomes more selective and adaptable • Recall, scripted memory, and auto-biographical memory improves • Counts on and counts down, engaging in simple addition and subtraction • Thoughts are now more logical
Language	• Vocabulary reaches about 10,000 words • Vocabulary increases rapidly throughout middle childhood
Emotional/ Social	• Ability to predict and interpret emotional reactions of others enhances • Relies more on language to express empathy • Self-conscious emotions of pride and guilt are governed by personal responsibility • Attends to facial and situational cues in interpreting another's feelings • Peer interaction is now more prosocial, and physical aggression declines

"If you cannot do great things, do small things in a great way."

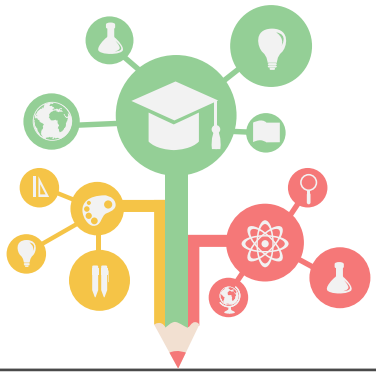
Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/ Social	• Self-esteem tends to rise • Peer groups emerge

Age 11 - 20 Years	
Physical	• If a girl, reaches peak of growth spurt • If a girl, motor performance gradually increases and then levels off • If a boy, reaches peak and then completes growth spurt • If a boy, motor performance increases dramatically
Cognitive	• Is now more self-conscious and self-focused • Becomes a better everyday planner and decision maker
Emotional/ Social	• May show increased gender stereotyping of attitudes and behaviour • May have a conventional moral orientation

Managing the children's learning needs according to their developmental milestones is the key to a successful teaching-learning transaction in the classroom.

"Family is the most important thing in the world."

Teaching Pedagogies



Pedagogy is often described as the approach to teaching. It is the study of teaching methods including the aims of education and the ways in which such goals can be achieved.

Lesson Plans

A lesson plan is the instructor's road map which specifies what students need to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

- Learning objectives
- Learning activities
- Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

Before the class

1. Identify the learning objectives.
2. Plan the lesson in an engaging and meaningful manner.
3. Plan to assess student's understanding.
4. Plan for a lesson closure.

During the class

Present the lesson plan.

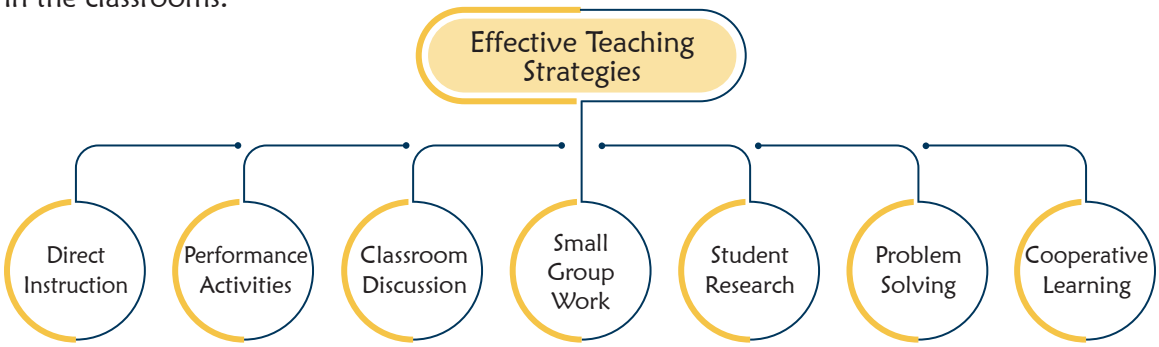
After the class

Reflect on what worked well and why. If needed, revise the lesson plan.

"Knowing yourself is the beginning of all wisdom."

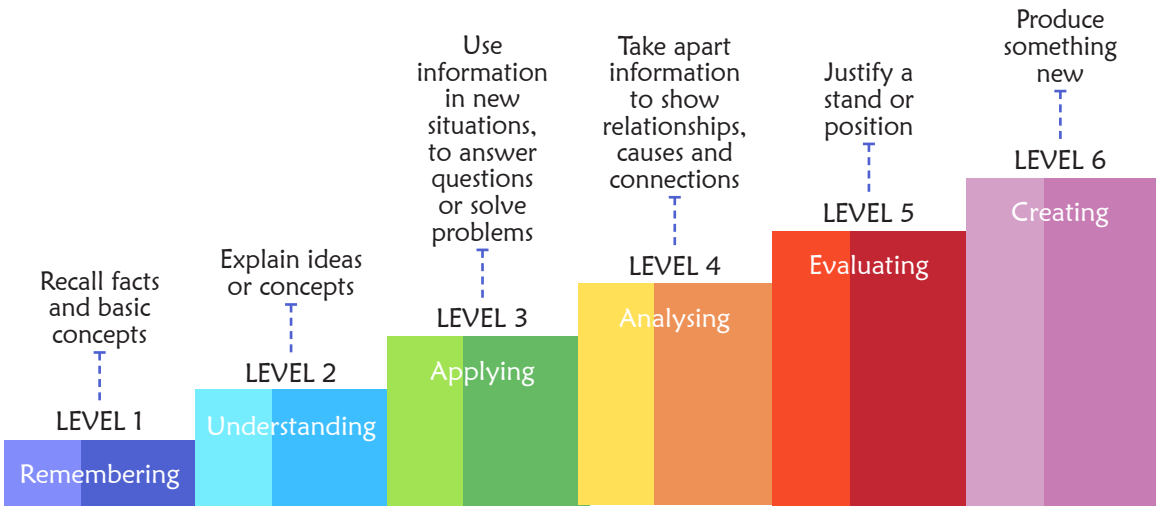
Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.



Bloom's Taxonomy

Bloom's Taxonomy was created by Dr Benjamin Bloom and several of his colleagues, to promote higher forms of thinking in education instead of rote learning. There are three domains of learning: cognitive (mental), affective (emotional), and psychomotor (physical). However, when we refer to Bloom's Taxonomy we speak of the cognitive domain. Bloom's Taxonomy is a list of cognitive skills that is used by teachers to determine the level of thinking their students have achieved. As a teacher, one should attempt to move students up the taxonomy as they progress in their knowledge.



Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation, and so on.

> "If you have no confidence in self, you are twice defeated in the race of life."

CLASS 2

LESSON PLAN

1 Computer—An Electronic Device

Teaching Objectives

Students will learn about

- Working of Machines
- Advantages of a Computer
- Disadvantages of a Computer
- Working of a Computer
- Teaching & Learning Using Computers
- Computer vs Human

Number of Periods	
Theory	Practical
3	0

Teaching Plan

While teaching this chapter, tell the students that a computer works according to the commands or instructions given by us.

Tell the students about the working of some machines like:

- **Juicer** – We put fruit pieces inside it, the juicer squashes the fruits and gives out fresh juice.
- **Washing machines** – We put dirty clothes inside it, the machines wash them and give out clean clothes.

Share with the students that in both these cases, the first step is input, the second step is process and the third step is output.

Tell the students that similarly the computer takes instructions (2, 3, +), adds them (2+3) and gives the result (5).

Share with the students that this cycle of working of machines is called Input-Process-Output cycle or IPO cycle.

Introduce the term 'Input' as giving instructions to the computer.

Tell the students that keyboard and mouse are used as input devices in a computer.

Introduce the term Process as action performed by computer on the given instructions.

Tell the students that the Central Processing Unit (CPU) is the processing device of a computer and is called the brain of the computer.

Introduce the term 'Output' as a result given by the computer after processing.

Tell the students that monitor and printer are used as output devices in a computer.

Explain to the students about advantages of a computer and also how they differ from humans.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What does IPO stand for?

Q. What is Input-Process-Output cycle?

Q. Define Input, Process and Output.

Q. Name two input and output devices.

Q. Which part of the computer is called brain of the computer?

Q. Why is the CPU called the brain of the computer?

Q. Discuss the advantages of a computer briefly.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 14 and 15 of the main course book as **One Touch Learn** and **Let's Do It**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on page 16 of the main course book to imbibe Problem Solving & Logical Reasoning skills. Help the students to solve these questions.

In Creative Assignment, activities like Hands On and **Fun in Lab** given on pages 16 and 17 of the main course book will enhance the ability of the students and serve as an Art Integration, Ethical & Moral Reasoning and Experiential Learning activity.

Suggested Activity

Show some more machines with input and output to the students and ask the students to arrange these in correct order of the IPO cycle.

2 Role of Computers

Teaching Objectives

Students will learn about

- Uses of a Computer
- Places Where Computers are Used
- Role of Computers in Education
- Impact of Computers on Our Daily Lives

Number of Periods	
Theory	Practical
3	0

Teaching Plan

While teaching this chapter, tell the students about machines in daily lives, like television, AC, ATM, washing machine, etc.

Share with the students the various uses of a computer covering drawing, painting, doing homework, doing sums, watching movies, listening to music, playing games, writing letters and stories, etc.

Share with the students the names of the places where computers are used and the reason why computers are used there like:

- **At home** – to play games, watch movies, listen to music, send e-mails, search information, etc.
- **In shops and restaurants** – to make bills, keep a record of items bought and sold, etc.
- **In offices** – to type and print documents.
- **In schools** – to make time tables and report cards, teach students, keep fee records, keep record of library books, etc.
- **At railway stations and airports** – to maintain train and flight timings, for reservation and cancellation of tickets.
- **In hospitals** – to maintain records of patients, to detect deseases, to prepare medical reports, etc.
- **In banks** – to maintain customer details, to withdraw and deposit money.

Let the students know how computers are used in the field of designing publishing, science labs, police stations and space research.

Make the students aware of role of computers in education.

Share with the students how computer has impacted our daily life.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Name a few things that a computer helps us do.

Q. Are computers used only in schools and at homes?

Q. Name two places other than home and school where computers are used.

Q. What does ATM stand for?

Q. State any two uses of computers at home, railway station and airport.

Q. State any two uses of computers in a school, bank, shop, office and hospital.

Q. What is the role of computers in education?

Q. Explain how computers impact our daily lives.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 23 to 25 of the main course book as **One Touch Learn** and **Let's Do It**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on pages 25 and 26 of the main course book to imbibe Problem Solving & Logical Reasoning skills. Help the students to solve these questions.

In Creative Assignment, activity like **Hands On** and **Fun in Lab** given on page 26 of the main course book will enhance the ability of the students and serve as a Creativity & Innovativeness and Experiential Learning activity.

Suggested Activity

Ask the students to discuss with their parents how computers are used for:

- Controlling movement of metro trains
- Launching satellites
- Weather forecasting
- Making robots
- Making animations
- Booking tickets for movies

3 Input and Output Devices

Teaching Objectives

Students will learn about

- Input Devices
- Storage Devices
- Output Devices

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that a computer is made up of many parts which are categorised as input devices, output devices and storage devices.

Introduce input devices as the parts that are used to give commands or instructions to the computer or tell the computer what to do.

Share with them pictures / models of some input devices like:

- **Keyboard** – It is used for typing text and numbers through keys.
- **Mouse** – It is used for drawing pictures and selecting objects through click.
- **Scanner** – It is used to send document or images from paper to computer.
- **Microphone** – It is used to record voice, music and sounds.

Introduce output devices as the parts that are used to show result or output after processing. Share with them pictures/models of some output devices like:

- **Monitor or Visual Display Unit (VDU)** – It is used to show the data that is input and its result after computer process through its front portion, screen.
- **Printer** – It is used to print the work done by computer on paper. Tell the students about the types of printers as Inkjet printers and Laser printers.
- **Speakers** – It is used to listening to music, sound and voice on a computer.
- **Headphones** – They work as small speaker and are used to hear sound without disturbing others.
- **Headset** – used as a combination of microphone and headphones.

Introduce storage devices as the parts that are used to store our work in the computer.

Share with them pictures/models of some storage devices like:

- **Hard Disk** – It is rectangular in shape and fixed inside the CPU box.
- **Compact Disc (CD)** – It is circular in shape and portable storage device.
- **Digital Versatile Disc (DVD)** – It is circular in shape but with more storage capacity than CD.
- **Pen Drive or USB Flash Drive** –It has more storage capacity than DVD but less than Hard Disk. Show to the students CD/DVD Drive and USB ports used to read the files stored in CD/DVD and Pen Drive respectively.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What are the parts of a computer?

Q. What are input, output and storage devices?

Q. What is a keyboard?

Q. Define VDU.

Q. What is a hard disk?

Q. Give two examples of input, output and storage devices.

Q. What is a USB port used for?

Q. What is the name given to the combination of microphone and headphones?

Q. Expand CD and DVD.

Q. Which has more storage capacity: CD or DVD?

Q. Arrange in increasing order of storage capacity: CD DVD, Pen Drive and Hard Disk.

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 31 and 32 of the main course book as **One Touch Learn** and **Let's Do It**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on page 33 of the main course book to imbibe Coding & Computational Thinking skills. Help the students to solve these questions.

In Creative Assignment, activities like **Fun in Lab** given on page 34 of the main course book will enhance the ability of the students and serve as a Digital Literacy and Collaboration & Teamwork activity.

Suggested Activity

Ask the students to collect information about a modern storage device – Blue Ray Disc which looks like a CD/DVD but has much more storage capacity than the two.

4 Computer Keyboard

Teaching Objectives

Students will learn about

- Alphabet Keys
- Special Keys
- Combinational Keys
- Symbol Keys
- Number Keys
- Function Keys
- Punctuation Keys

Number of Periods	
Theory	Practical
1	1

Teaching Plan

While teaching this chapter, tell the students that keyboard is the main part of computer and used to type on computer screen. Show to the students that a keyboard has small buttons on it called keys.

Tell the students that the keys on a keyboard are divided into three categories:

- **Alphabet keys** – 26 in number (A to Z).
- **Number keys** – 10 in number (0 to 9).
- **Special keys** – Enter, Spacebar, Backspace, etc. Show to the students the position of various categories of keys on the keyboard.
- **Function keys** – 12 in number, each key has different job to perform.

Make the students understand that the alphabet keys (A to Z) on the keyboard are also used to write in small letters (a to z).

Share with the students that the number keys are used to type numbers and there are two sets of number keys on a keyboard.

Show to the students that there are some special keys also on the computer like:

- **Spacebar key** – longest key at the bottom, used to give blank space between letters and words.
- **Enter key** – also called Return key, two in number, used to move to the next line.
- **Backspace key** – used to erase what we have typed.
- **Cursor Control keys** – Show to the students the four arrow keys (up, down, left and right) on the keyboard, used to move the cursor.
- **Caps Lock key** – used to type letters in capital letters.
- **Tab key** – used to move the cursor several spaces forward at once.
- **Escape key (Esc)** – placed at top-left corner of the keyboard, used to cancel a task.

Make the students understand that the cursor shows the place where the typed letters will appear.

Tell the students that combinational keys are used to perform a particular task.

Familiarise the students with the working of combinational keys covering shift key, ctrl key and alt key.

Explain the students about punctuation keys and symbol keys.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What are the small buttons on a keyboard called?

Q. How many keys are there on a keyboard?

Q. Name the categories in which the keys on a keyboard are divided into.

Q. What are alphabet / number keys used for?

Q. How many sets of number keys are there on the keyboard?

Q. How many alphabet keys are there on the keyboard?

Q. What is the use of Enter / Spacebar / Backspace key?

Q. Name some special keys.

Q. What is the use of cursor control keys?

Q. How many cursor control keys are there?

Q. What are symbol keys?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 41 and 42 of the main course book as **One Touch Learn** and **Let's Do It**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on page 43 of the main course book to imbibe Coding & Computational Thinking skills. Help the students to solve these questions.

In Creative Assignment, activities like **Hands-On** and **Fun in Lab** given on pages 43 and 44 of the main course book will enhance the ability of the students and serve as a Creativity & Innovativeness, Digital Literacy and Experiential Learning activity.

Suggested Activity

Ask the students to paste a picture of computer keyboard in the computer notebook and label Number keys, Alphabet keys, Enter keys, Spacebar key, Backspace key and Cursor Control keys on it.

5 Computer Mouse

Teaching Objectives

Students will learn about

- Types of Mouse
- How to Hold a Mouse?
- Functions of the Mouse Buttons

Number of Periods	
Theory	Practical
2	0

Teaching Plan

While teaching this chapter, tell the students that a mouse is an input device and helps to tell the computer what to do. Share with the students some uses of a computer mouse.

Show to the students that the small arrow moving on the screen is called pointer.

Make the students understand the types of computer mouse:

- **Optical mouse** – has an LED sensor at its bottom that helps the pointer on the screen move.
- **Wired mouse** – has a long wire which can be connected to USB port and has a left, right button, and a scroll wheel.
- **Wireless mouse** – has no wire, runs on battery and attached to computer through bluetooth.

Show to the students the correct way of holding the mouse with reference to the position of fingers and palm.

Show to the students that a computer mouse can be used for:

- **Single-clicking or Clicking** – pressing and releasing left button quickly, used to select an icon.
- **Double-clicking** – pressing and releasing the left button twice quickly, used to open a program.
- **Right-clicking** – pressing and releasing the right button quickly, used to display a shortcut menu.
- **Scrolling** – rolling the mouse wheel up and down, used to move the page up and down.
- **Dragging and Dropping** – moving the mouse while keeping the left button pressed, use to move objects on screen.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a mouse used for?

Q. Name the pointing device.

Q. Name the two types of mouse.

Q. Which finger must be placed on left button / right button?

Q. Which finger must be used to scroll the wheel?

Q. Which fingers must be used to hold the sides of the mouse?

Q. Define pointing / clicking / dragging and dropping.

Q. What is the meaning of single-click / double-click / right-click?

Q. What is single-click / double-click / right-click used for?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 50 to 52 of the main course book as **One Touch Learn** and **Let's Do It**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on pages 52 and 53 of the main course book to imbibe Digital Literacy skills. Help the students to solve these questions.

In Creative Assignment, activities like **Hands-On** and **Fun in Lab** given on page 53 of the main course book will enhance the ability of the students and serve as a Creativity & Innovativeness and Digital Literacy activity.

Suggested Activity

Ask the students to draw a picture of a mouse representing single-click, double click, right-click, drag.

6 Introduction to Paint

Teaching Objectives

Students will learn about

- Steps to Start Paint
- Drawing in Paint
- Minimizing a Drawing
- Opening/Editing an Old Drawing
- Components of Paint Window
- Maximizing a Drawing
- Saving a Drawing
- Closing a Drawing

Teaching Plan

While teaching this chapter, tell the students that Paint is a program used to draw and colour.

Number of Periods	
Theory	Practical
1	2

Demonstrate to the students the steps to start paint.

Familiarise the students with Paint window showing Ribbon, Tabs, Title bar, Tools group, Shapes group, Colors group and Drawing Area.

Tell the students about the uses of Tools group (contains tools), Colors group (contains colour options) and Shapes group (contains shapes).

- Demonstrate the steps to:
- Draw straight lines using Line shape.
- Draw rectangles using Rectangle shape.
- Drawing rounded rectangle.
- Drawing a curve using Curve shape.
- Drawing a polygon.
- Fill colours in closed shapes.
- Make freehand drawing using Brushes tool.

Tell the students to maximize and minimize a drawing using control buttons.

Show the steps to the students for the following:

- Saving a drawing.
- Opening/Editing a drawing.
- Closing a drawing.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Paint?

Q. What is the use of Line / Rectangle shape?

Q. What is the use of Brushes / Fill with Color tool?

Q. How can the width of the Brush be changed?

Q. Under which category is the Paint program listed?

Q. Name the groups present on Paint window.

Q. What does the Colors / Shapes / Tools group contain?

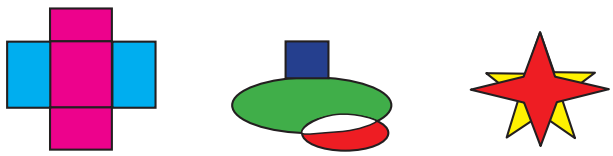
Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 63 and 64 of the main course book as **One Touch Learn** and **Let's Do It**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on page 65 of the main course book to imbibe Problem Solving & Logical Reasoning skills. Help the students to solve these questions.

In Creative Assignment, activities like **Hands-On** and **Fun in Lab** given on pages 65 and 66 of the main course book will enhance the ability of the students and serve as a Creativity & Innovativeness, Interdisciplinary and Environmental Awareness activity.

Suggested Activity

Ask the students to draw the following shapes in Paint.



7 File Management—An Introduction

Teaching Objectives

Students will learn about

- Storing on a Computer
- Creating a File
- Saving a File at a Different Location
- What is a File?
- Opening a File

Number of Periods	
Theory	Practical
1	1

Teaching Plan

While teaching this chapter, tell the students how we store different household things in different storage devices at our home.

Explain how do we store information on a computer and different storage devices.

Explain to the students, the need to store information on a computer.

Tell the students what is a file and demonstrate how to create a file.

Demonstrate how to open a previously created file.

Demonstrate and explain the steps to save a file at a different location.

Ensure that the scope of **Teacher's Corner** given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a file

Q. Name some storage devices we use to store household objects.

Q. Name the two types of storage devices used by a computer.

Q. Why do we need to save information on a computer?

Evaluation

After explaining the chapter, let the students do the course book exercises given on pages 72 and 73 of the main course book as **One Touch Learn** and **Let's Do It**. After solving the course book exercises, tell the students to solve **Crack the Code** activity given on page 73 of the main course book to imbibe Coding & Computational Thinking skills. Help the students to solve these questions.

In Creative Assignment, activity like **Fun in Lab** given on page 74 of the main course book will enhance the ability of the students and serve as a Interdisciplinary activity.

Suggested Activity

Ask the students to draw a flower in Paint and save the file on the desktop.