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thinkcode

Ver. 2.0

Teacher's Manual

Extended Support for Teachers

avaeducation.in

Teacher's Time Table

Periods / Days	0	I	II	III	IV		V	VI	VII	VIII
Monday						B				
Tuesday						R				
Wednesday						E				
Thursday						A				
Friday						K				
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 to 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 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 needs 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.

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During the class:

Present the lesson plan.

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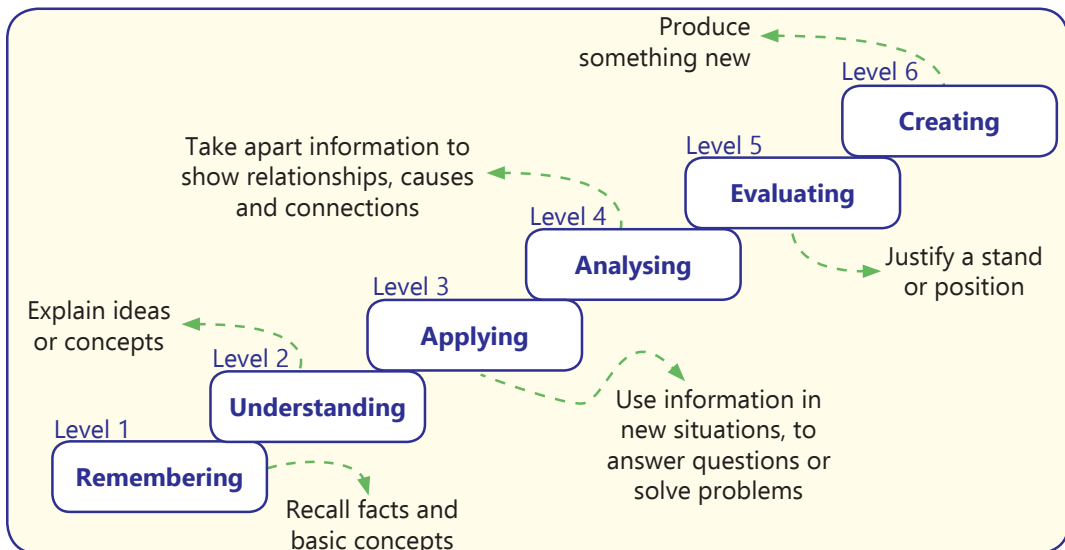
Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation, and so on.

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

1. Data Storage and Memory

Teaching Objectives

Students will learn about

- ☞ Data and Information
- ☞ Limitations of a Computer
- ☞ Input Devices
- ☞ Output Devices

- ☞ Characteristics of a Computer
- ☞ Working of a Computer
- ☞ Processing Device

Number of Periods
3

Teaching Plan

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

Introduce the term data as representation of facts, concepts, or instructions collected for analysis.

Tell the students about the characteristics and limitations of a computer.

Introduce the term Input as giving instructions to the computer.

Tell the students that keyboard, mouse, scanner, webcam, graphic tablet, joystick, microphone and touchscreen are used as input devices in a computer.

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

Tell the students that Central Processing Unit (CPU) and its three main components.

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

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

Ensure that the scope of For The Teacher 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/ Output.

Q. Name two input / output devices.

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

Q. Why is CPU called brain of the computer?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 13 and 14 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Activity Zone activity given on Page 14. Help the students to solve these questions.

In Creative Assignment, activity like Practical Zone given on Page 14 of the main course book will enhance the ability of the students and serve as a Subject Enrichment 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. Managing Files and Folders in Windows 10

Teaching Objectives

Students will learn about

☞ Windows 10 Desktop ☞ File or Folder

Number of Periods
3

Teaching Plan

While teaching this chapter, tell the students that Windows is a GUI based operating system developed by Microsoft.

Make the students recall desktop as the first screen on which they can work.

Familiarize the students with the components of Windows 10 desktop covering Start button, Icons, Taskbar, and Desktop background.

Explain briefly about each of these components of Windows 10.

Share with the students the usefulness of Show Desktop button.

Tell the students about the Live Tiles and Taskbar.

Demonstrate the steps to resize, move and add tile.

Tell the students about File and Folder.

Demonstrate to the students the steps to:

• Selecting a file/folder. • Creating a file/folder.

- Renaming a file/folder.
- Moving a file/folder.
- Copying a file/folder.
- Deleting a file/folder.

Tell the students about Recycle Bin and its use.

Ensure that the scope of For The Teacher given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q.   What is Windows 10?

Q.   Name the components of Windows 10 desktop.

Q.   Define Desktop Background.

Q.   What are icons?

Q.   In how many parts is the Start menu divided?

Q.   What are Live Tiles?

Q.   What is a file?

Q.   What is a folder?

Q.   What is Recycle Bin?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 23, 24 and 25 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Activity Zone activity given on Page 25. Help the students to solve these questions.

In Creative Assignment, activity like Practical Zone given on Page 26 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to prepare a note on any one Gadget provided by Windows 10 on an A4 sheet of paper.

3. Shapes, Graphics and Pictures in Word 2016

Teaching Objectives

Students will learn about

☞   Shapes

☞   Inserting pictures

☞   Inserting WordArt

☞   Inserting symbols

Teaching Plan

While teaching this chapter, tell the students that although Word is a word processor, yet it allows three types of graphics to work upon – Shapes, WordArt and Pictures.

Familiarize the students with various categories of Shapes under Illustrations group of Home tab explaining use of Lines, Basic Shapes, Flowchart, Stars and Banners and Callouts.

Demonstrate to the students the steps involved in the process of:

• Drawing a shape

• Adding text to the shape

Tell the students the various types of modifications that can be done on the inserted shape – changing outline color, changing fill colour, adding shape effects like 3-D rotation and bevel.

Introduce WordArt as application to create text effects which are not possible through text formatting.

Demonstrate to the students the steps to:

• Insert WordArt in a document

• Insert Pictures (from a file) (See Suggested Activity also)

• Insert Symbols (punctuations or special characters not found on keyboard)

Ensure that the scope of For The Teacher given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Name any three categories of Shapes in Word 2016.

Q. What do you mean by formatting a shape?

Q. What does Add Text option do?

Q. What does Bevel do?

Q. Define Symbols.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 34 and 35 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Activity Zone activity given on Page 35. Help the students to solve these questions.

In Creative Assignment, activity like Practical Zone given on Page 36 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Ask the students to write a paragraph in Word 2016 on 'Festivals of India'. The paragraph must be supported with relevant pictures.

4. Advanced Features of Word 2016

Teaching Objectives

Students will learn about
☞   Text formatting tools
☞   Text editing tools
☞   Page formatting tools

Number of Periods
5

Teaching Plan

While teaching this chapter, tell the students that formatting refers to the appearance of a document

Tell the students that a particular word or phrase in a document can be looked for with the help of Find feature.

Tell them that MS Word can go one step ahead and can replace that particular word or phrase by another word or phrase as required by the user using the Replace feature.

Demonstrate the steps to use Find and Replace features.

Explain to the students that line spacing means the blank space between two lines in a paragraph.

Activity can be created on the Orientation as Take two printouts in different orientations and display them in from of the class to demonstrate the difference between orientations.

Tell the students that page margin is the white space all around the printed area of the paper.

Make the students understand how they can modify page margin settings for their document.

Introduce to the students the concept of orientation as the side of the paper along which the content of the document will be printed.

Tell the students about different types of orientations.

Show to them the steps involved in changing the page orientation in a document.

Show to the students the main course book where book name and chapter name are appearing at the bottom of each page. Tell the students that this is called Footer of a page.

Make them understand that if the same or some other text appears on top of each page, it is called Header.

Demonstrate the steps involved in adding header and footer to a text document and tell them the various type of information can be shown as header and footer.

Ensure that the scope of For The Teacher given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is text formating tools?

Q. What is the difference between Find and Replace features?

Q. What is the meaning of Line break?

Q. What is the meaning of Page break?

Q. What do you mean by page orientation?

Q. What are page margins?

Q. What is the difference between header and footer in a document?

Q. Which tab is used to add header/footer to a document?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 50 and 51 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Activity Zone activity given on Page 51. Help the students to solve these questions.

In Creative Assignment, activities like Let's Get Better and Practical Zone given on Page 52 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to collect write a paragraph on My Favourite Sport in Word 2016 applying various formatting features to make the paragraph attractive.

5. PowerPoint 2016

Teaching Objectives

Students will learn about

☞ Starting PowerPoint 2016

☞ Creating a new Presentation

☞ Opening a Saved Presentation

☞ Exiting PowerPoint

☞ Components of the PowerPoint Window

☞ Saving a Presentation

☞ Closing a Presentation

Number of Periods
5

Teaching Plan

While teaching this chapter, tell the students that PowerPoint 2016 is a part of Microsoft Office 2016 package or suite.

Share with the students that it is used to create presentations.

Demonstrate to the students the steps to start PowerPoint 2016.

Familiarize the students with various components of PowerPoint screen covering Title Bar, Ribbon, Quick Access Toolbar, File Tab, Slide, Placeholder, Slides / Outline Pane and Status Bar.

Introduce slide as a single page of a presentation.

Demonstrate the steps to:

• create a new presentation.

• enter data on a slide in title and subtitle placeholders..

• add new slide to a presentation.

• changing font and font size of the text.

Tell the students how to:

• save a presentation.

• open a saved presentation

• close a presentation

• exit PowerPoint 2016.

Ensure that the scope of For The Teacher given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is PowerPoint 2016?

Q. Define Title Bar / Status Bar.

Q. What do you mean by Ribbon / Placeholder?

Q. What is a slide in a presentation?

Q. What are the steps to insert a new slide?

Q. What is the shortcut key to save a presentation?

Q. What are the steps to exit PowerPoint 2016?

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 Exercise. After solving the course book exercises, tell the students to solve Activity Zone activity given on Page 64. Help the students to solve these questions.

In Creative Assignment, activities like Let's Get Better and Practical Zone given on Pages 64 and 65 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to create a presentation on 'The Cartoon Character I Like The Most'.

6. More on PowerPoint 2016

Teaching Objectives

Students will learn about

☞ Slide Layout

☞ Inserting a Picture from a File

☞ Deleting a Slide

☞ Inserting WordArt

☞ Viewing a Presentation

Number of Periods
5

Teaching Plan

While teaching this chapter, tell the students that PowerPoint is a program that allows creating interesting and exciting presentations.

Introduce slide layout as arrangement of text, image, WordArt, Charts, etc. on a particular slide.

Share with the students the names of some commonly used slide layout options.

Demonstrate to the students the steps involved in changing the slide layout.

Tell the students that just like in Word document, WordArt can be added in a PowerPoint slide also.

Show to the students that the steps involved in Word and PowerPoint are almost similar.

Similarly, demonstrate to the students that Pictures from other files can also be added to a slide just like those inserted in Word.

Explain to the students the names of different types of slide views in MS PowerPoint covering Normal View, Outline View, Slide Sorter View and Reading View.

Ensure that the scope of For The Teacher given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. Define slide layout.

Q. What is WordArt?

Q. Can pictures be inserted on a slide?

Q. What are the steps to insert a picture from a file?

Q. When is Normal / Outline / Slide Sorter / Reading View used?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 73, 74 and 75 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Activity Zone activity given on Page 75. Help the students to solve these questions.

In Creative Assignment, activities like Let's Get Better and Practical Zone given on Pages 75 and 76 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Create a PowerPoint presentation on the topic "Are we conserving natural resources?". Use pictures to increase the effectiveness of the presentation.

7. More About the Internet

Teaching Objectives

Students will learn about

☞ What is Internet?   ☞ History of Internet

☞ Commonly Used Internet Terms   ☞ Microsoft Edge

Number of Periods
3

Teaching Plan

While teaching this chapter, recall about Internet to students and explain the brief history of Internet.

Tell the students the basic common Internet terms:

- World Wide Web   • Web Page   • Website   • URL

- Web Browser   • Hyperlink   • Downloading   • Uploading

- ISP   • Search Engine

Show the students the steps involved in using the search engines.

Tell the students about the Microsoft Edge and parts of Edge.

Ensure that the scope of For The Teacher given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. What is ARPANET?

Q. What do you understand by Downloading / Uploading data?

Q. Define URL / Hyperlink / Downloading / Uploading / Website / Web Page / ISP / Search Engine.

Q. Name any two parts of Microsoft Edge window.

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 83 and 84 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Activity Zone activity given on Page 85. Help the students to solve these questions.

In Creative Assignment, activities like Let's Get Better and Practical Zone given on Page 85 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to paste a picture of Microsoft Edge in their computer notebook / practical file and label its components and tools discussed in the chapter.

8. More Blocks in Scratch

Teaching Objectives

Students will learn about

☞   Scratch Components
☞   Block Categories
☞   Setting the Sprite Position

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Number of Periods
3

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Teaching Plan

Tell the students to recall about Scratch and revise the components of Scratch window components.

Explain the Block categories and its types using appropriate examples:

•   Motion blocks

•   Looks blocks

•   Sound blocks

•   Events blocks

•   Control blocks

Show the students how to set the sprite position with suitable example.

Ensure that the scope of For The Teacher given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q.   What is Scratch?
Q.   What are blocks?
Q.   What is motion block?
Q.   What is looks block?
Q.   What is sound block?
Q.   What are events block?
Q.   What is control block?
Q.   How to set sprite's position?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 92 and 93 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Activity Zone activity given on Page 93. Help the students to solve these questions.

In Creative Assignment, activities like Let's Get Better and Practical Zone given on Page 94 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to create a program in Scratch to move sprite 360 degree and reverse to its original position.

9. Creating Shapes in Scratch

Teaching Objectives

Students will learn about

☞   Pen Block

☞   Drawing Polygons in Scratch

☞   Drawing a Circle in Scratch

☞   Drawing a Line in Scratch

☞   Drawing a Square in Scratch

Number of Periods
2

Teaching Plan

Tell the students about pen block and explain its use with using appropriate examples. Also, show the steps involved in creating programs using pen blocks.

Show the steps involved in drawing a line in Scratch.

Tell the steps involved in drawing polygons in Scratch.

Explain the steps involved in drawing a square in Scratch.

Ensure that the scope of For The Teacher 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 pen block?

Q.   How can you draw a line in Scratch?

Q.   How can you draw a polygon in Scratch?

Q.   How can you draw a square in Scratch?

Q.   How can you draw a circle in Scratch?

Evaluation

After explaining the chapter, let the students do the course book exercises given on Pages 98 and 99 of the main course book as Exercise. After solving the course book exercises, tell the students to solve Activity Zone activity given on Page 99. Help the students to solve these questions.

In Creative Assignment, activities like Let's Get Better and Practical Zone given on Page 100 of the main course book will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to draw a triangle and circle together in a program.