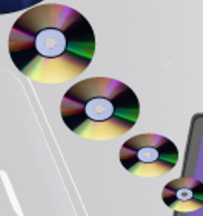


Knowledge

Computer Creations



TEACHER'S HAND BOOK

CLASS I TO X

Jyothi Krishnamurthi

About Computer Creations Series

Information Technology is omnipresent in today's world. Not only is new technology being developed quicker than ever before, it's also being adopted faster. This makes the knowledge of Computers imperative to survive in any industry.

Computer Creations series of **Computer Science text books** are designed to prepare our students for their prospective career in various fields and to provide a foundation in the essential skills of documentation, data processing, presentation, programming, desktop publishing, graphics and web design.

The book series grew out of my technical experience in the software industry and the class room experience during my teaching career. Hence, the books have a conversational tone, which will appeal to the student group. The aim of this series is not only to introduce the basics of computer science and its varied applications to our students, but also to create a genuine interest in them towards the subject. The language and content to explain the concept has been kept simple and pertinent, so that it doesn't overwhelm the young minds.

Each level of the series contains modules that cater to two broad categories of student minds – **Logical & Creative!** While the concepts and programming will challenge the academically oriented students; the animation, game making and graphics packages will reveal the creativity of the feisty ones.

Each chapter has been designed considering the depth of content appropriate for the class level and duration required to finish the topic. The book contains: -

☞ **Session** – Chapters are divided into multiple 40 min sessions. This will help the teachers to come up with the comprehensive lesson plan and also the portions to be targeted for each assessment period. It will also help the teachers to organize their minds for each session.

☞ **Do you know** – Interesting facts related to the topic. This is targeted to expand the interest of the students beyond the topic under discussion.

☞ **Student's corner** – Tips to help in lab work. This addresses the common mistakes made by students while using the tools under discussion as well as additional information about the same.

☞ **Teacher's corner** – Suggestions for the teachers related to installations and activities. This section provides tips for teachers as to how to present the topic to the students and to ensure that the concept has been comprehended by the students. It also provides links to websites for downloading the required software as well as instructions for the installation of the same.

☞ **Recap** - Revision of the key concepts covered in the lesson. This helps the child to refresh the relevant information before moving on to the next lesson. It also helps teachers to conduct a quick oral/written quiz to make sure the students have understood the chapter well.

☞ **Exercises** – Theory, Practical and Pictorial Questions to assess the learning. This section covers Q & A exercises to assess the comprehension of the subject by the students. It includes one word, one sentence and paragraph answers to cater to oral and written assessment.

☞ **Lab Work** – Practical lesson in lab based on the concept learned. Lab activity has been included to cover all the key concepts and tools explained in the chapter.

☞ **Group Activity** – Chart activity for the topic to encourage team work among students. This is targeted to instill group harmony as well as creativity in the young minds.

☞ **Practical Projects** - Sample Project Snapshots and tools used to aid teaching. These projects will help the teachers to visualize similar ideas to create their own projects.

☞ **Practice test** – Term level Assessment test for multiple chapters. This covers questions for the various key concepts covered over the term. It can serve as a reference for the teachers, to set their own question paper for assessment.

Computer Creations series of Computer textbooks has been compiled with the aim to serve as your reference guide to the world of Computers during your academic journey!

Jyothi Krishnamurthi

CLASS 1

Chapter 1: Natural and Man-Made Things

Objective: To understand about Natural and Man-made things around us.

Guidelines:

- Discuss about various natural and artificial things in our life.
- Ask the students to point the natural and man-made things in the school campus.

Chapter 2: Machines

Objective: To understand about importance of machines in our life.

Guidelines:

- Discuss about various machines we use in our day to day life.
- Ask the students to point the machines they can see in the classroom and in the school campus.

Chapter 3: Computer – An Electronic Machine

Objective: To understand about the advantages of Computer over other machines and the various uses of computer.

Guidelines:

- Discuss about how and where computers are used nowadays.
- Ask the students to talk about where all they have seen computers.

Chapter 4: Places Where Computers Are Used

Objective: To know about the places where computers are commonly used.

Guidelines:

- Discuss about different places we might come across computers.
- Ask the students to talk about where they used computer and what they did in the computer.

Chapter 5: Parts of Computer

Objective: To know about the basic parts of computer and their use.

Guidelines:

- Take the children to lab and show them different parts of the computer.
- Ask them to identify each part.

Chapter 6: Using the Computer

Objective: To learn the proper way to start, use and switch off computers.

Guidelines:

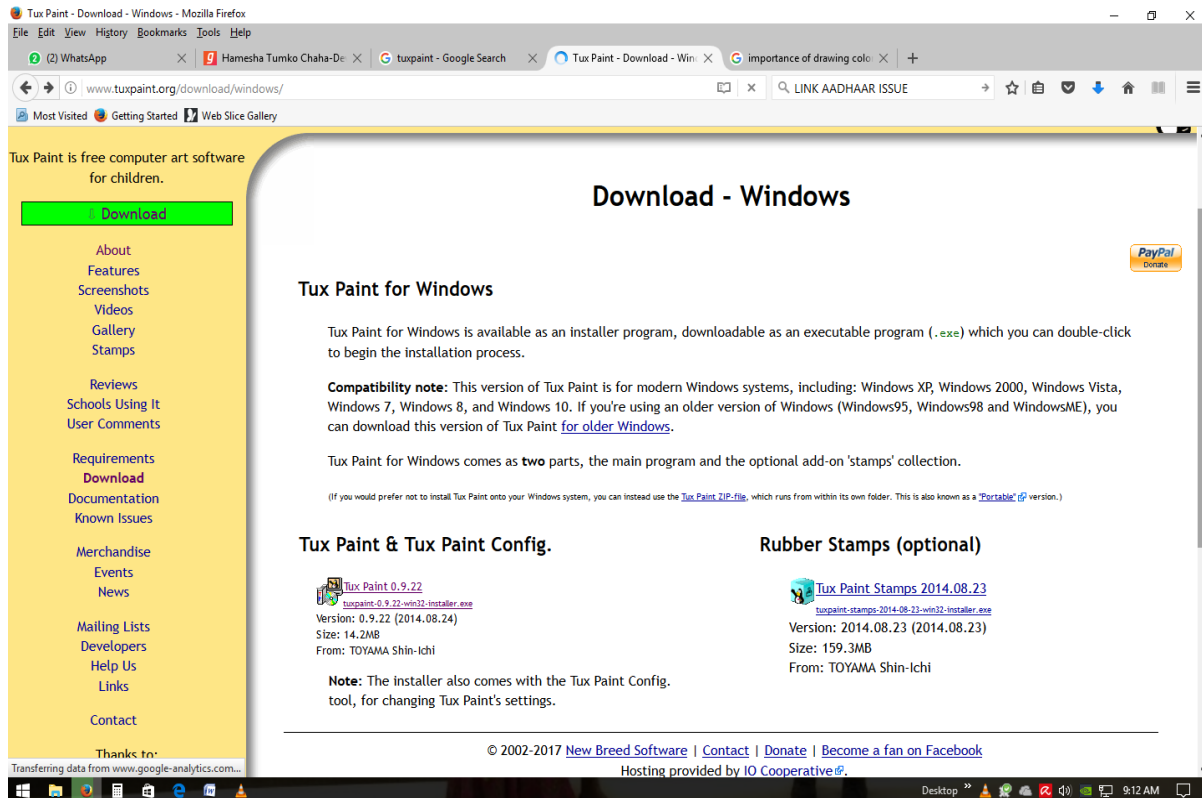
- Demonstrate to the students the steps to switch on and off the computer.
- Ask the students to perform the steps with proper guidance and assistance.
- Discuss the Do's & Don'ts to be followed in the Computer Lab.

Chapter 7: Drawing with Tux Paint**Objective:**

- To learn about the use and features of Tux Paint drawing program.
- To learn how to start and exit Tux Paint.
- To learn how to open and save a picture in Tux Paint.

Guidelines:

- Tux Paint is completely free software, released as "Open Source" software, under the provisions of the GNU General Public License (GPL). This means you may download it and install it on as many machines as you wish.
- Tux Paint for Windows comes as two parts, the main program and the optional add-on 'stamps' collection. Both the installer executables are available in <http://www.tuxpaint.org/download/windows/>.
- Stamps installer will add readymade images to the Tux Paint window so that we can include them in our images.
- You can read about the different options available in Tux Paint in the product website. <http://www.tuxpaint.org/features/>
- Demonstrate to the students how to identify the Tux Paint icon on the desktop, open Tux Paint and close Tux Paint.



Chapter 8: Parts of Tux Paint Window

Objective: To learn about the different parts of the Tux Paint window and their use.

Guidelines:

- Show the different parts of Tux Paint Window and tell the name.
- Point the different tools in toolbar and tell their name.
- Ask the students to repeat the name of parts and tools of Tux Paint few times.
- Ask the students to draw the tools and write their names.

Chapter 9: Creating a Picture using template

Objective: To learn how to create a Picture using the readymade templates available in Tux Paint.

Guidelines:

- Show the students how to open a template in Tux Paint.
- Show the students how to select Magic tools and choose Fill tool to apply color to the template.
- Show the step to print a picture.

Chapter 10: Creating a Picture using Solid Background Color

Objective: To learn how to create a picture from solid color background using paint brush, lines, text, shapes , stamp and magic tools.

Guidelines:

- The readymade pictures in stamp tool will be available in Tux Paint, only if you install exe for stamps in addition to the Tux Paint exe.
Both are available in <http://www.tuxpaint.org/download/windows/>
- Show the student to use the following tools
 - New tool to open an empty image.
 - Paint tool for drawing free hand.
 - Line and Shapes tool for drawing lines and shapes.
 - Fill Tool for applying color inside shapes.
 - Color section for selecting color for drawing and filling.
 - Stamp tool for adding readymade pictures.

CLASS 2

Chapter 1: How Computer Works

Objective: To learn about IPO cycle and how computer works based on the principle of IPO cycle.

Guidelines:

- Discuss with the students about the IPO cycle in different machines seen around us- What goes in as input, what happens inside and what comes out as Output.
- Point the input, output and processing devices of Computer and explain the name and use to the students.

Chapter 2: Input Devices

Objective: To learn about different types of input devices to handle different formats of input to the computer.

Guidelines:

- Point to different input devices in the computer lab and tell their name and use to the students.
- Briefly explain the use of the different parts of keyboard, mouse and any other input devices in the lab.
- Ask the students to draw or stick pictures of input devices and write their name.

Chapter 3: Output Devices

Objective: To learn about different types of output devices to handle different formats of output from the computer.

Guidelines:

- Point to different output devices in the computer lab and tell their name and use to the students.
- Briefly explain the use of the different parts of monitor, projector, speaker, printer and any other output devices in the lab.
- Show and explain how Smart class setup (if it exists) works in the class room.
- Ask the students to draw or stick pictures of output devices and write their name.

Chapter 4: Central Processing Unit

Objective:

- To learn about the use of CPU in the computer and their components.
- To learn about different types of memory in the computer.

Guidelines:

- Explain to the students about CPU and its components.
- Explain the difference between Volatile and Non-volatile memory.
- If any old unused computers available in school, you can open the CPU box and show them various parts inside.

Chapter 5: Storage Devices

Objective: To learn about the different types of storage devices and their use

Guidelines:

- Explain the difference between memory and storage devices.
- Discuss about Cloud storage like Google drive, Drop Box etc

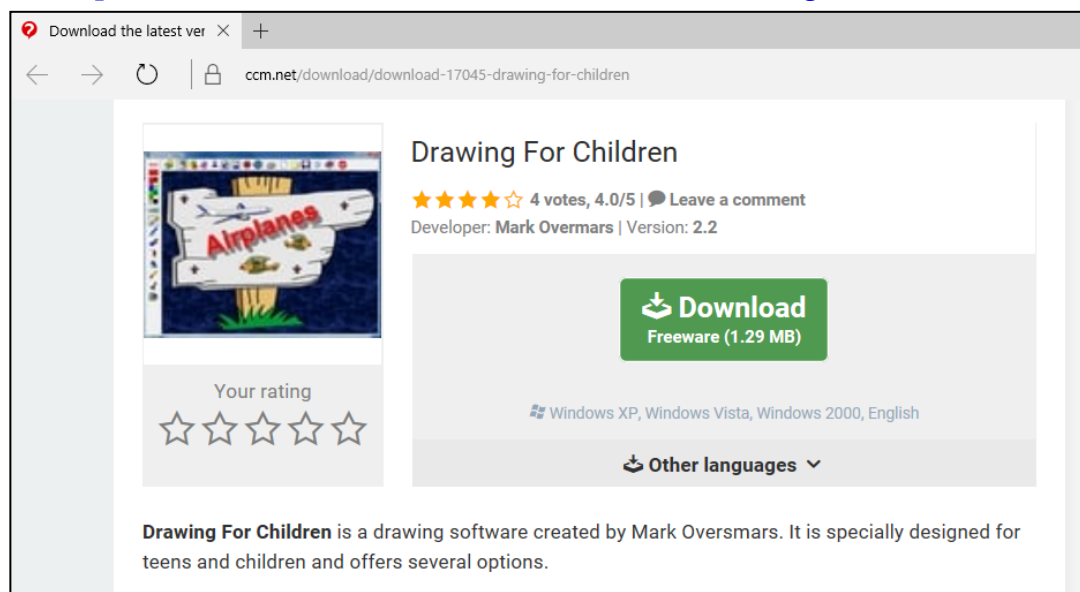
Chapter 6: Drawing for Children

Objective: To know about the different features of the drawing program, Drawing for Children and the use of the parts of Drawing for Children window.

Guidelines:

- Drawing for Children is a freeware and are available for download in many sites.

<http://ccm.net/download/download-17045-drawing-for-children>.



The screenshot shows a web browser window with the address bar displaying 'ccm.net/download/download-17045-drawing-for-children'. The main content area features a software listing for 'Drawing For Children'. On the left, there is a thumbnail image of the software's interface, which includes a drawing of an airplane with the word 'Airplanes' written on it. Below the thumbnail is a 'Your rating' section with five empty star icons. To the right of the thumbnail, the software title 'Drawing For Children' is displayed, followed by a rating of '4 stars, 4.0/5' and a 'Leave a comment' link. Below this, the developer 'Mark Oversmars' and version '2.2' are listed. A prominent green 'Download' button is centered, with 'Freeware (1.29 MB)' written below it. Underneath the button, the supported operating systems 'Windows XP, Windows Vista, Windows 2000, English' are listed. At the bottom of the listing, there is a link for 'Other languages' with a dropdown arrow. A descriptive paragraph at the bottom of the page states: 'Drawing For Children is a drawing software created by Mark Oversmars. It is specially designed for teens and children and offers several options.'

- In addition to the usual drawing and painting tools a range of stamps, abstract shapes, clipart and artistic effects are included.
- Name aside, it is also an appropriate intro program for older users with learning disabilities.
- Point the different parts of Drawing for Children window and tell their name.

Chapter 7: Tools in Drawing for Children

Objective:

- To know about the various tools in Drawing for Children and their use.
- To learn how to open, save and print images in Drawing for Children.

Guidelines:

- Point and explain the different tools in toolbar to the students.
- Ask the students to draw the tools and write their name.
- Show how to open, close, save and print pictures in Drawing for Children.

Chapter 8: Picture with Readymade Background

Objective:

- To learn how to create a picture using readymade background and clipart provided by Drawing for Children.
- To learn how to add text and apply special effects to the image.

Guidelines:

- Font button will only work when the setting Enable font selection is checked in Settings.
- Use Shift key to make the clipart images bigger while adding.
- Demonstrate to the students how to perform the following actions in Drawing for Children.
 - Starting Drawing for Children.
 - Opening an empty image using the New button in Tool bar.
 - Choosing readymade Background for the image.
 - Adding readymade images using Cliparts tool.
 - Using Text tool to type on the image.

Chapter 9: Picture with Solid Color Background

Objective: To learn how to create images from scratch using background color, stamps, special things, lines and shapes.

Guidelines:

- Use Ctrl key to create random effects for different tools.

- Alt key helps us to draw straight lines.
- Demonstrate to the students how to perform the following actions in Drawing for Children.
 - Applying background color using Fill tool.
 - Using Sketch lines tool to draw free hand.
 - Using Stamp tool to add readymade images
 - Adding Special things like trees, buildings and designs.

CLASS 3

Chapter 1: Mouse

Objective: To learn about the use of mouse and the different parts, the different actions performed using the mouse and the different types of mouse available in the market.

Guidelines:

- Point to the various parts of mouse and tell the name and use.
- Show them the right and wrong ways of holding the mouse.
- Discuss about the types of mouse in different gadgets.
- Read more about different types of computer mouse
<http://www.dummies.com/computers/pcs/mice/the-different-types-of-computer-mice/>
- Demonstrate the use of various mouse actions and ask them to practice the same.
- Ask them to draw a mouse and label the parts.

Chapter 2: Keyboard

Objective: To learn about the use of keyboard and the different types of and the different types of keyboards.

Guidelines:

- Point to the various keys in the keyboard and tell the name and use.
- Discuss about the types of keyboards in different gadgets.
- Demonstrate the use of various keys and ask them to practice the same.
- Read about different types of keyboards

<https://readanddigest.com/different-types-of-computer-keyboards/>

Chapter 3: Typing with Notepad

Objective: To learn about the use of notepad and the various tools available in notepad to create and edit text files.

Guidelines:

- Microsoft Notepad is included with all versions of Windows. It is available under the Accessories option in the Start Menu.
- Demonstrate to the students the following actions in Notepad.
 - Starting Notepad
 - Opening a new file or existing file
 - Saving a file
 - Printing a file
 - Formatting text using Font Option
 - Inserting Date & Time
 - Searching and Replacing text

- You can read more about Notepad in

<http://www.thewindowsclub.com/basic-notepad-tips>

Chapter 4: Operating System

Objective:

- To learn about basic components of computer – Hardware and Software.
- To learn about the classifications of Software.
- To learn about different types of operating system and their use.

Guidelines:

- Point out the different hardware and software in the computer lab.

- Name a device/application and ask whether it is a hardware or software.
- Discuss about the various operating system used in gadgets, phones, vehicles etc.
- You can read about various types of operating system here.
<https://techspirited.com/different-types-of-operating-systems>

Chapter 5: Working with Windows

Objective: To learn about Windows operating system and desktop.

Guidelines:

- Point at the different parts of Windows Desktop and tell their name and use.
- Demonstrate to children the use of various icons on the desktop and taskbar.
- Demonstrate how to change the desktop background and changing date and time.
- You can read more about the different Window elements and their use here.
<https://worldofinfotech.wordpress.com/tag/basic-window-elements/>

Chapter 6: Stick Figure Animation with Stykz

Objective:

- To know about the features of Stykz animation software.
- To learn about the parts of Stykz Workspace and their use.

Guidelines:

- Stykz is a freeware and can be downloaded from the product website.
<https://www.stykz.net/downloads/windows.php>



- You can read about the various features of Stykz here.
<https://www.stykz.net/stykz.php>
- Point at each part of the Stykz workspace and tell the name and use.

Chapter 7: Tools in Stykz

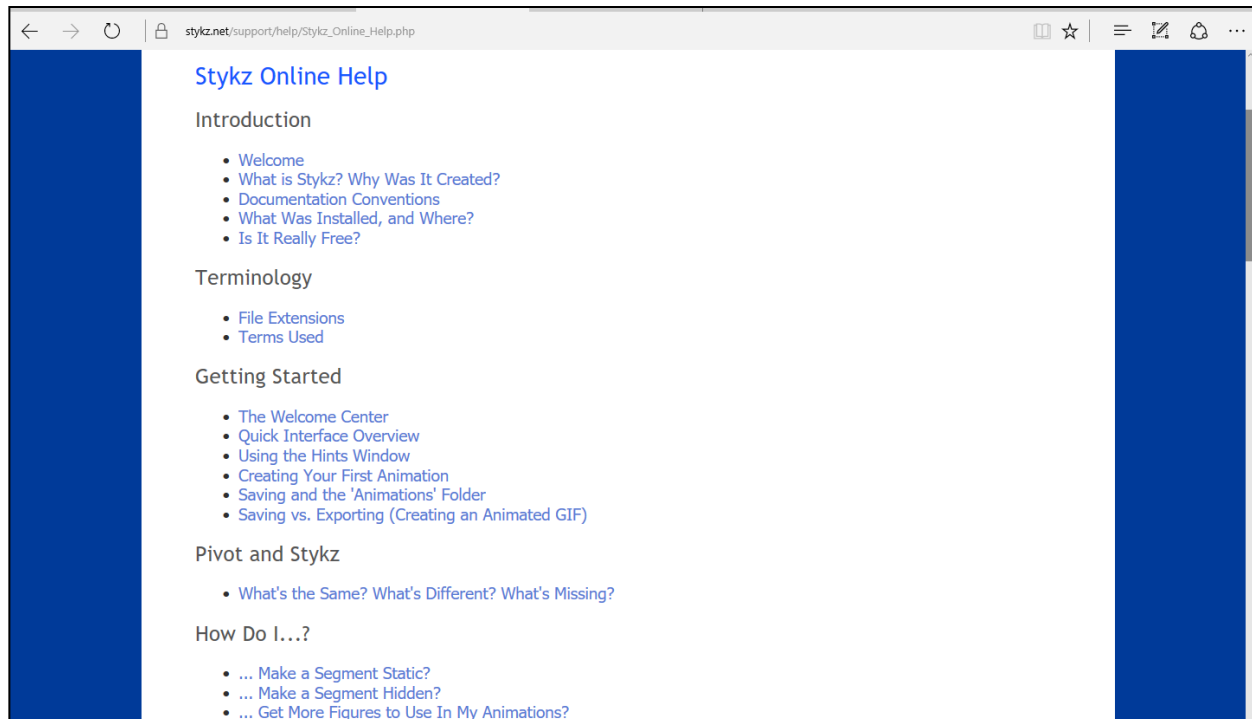
Objective:

- To know about the features of Stykz animation software.
- To learn about the parts of Stykz Workspace and their use.

Guidelines:

- Explain the difference between Default and Blank document.
- Explain the difference between Stykz figure and Pivot 2 figure.
- Show and explain nodes and segments.
- Show and explain the use of various palettes and the options in Stykz.
- Demonstrate to the students how to perform the following actions in Stykz.
 - To start, open, close and save stykz document.
 - To apply background color using Stage Properties.
 - To format stick figure using Figure Properties.
 - To draw shapes using Add Circle tool and Add Line tool.

- To fill color in shapes using the Polyfill tool.
- You can read more about tools, palettes and features here.
<https://www.sty kz.net/support/help/Sty kz Online Help.php>



Chapter 8: Creating Animation with Stykz

Objective: To learn how to create stick figure animations using the tools and palettes in Stykz.

Guidelines:

- If any of the palettes are missing, go to Window Menu and check the required option from the drop down.
- Demonstrate to the students how to perform the following in Stykz.
 - Adding a new Stykz figure
 - Adding a new frame
 - Moving the figure using drag node
 - Rotating the segments using Pivot node
 - Adjusting the speed of animation
 - Playing the animation once and in loop
 - Exporting the animation as animated GIF and viewing in browser

CLASS 4

Chapter 1: History of Computers

Objective: To learn about the history of computers and how it has evolved over the years.

Guidelines:

- Discuss about the recent developments in Computers.
- Ask the student to find out and write/talk about one invention or technology related to computers.
- You can read about the history of computing in this website.

<https://www.britannica.com/technology/computer/History-of-computing>

Chapter 2: Computer Pioneers

Objective: To learn about some pioneers who have played a major role in the growth of the computer technology!

Guidelines:

- Talk about famous people in computers today like Sundar pichai of Google etc.
- Ask students to find out information about any founder in the IT field and talk/write about them. E.g.: founder of flipkart etc.
- You can read about some pioneers in computing in this webpage.

<https://www.techopedia.com/2/27836/development/programming-tools/the-pioneers-of-computer-programming>

Chapter 3: Generations of Computer

Objective: To learn about the different generations of computer and technology used in them.

Guidelines:

- Discuss about how the development in computers has been categorized based on the technology.

- Try to show them some pictures or video of the various generations.
- Ask students to find out information about recent invention or development in Artificial Intelligence.
- You can read more on the generations of computers in this webpage.
https://www.webopedia.com/DidYouKnow/Hardware_Software/FiveGenerations.asp

Microsoft Paint

Chapter 4 Introduction to Microsoft Paint

Objective:

- To know about Microsoft Paint program and its features.
- To learn about the parts of MS Paint window and their use.
- To learn how to create, open, save and print images in MS Paint.

Guidelines:

- Microsoft Paint is a simple graphics editing program that is included with Microsoft Windows.
- Demonstrate to the students how to start MS Paint and to create, save and print images in it.
- Point at the parts of MS Paint window and tell their name and use.

Chapter 5 Tools in MS Paint

Objective: To learn about the various menus and tools in MS Paint and their use in creating images.

Guidelines:

- Point at the various menus and the tools in MS Paint and tell their name and use.
- Ask the students to draw the tools and write the name.
- You can read more on the use of various tools in MS Paint in this web page.
<https://www.wikihow.com/Use-Microsoft-Paint-in-Windows>

Chapter 6 Editing Image in MS Paint

Objective: To learn how to edit and format images in MS Paint.

Guidelines:

Demonstrate to the students how to perform the following actions in MS Paint.

- Selecting the whole image or a part of image
- Resizing the image
- Cropping the image
- Rotating the image
- Zooming in or out of the whole image or a part of image

Chapter 7 Drawing in MS Paint

Objective: To learn how to draw and create images in MS Paint.

Guidelines:

Demonstrate to the students how to perform the following actions in MS Paint.

- Applying background color to the image
- Drawing readymade shapes in MS paint and applying fill and outline colors
- Drawing freeform using brush or pencil tools and choosing different brush types, size and colors.

Scratch

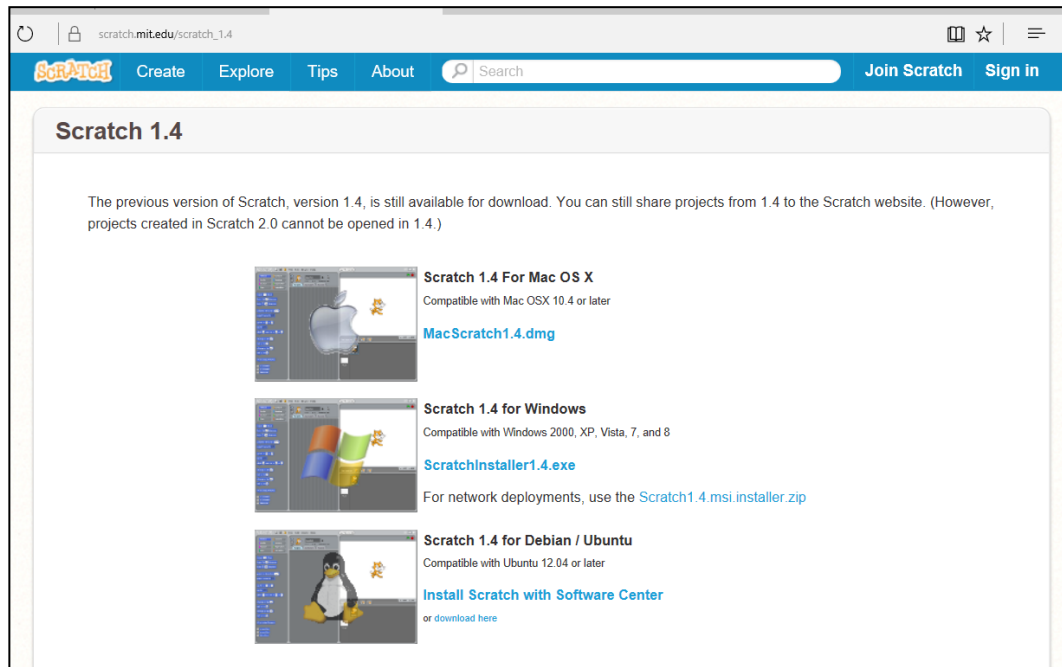
Chapter 8 Introduction to Scratch

Objective:

- To know about the use of Scratch and its features.
- To know about the different sections and palettes of Scratch workspace and their use.
- To learn how to start Scratch and to create, open, save or import projects in Scratch.

Guidelines:

- Scratch is a free visual programming language used to create interactive stories, games, and animations. Scratch is developed by the Lifelong Kindergarten research group at the MIT Media Lab.
- Sprite is a freeware available for download in the product site.
https://scratch.mit.edu/scratch_1.4/



- Demonstrate to the students how to start Scratch, open Scratch project, save and exit.
- Point at the parts of Scratch window and tell their name and use.

Chapter 9 Working with Scratch

Objective: To learn how to work with sprites, sounds and scripts in Scratch projects.

Guidelines:

- Demonstrate to the students how to perform the following actions in Scratch.
 - Adding Background to Stage
 - Adding a Sprite
 - Resizing a Sprite

- Moving a Sprite using Motion Block
- Adding Sound using Sound Block
- Building scripts using Control blocks
- Using Green flag and Stop button for running the scripts
- You can read more on how to create Scratch projects in the website https://scratch.mit.edu/projects/editor/?tip_bar=getStarted

Chapter 10 Animations in Scratch

Objective: To learn how to create animations in Scratch using Costumes and Looks Block

Guidelines:

- Demonstrate to the students how to perform the following actions in Scratch.
 - Adding Costumes for Sprites
 - Changing Costumes of Sprites using Scripts from Looks block
 - Changing colors of Sprites using Looks block
 - Adding Think or Talk Bubble using Looks Block

CLASS 5

Chapter 1 Types of Computers

Objective: To know about different types of computers categorized based on their power and size.

Guidelines:

- Discuss about the different types of computers and their use.
- Discuss with students about the different microcomputers used in day to day life.
- You can read more about various types of computers in this webpage.

https://en.wikiversity.org/wiki/Types_of_computers

Windows Explorer

Chapter 2 Introduction to Windows Explorer

Objective:

- To know about the various uses of Windows Explorer.
- To learn about the parts of Windows Explorer window and their use.

Guidelines:

- Demonstrate different ways of opening Windows Explorer.
- Show the different parts of Windows Explorer window and tell their name and use.
- Icons and menus might be different in various versions of Windows.
- You can read about different ways of opening Windows Explorer in this webpage.

<https://www.wikihow.com/Open-Windows-Explorer>

Chapter 3 Using Windows Explorer

Objective: To learn about the different actions that can be performed in Windows Explorer!

Guidelines:

- Depending on the version of Windows OS, the menus and layout of the Explorer window might differ!
- Demonstrate to the students how to perform the following actions in Windows Explorer.
 - Open a document
 - Open a program
 - Search for a file or folder
 - Copy file or folder
 - Move file or folder
 - Delete file or folder
 - Rename file or folder
 - Create a shortcut to file or folder

- You can read more on how to work with files in Windows Explorer in this webpage.

<https://www.webucator.com/tutorial/windows-7/index.cfm>

Chapter 4 Microsoft Office

Objective:

- To learn about the use of computers in office management
- To learn about the use of Microsoft Office package and the different versions.
- To learn about the different applications included in MS Office suite and their use.

Guidelines:

- To see the applications included in the Microsoft Office Suite in your system, go to Start menu → All Programs → Microsoft Office. The list of applications will be displayed below Office option.
- Discuss with students about the use of different versions of MS Office suite.
- Discuss with students about the use of various applications included in MS Office Suite.
- You can read more about MS Office, versions and applications in Wikipedia.

https://en.wikipedia.org/wiki/Microsoft_Office

Microsoft Word

Chapter 5 Introduction to Microsoft Word

Objective:

- To learn about the use of Microsoft Word and its features.
- To learn about the use of different parts of MS Word Window.
- To learn about the various file operations performed in Word.

Guidelines:

- Point out the different parts of MS Word window to the students and tell their name and use.
- Demonstrate to the students the following actions in MS Word.

- Starting MS Word
- Creating a new document
- Opening an existing document
- Saving a document
- Printing a document
- You can read more about the use of various parts of MS Word window in this webpage.
<https://www.officetutorial.net/word/microsoft-word-2007-and-2010-parts-and-controls/387/>

Chapter 6 Text Formatting in MS Word

Objective: To learn about the text formatting tools in MS Word and their uses.

Guidelines:

- Point at the various text formatting tools and tell their name and use.
- Demonstrate to the students how to perform the following text formatting in MS Word.
 - Changing Font Style, Size and Color
 - Highlighting Text
 - Changing Text Case
 - Aligning Text
 - Changing spacing between lines and paragraphs
 - Applying Bullets and Numbering
 - Searching and Replacing text
- You can read more on text formatting in Word in this webpage.
<https://www.universalclass.com/articles/computers/formatting-in-ms-word-2007.htm>

Chapter 7 Inserting Graphics in MS Word

Objective: To learn how to add shapes, images, charts, tables, word art, textbox etc. using the Insert Tab in MS Word.

Guidelines:

- Point and tell the name and use of the various tools in Insert tab.

- Demonstrate to the students the following actions using various tools in MS Word.
 - Inserting and Formatting Picture & Clipart
 - Inserting and Formatting Shapes
 - Adding and Formatting text using WordArt and TextBox tools
 - Adding and Formatting tables
- There are many formatting tools in Format tab which are common for Shape and WordArt such as Shape fill, Shape Outline, Change Shape, Shadow Effects, 3 D Effects, Position, Align and Rotate.
- You can learn about the use of Illustrations, Tables and Text tools in MS Word in this webpage.
 - <http://www.free-computer-tutorials.net/word-2007-illustrations.html>
 - <http://www.free-computer-tutorials.net/word-2007-tables.html>
 - <http://www.free-computer-tutorials.net/word-2007-text.html>

Chapter 8 Page Design in MS Word

Objective: To learn how to design the layout of the page in Word document using the different tools in Page Layout and Insert tabs.

Guidelines:

- Point and tell the name and use of various tools used to design the layout of the page in MS Word.
- Demonstrate to the students how to change the orientation, size, margin, color, border and background for the page in Word.
- Demonstrate how to apply watermark, page number and date/time.
- Demonstrate how to add text or images for Header and Footer in Word.
- You can read more about the tools in Page Layout tab and Header and Footer section in these web pages.

http://www.learningcomputer.com/ms_word_page_layout_tab/

<http://www.free-computer-tutorials.net/word-2007-header-footer.html>

CLASS 6

Microsoft PowerPoint

Chapter 1: Introduction to PowerPoint

Objective:

- To learn about the importance of presentation software.
- To know about the use of Microsoft PowerPoint and its features.
- To learn about the use of various parts of MS PowerPoint window.

Guidelines:

- Demonstrate how to launch Microsoft PowerPoint using Start Menu.
- Point out the parts of MS PowerPoint window to the students and tell their name and use.
- You can read more about the use of various tools and parts of MS PowerPoint in this web page.

<https://www.microsoftpressstore.com/articles/article.aspx?p=2192909>

Chapter 2: Getting started with MS PowerPoint

Objective: To learn how to use the different parts of MS PowerPoint to create presentation files.

Guidelines:

- The Menu and tool options might differ based on the version of PowerPoint.
- Demonstrate to the students how to create, open, save and print MS PowerPoint presentation.
- Demonstrate how to play slideshow in different ways.
- Demonstrate how to add new slide, choose layout, delete slide and also to move slide to another position.
- You can read more on the file and slide operations in the web page.

<http://www.electricteacher.com/tutorial3.htm>

You can read about slide layout in this page.

<https://support.office.com/en-US/article/what-is-a-slide-layout-99da5716-92ee-4b6a-a0b5-beea45150f3a>

Chapter 3: Slide Background in MS PowerPoint

Objective:

- To learn how to apply themes, background style and size for the slides in MS PowerPoint presentation!
- To learn how to display slide number, date & time and text using header and footer tools

Guidelines:

- Demonstrate to the students how to apply different themes and the background styles for each theme.
- Encourage the students to experiment with various themes and background styles. Ask them to note down the name of various themes.
- Demonstrate the use of **Header and Footer** tool in the Insert tab to display slide number, date and time and any text as header/footer.
- Demonstrate how to change the orientation and size of the slides in a presentation to suit the size of the display screen or print paper.
- You can read more about the above operations in the page.

[https://support.office.com/en-us/article/design-your-slides-53c20bd5-e594-4837-a7ad-525706e09960?ui=en-US&rs=en-US&ad=US#PowerPoint-Design=Backgrounds and theme](https://support.office.com/en-us/article/design-your-slides-53c20bd5-e594-4837-a7ad-525706e09960?ui=en-US&rs=en-US&ad=US#PowerPoint-Design=Backgrounds%20and%20theme)

Chapter 4: Text Formatting in MS PowerPoint

Objective: To learn how to learn how to add and format text in MS PowerPoint presentation.

Guidelines:

- Demonstrate the following actions to add and format text in a PowerPoint slide.
 - Adding and formatting text using placeholder, textbox and WordArt.

- Formatting text using the tools available in the **Font** and **Paragraph** sections in **Home tab**.
- Changing text case, alignment and character spacing.
- Ask the students to draw the tools and write their name.
- You can read more about text formatting in MS PowerPoint in this page.

<https://www.universalclass.com/articles/computers/how-to-work-with-text-in-powerpoint-2007.htm>

Chapter 5: Graphics in MS PowerPoint

Objective: To learn how to add images and shapes, format and animate them in MS PowerPoint presentation.

Guidelines:

- Demonstrate how to perform the following actions in MS PowerPoint.
 - Adding and formatting pictures and clipart
 - Adding audio and video to the presentation
 - Applying animations and effects to text, shapes and images
 - Applying transitions to slides
- You can read more about adding animations and multimedia to PowerPoint in this web page.

<https://www.microsoftpressstore.com/articles/article.aspx?p=2192910>

Microsoft Excel

Chapter 6: Introduction to Microsoft Excel

Objective:

- To learn about spreadsheet and its use in accounting.
- To learn about Microsoft Excel and its features.
- To learn about the use of the various parts of Excel window.

Guidelines:

- Talk about how accounts were maintained in olden days.
- Demonstrate how to launch MS PowerPoint using Start menu.
- Point out the parts of MS Excel window to the students and tell their name and use.
- You can read more about the evolution of spreadsheet in this webpage.
<http://www.software-matters.co.uk/spreadsheets.html>

Chapter 7: Getting Started with MS Excel

Objective: To learn how to use the various tools in Microsoft Excel to create spreadsheets.

Guidelines:

- Demonstrate the use of keyboard keys to navigate the cells in the worksheet.
- Demonstrate how to perform the following actions in MS Excel.
 - Creating a new Excel Workbook
 - Adding, Renaming , deleting ,moving or copying a worksheet
 - Entering data in a cell
 - Using the formatting tools for the data and the cell
 - Changing the alignment and direction of the cell contents
 - Merging Cells
 - Number formatting to display currency, percentage, date and time etc
- Ask the students to draw the tools and write their names.
- You can read more about excel worksheets in this web page.
<http://www.excel-easy.com/basics/worksheets.html>

Chapter 8: Formatting Cells in Excel

Objective: To learn how to format the cells in the worksheet by inserting or deleting rows and columns or adjusting the width of columns and height of rows.

Guidelines:

- Demonstrate to the students how to perform the following actions in the worksheet.
 - Inserting and deleting rows and columns.
 - Adjusting the column width and row height by specifying fixed value or using Autofit option.
 - Specifying row and column titles to be repeated for printing.
- You can read more about Excel tables in this web page.

<https://support.office.com/en-us/article/overview-of-excel-tables-7ab0bb7d-3a9e-4b56-a3c9-6c94334e492c>

Chapter 9: Data Processing using MS Excel

Objective: To learn how to use MS Excel tools to create charts and perform calculations using formula and functions.

Guidelines:

- Demonstrate to the students the following actions in MS Excel.
 - Sorting data numerically and alphabetically in ascending and descending order based on specific columns.
 - Autofill sequence of data like serial numbers, month, year etc
 - Adding formula to a cell manually
 - Adding function to a cell manually or using Function library
- Explain the use of charts and demonstrate how to create different types of charts for the same data.
- Demonstrate how to format the chart to change Chart style, Chart layout, Chart Title, Axes Title, Chart Wall, Chart Floor ,Text Style etc.
- Based on the chart type, the tool options available in the Design, Layout and Format tabs will differ.
- Ask the students to try out different layout and format options for each chart type.
-
- You can read about how to create a chart in excel in this webpage.

<https://support.office.com/en-us/article/create-a-chart-from-start-to-finish-0baf399e-dd61-4e18-8a73-b3fd5d5680c2>

- You can read more about formula and functions in excel in this webpage.
<https://www.ablebits.com/office-addins-blog/2017/06/14/basic-excel-formulas-functions-examples/>

CLASS 7

Network Basics

Chapter 1: Network Basics

Objective:

- To learn about data communication and its components.
- To learn about computer network and its advantages.
- To learn about different types of network.

Guidelines:

- Discuss with students the different ways of conducting personal, business and mass communication.
- Ask the students to choose and talk about any one communication technology.
- Show and explain the LAN and Internet connectivity in the computer lab.
- Discuss the different networks we can see around us in school, home, airport, shopping mall etc.
- You can read more about different types of network in this web page.
<https://www.studytonight.com/computer-networks/types-of-networks>

Chapter 2: Internet

Objective:

- To learn about the Internet, its related technologies and their use.
- To learn about the various services provided by Internet.

- To learn about the various Internet protocols and their purpose.
- To learn about different types of internet connections.

Guidelines

- Discuss the different uses of the Internet in our day to day life.
- Ask the students to talk about how, where and for what purpose they have used the Internet.
- Explain the use of various Internet Protocols.
- Discuss the different types of Internet connections.
- Take the students to Lab or Library where there is Internet connection and show them how the devices are connected.
- Ask the students to find out the kind of Internet access and connectivity available at home and talk about it to the class.
- You can read more about Internet and their uses in this webpage.

<https://www.gcflearnfree.org/internetbasics/>

HTML

Chapter 3: Hyper Text Markup Language

Objective:

- To learn about WebPages in the World Wide Web and how HTML is used to develop these web pages.
- To learn about Search Engines and Web browsers
- To learn about Websites and Web pages
- To learn about the use of HTML and various HTML tags.
- To learn how to create and save a HTML document and view it in web browser.

Guidelines

- Demonstrate the difference between Web browsers and Search engines to the students.

- Ask the students to talk about the websites they have visited, their URL and content.
- Discuss with the students about the URL of the school website and its homepage.
- Explain the basic structure of a HTML document and use of the tags.
- Demonstrate saving the HTML document in notepad and opening it using a web browser.
- You can read more about HTML basic structure in this web page.
<http://www.simplehtmlguide.com/whatishtml.php>

Chapter 4: Text Formatting with HTML

Objective: To learn how to specify text formatting for web pages using HTML tags.

Guidelines

- Demonstrate to the students the use of the Heading Tags, Paragraph Tag, Line Break Tag and Text Formatting tags.
- Demonstrate the use of HTML style attribute for specifying font style, size and color for the text.
- Demonstrate to the students the use of color name and hexadecimal code to display text in different colors.
- Ask the students to find any 10 colors supported by HTML and write down their names and hexadecimal code.
- You can read more about the text formatting tags of HTML in the web page.
<http://www.simplehtmlguide.com/text.php>

Chapter 5: Organizing Information Using HTML

Objective: To learn how to organize data in the form of lists and tables.

Guidelines

- Demonstrate to the students how to display information in the form of various types of lists in HTML- **Ordered List, Unordered List, Definition List and Nested List** using HTML tags.
- Demonstrate to the students how to arrange data like text, images, links, lists etc. into rows and columns of cells using HTML Table tags.
- You can read more about the List and Table tags of HTML in the web page.
<http://www.simplehtmlguide.com/lists.php>
<http://www.simplehtmlguide.com/tables.php>

Chapter 6: Images in HTML

Objective:

- To learn how to display images, scrolling text and background on a webpage.
- To learn how to navigate from one web page to another using hyper links.

Guidelines

- Demonstrate to the students how to images on a web page by using **** tag.
- Demonstrate the use of various attributes to control the size, position and border thickness of the image.
- Demonstrate to the students how to specify a color or an image as background for the webpage using the attributes **bgcolor** and **background** in the **<body>** tag.
- Demonstrate to the students how to display scrolling texts or images on a webpage by using **<marquee>** tag.
- Demonstrate to the students how to control the speed and direction in which the text or image moves on the web page using different attributes of the Marquee tag.
- Demonstrate the use of hyperlinks in various websites to navigate from one webpage to another.
- Show to the students how the images and text act as hyperlinks to other web pages and demonstrate how they are used.

- Demonstrate to the students how to create a hyperlink on any image or text to link to another HTML page using anchor <a> tag.
- Demonstrate to the students how to arrange information in rows and columns of cells using HTML Table tags.
- You can read more about use of image tags, marquee tags and hyperlinks in the web pages given below.

<http://www.simplehtmlguide.com/images.php>

<http://www.simplehtmlguide.com/linking.php>

https://way2tutorial.com/html/html_marquee_tag.php

SCRATCH

Chapter 7: Scratch Workspace

Objective:

- To learn about the basic components of Scratch and their use.
- To learn about the different parts of Scratch workspace and their use.
- To learn about the various options in Scratch menu bar and their use.

Guidelines

- **Scratch** is a visual programming language used to create interactive stories, games and animations. Scratch is developed by the **Lifelong Kindergarten Group at the MIT Media Lab**, with financial support from the National Science Foundation, Microsoft, Intel Foundation, Nokia, and the MIT Media Lab research consortia.
- Scratch is a freeware available for download in the product site.
https://scratch.mit.edu/scratch_1.4/
- An introduction to the Scratch tool and Animations using Scratch are covered in Knowledge Computer Creations – Class 4 text book.
- Demonstrate starting Scratch application, opening a new Scratch Project and saving the file in the computer.

- Point to the different parts of Scratch workspace and tell the name and use of each. Ask the students to repeat the same.
- You can read more on how to create Scratch projects in the website https://scratch.mit.edu/projects/editor/?tip_bar=getStarted

Chapter 8: Working with Scratch Components

Objective: To learn how to create animations and games using the various components of Scratch - **Sprites, Costumes, Blocks, Scripts, Sound, Background and Stage.**

Guidelines

- Demonstrate the following actions to the students
 - To change the stage background
 - To import sprites to add images to the animation
 - To animate sprites by adding and changing costumes
 - To import sound files into the project
 - To create script by adding various types of blocks – Motion, Looks, Sound , Control etc.
 - To run and stop the script for the Scratch animation
 - To view the project in different presentation modes
- Encourage the students to create their own background or sprite by editing them in the Paint Editor in Scratch workspace.
- Scratch has provided many sample scripts for the sprites. When you import a new sprite from the Scratch folders, we can see many sprites with the number of scripts displayed with it. These will be useful to understand the use of different blocks to create script.
- You can read more on Scratch in this website [https://en.scratch-wiki.info/wiki/Getting Started with Scratch](https://en.scratch-wiki.info/wiki/Getting_Started_with_Scratch)

CLASS 8

Chapter 1 Malware

Objective: To learn about different types of malware and how they affect the system and the users.

Guidelines

- Explain to the students about Malware and the symptoms of infection.
- Discuss about various types of malware with examples.
- Ask students to find out the details of any popular malware/virus and talk/write about it.
- Explain to the students how to prevent malware infection.
- You can read more about various types of malware in this webpage.
<https://www.lastline.com/blog/malware-types-and-classifications/>

Chapter 2 Introduction to Computer Graphics

Objective:

- To learn about computer graphics and its uses.
- To learn about the two types of graphics – Raster and Vector.

Guidelines

- Explain to the students the uses of Computer Graphics in the real life.
- Explain to the students the difference between Raster Graphics and Vector graphics.
- Read more about computer graphics in this website.
<http://www.allgraphicdesign.com/graphics/computergraphics101.html>

GIMP

Chapter 3 Introduction to GIMP

Objective:

- To learn about the use and features GIMP
- To learn about the parts of GIMP Workspace and their uses
- To learn about the various color modes supported by GIMP

Guidelines

- The GIMP is a Free and Open Source Software application covered by the General Public License. The GPL provides users with the freedom to download, access and alter the source code of the software.
- GIMP can be downloaded from <http://www.gimp.org>.



- Explain to the students the various features of GIMP.
- Point and explain the name and use of various parts of GIMP Workspace.
- Demonstrate to the students how to toggle between various color modes and window modes.
- You can read more about GIMP in this website.

<https://docs.gimp.org/en/introduction.html>

Chapter 4 Working with GIMP Files

Objective: To learn how to create, open, save and export images in GIMP

Guidelines

- Demonstrate to the students the following actions in GIMP
 - Creating New Image using various options in File Menu.
 - Opening an image in different ways using File Menu.

- Saving the file in three ways using File menu.
- Exporting the image in various formats.
- You can read more about the different File Menu options in GIMP in this website.

<https://docs.gimp.org/en/gimp-file-menu.html>

Chapter 5 Tools in GIMP

Objective: To learn about the different tools in GIMP and their use.

Guidelines

- Point and tell the name and use the various tools available in GIMP workspace.
- The various tools are categorized based on their use and are available under different menus.
- You can read more about the tools and their use in this website.

<https://docs.gimp.org/en/menus.html>

Chapter 6 Creating Images in GIMP

Objective: To learn how to use the different tools in GIMP to create images.

Guidelines

- Demonstrate the following actions to the students
 - Applying Background color using the **Foreground/Background indicator, Gradients or Patterns.**
 - Drawing shapes or to selecting part or whole of the image using Select tools.
 - Adding text to image using Text tool.
 - Saving and exporting the image.
- You can read more about the selection tools in GIMP in this website.

<https://docs.gimp.org/en/gimp-tools-selection.html>

Chapter 7 Image Enhancement with GIMP

Objective: To learn how to modify images by applying different special effects and transformations using GIMP tools.

Guidelines

- Demonstrate the following to the students in GIMP
 - Using various tools to change the color of the image
 - Converting an image to its negative or black and white
- Demonstrate to the students the use of different types of filters, the various options for each filter and the changes made on the images using them.
- Encourage the students to experiment with the filter tools and ask them to note down the observations.
- The **Preview** option has to be checked for the color and filter tools to view the changes in the image before confirming with **OK** button.
- Demonstrate to the students how to create **animation** from images in GIMP using animation filters.
- You can read more about filters in GIMP in this website.

<https://docs.gimp.org/en/gimp-filters-menu.html>

Chapter 8 Programming Concepts

Objective:

- To learn about the basics of software concepts.
- To learn about various programming languages and translators.
- To learn about program development life cycle.

Guidelines

- Explain to the students the following concepts
 - Hardware and Software

- Computer program and programming
- Three levels of programming languages
- Compiler and interpreter
- Phases in program development
- You can read more about the software concepts in the website.
http://www.rcppmail.org/Fundamental/software_concept.htm

Chapter 9 Algorithm

Objective:

- To learn about the use of algorithm and their properties.
- To learn about two types of algorithm – pseudocode and flowchart.
- To learn about different types of programming statements.

Guidelines

- Explain to the students the use, properties and examples of algorithm.
- Discuss the different algorithms used in various games and apps.
- Ask the students to find information about any popular algorithm and its use and write/ talk about it.
- Discuss and differentiate the use of two tools of algorithm – Flowcharts and Pseudocode.
- Explain the three types of programming statements and their use.
- Ask students to write pseudocode and draw flowcharts for various algorithms.
- You can read more examples of algorithms and programming statements in the website.

<https://www.dyclasroom.com/flowchart/exercise-1>

C++

Chapter 10 Introduction to C++

Objective:

- To learn about programming paradigms and their types.
- To learn about the various phases of C++ program.
- To learn about the basic structure of C++ program

Guidelines

- Explain about programming paradigms and their types used in developing programs.
- Explain about the various phases in developing, compiling and executing a C++ program.
- Demonstrate the use of Dev-C++ for compiling and running a C++ program.
- Orwell **Dev-C++** is a free full-featured integrated **development** environment (IDE) distributed under the GNU General Public License for programming in C and C++.
- To install the Dev-C++ software,
 - Download Dev-C++ from <https://sourceforge.net/projects/dev-cpp>.
 - Double click on the setup exe file.
 - Follow the setup instructions.
- Explain the different components and sections of a C++ program and their use.
- Read about the basic structure of C++ program in the website http://www.cplusplus.com/doc/tutorial/program_structure/
Read about how to use Dev C++ in the website https://en.wikiversity.org/wiki/Installing_and_using_Dev-C%2B%2B

Chapter 11 Basic Elements of C++

Objective:

- To learn about character set, variable and constants in C++.
- To learn about the basic data types supported by C++.
- To learn about the various operators provided by C++ to perform various calculations and operations on variables.

Guidelines

- Explain to the students the following concepts in C++
 - Characters supported by C++
 - Different types of constants
 - Rules for naming variables
 - Different data types supported by C++
- Demonstrate the following concepts to the students
 - Declaring a variable
 - Using various operators on variables
 - Getting input and sending output to screen using cin and cout commands
- Ask students to write and execute simple programs to learn the use of various data types and operators.
- You can read more about C++ variables, data types , operators etc in the website

<https://beginnersbook.com/2017/08/c-plus-plus-tutorial-for-beginners/>

CLASS 9

Visual Basic

Chapter 1 Introduction to Visual Basic

Objective:

- To learn about GUI.
- To learn about VB and VBA IDE.
- To learn about creating, saving and running forms in VB project.

Guidelines

- Demonstrate to the students how to open VBA from Microsoft Excel.
- If Microsoft Office is already installed in your computer, we can use the built-in **Visual Basic Application in Excel** to create the Visual Basic programs.
- Point out the different parts of the VBA window and explain their use.
- Demonstrate to the students how to perform the following actions.
 - Making the hidden panels visible using View Menu
 - Adding a new form
 - Running a form
 - Exporting and Importing a form
 - Saving a VB project
- You can read more about VBA in this website

<https://www.guru99.com/vba-tutorial.html>

Chapter 2 Tools in Visual Basic

Objective:

- To learn about the controls available in the Toolbox in VBA and their use.
- To learn about events and how to add them using Code window in VBA.
- To learn about how to change background color of form.
- To learn how to activate an event in VB form.

- To learn the use of MsgBox command
- To learn the use of CommandButton, Image, Label and TextBox controls in VBA.

Guidelines

- Point and tell the name and use of the controls in the VBA toolbox. Ask the students to draw the tools and write their name.
- Demonstrate the following actions to the students
 - Adding events using Code Window
 - Changing background of the form
 - Displaying message dialog box
 - Using CommandButton to execute code
 - Displaying pictures using Image control
 - Displaying text and numbers using Label control
 - Accepting input from user using TextBox control
 - Putting comments in the code
- Encourage the students to experiment with the different properties of the controls to change the foreground/background color, height, width, border, font etc.
- You can read more on the use of the tools in the website.

<https://msdn.microsoft.com/en-us/vba/language-reference-vba/articles/toolbox>

Chapter 3 Programming in VB

Objective:

- To learn about the programming fundamentals of Visual Basic.
- To learn about the variables, data types and operators in VB.
- To learn about the control statements used in VB code.

Guidelines

- Explain and demonstrate the following concepts to the students.
 - Using variables in VB programming.
 - Data types supported by VB.
 - Operators supported by VB.
 - Controls statements used to write VB code.
- Ask the students to practice the use of the different types of Do-Loop.
- Read more about data types, operators and control statements in VB programming in this website.

<https://www.guru99.com/vba-data-types-variables-constant.html>

<http://www.excelfunctions.net/VBA-Operators-And-Functions.html>

<https://analysistabs.com/excel-vba/conditional-statements/>

Chapter 4 Selection Controls in VB

Objective: To learn how to add the selection controls to the VB form and to use their properties in the code.

Guidelines

- Demonstrate to the students the following actions in VBA
 - To add an OptionButton control to the form and find the selected option.
 - To add a Frame control to the form to hold a group of controls.
 - To add a CheckBox control to the form and find the selected options.
 - To add a ListBox control to the form, add Items to the ListBox and find the selected items.
 - To add a ComboBox control to the form, add Items to the ComboBox and find the selected items.
- The ComboBox control in VBA toolbox has only two styles- Dropdown Combo and Dropdown List.

- Demonstrate to the students how the List box and ComboBox behaves for different values of the MultiSelect Property and Style Property, respectively.
- You can read about the selection controls in VBA in this webpage.

<http://excelvbatutor.com/index.php/excel-vba-lesson-23-listbox-combobox/>

Macromedia Flash

Chapter 5 Introduction to Macromedia Flash

Objective:

- To learn the basic terminologies related to computer graphics.
- To learn about Macromedia Flash, the different components of Flash Workspace and their use.
- To learn about the various tools in Flash and their uses.

Guidelines

- The lessons and snapshots included in this text book are based on the version, **Macromedia Flash 8 Professional**.
- **You can download Flash 8 from the website.**
<https://qpdownload.com/macromedia-flash-8/>
<https://qpdownload.com/macromedia-flash-8/>
- Demonstrate to the students how to launch Flash in their computer.
- Point and tell the name and use of the parts of Flash Workspace and the various Flash tools.
- You can read more about Flash workspace and tools in this website.
<http://www.teacherclick.com/flash8/index.htm>

Chapter 6 Using Flash Tools

Objective: To learn how to work with various tools in Flash.

Guidelines

- Demonstrate to the students the following actions in Flash
 - To create a new file, open existing files, save and publish the file into other file formats
 - To change the Stage Properties
 - To draw a circle/oval
 - To align objects on stage
 - To draw a straight or freeform lines
 - To add or apply fill color to shapes and objects
 - To apply gradient transform
 - To use Free Transform tool
 - To draw a polygon/polystar
 - To group and ungroup objects
 - to add text to the Flash animation
 - To use Webdings font for adding graphics
- You can read more about the use of the drawing and text tools in this webpage.

http://www.teacherclick.com/flash8/t_4_1.htm

http://www.teacherclick.com/flash8/t_5_1.htm

Chapter 7 Animations in Flash

Objective: To learn to create different types of animations in Flash.

Guidelines

- Explain to the students the use of Timeline, keyframes and layers in Flash animation.
- Demonstrate to the students the following actions in Flash
 - Add a Blank/ Keyframe in the timeline
 - To delete frames from the timeline

- To create, rename, move, copy , delete, lock and hide layers
- Explain to the students the different types of animations in Flash.
- Demonstrate to the students the following action in Flash
 - To Import an image to the stage
 - To create Frame-by-Frame animation by adding keyframes
 - To run the flash movie
 - To adjust the speed of the animation
- Explain and demonstrate the use of brush tool and the different brush modes.
- Demonstrate to the students how to create Shape Tween and Motion Tween animations.
- You can read more about flash animations in this website.
http://www.teacherclick.com/flash8/t_14_1.htm

Chapter 8 Symbols in Flash

Objective: To learn how to create and use different types of Symbols in Flash to reuse the graphics and reduce the file size.

Guidelines

- Explain to the students the three types of symbols – Graphic, MovieClip and Button.
- Demonstrate to the students how to insert a new symbol and to Convert a Flash object to a symbol
- Explain and demonstrate the use of Motion path to move a symbol in a specific path and also to use the Rotate option of Motion Tween
- Explain and demonstrate how to create a button symbol and the use of the four frames - **Up, Over, Down** and **Hit**.
- Explain and demonstrate the use of Swifty font to animate a human figure and also to edit multiple frames at the same time.
- You can read more about the symbols in flash in this website.
http://www.teacherclick.com/flash8/t_9_1.htm

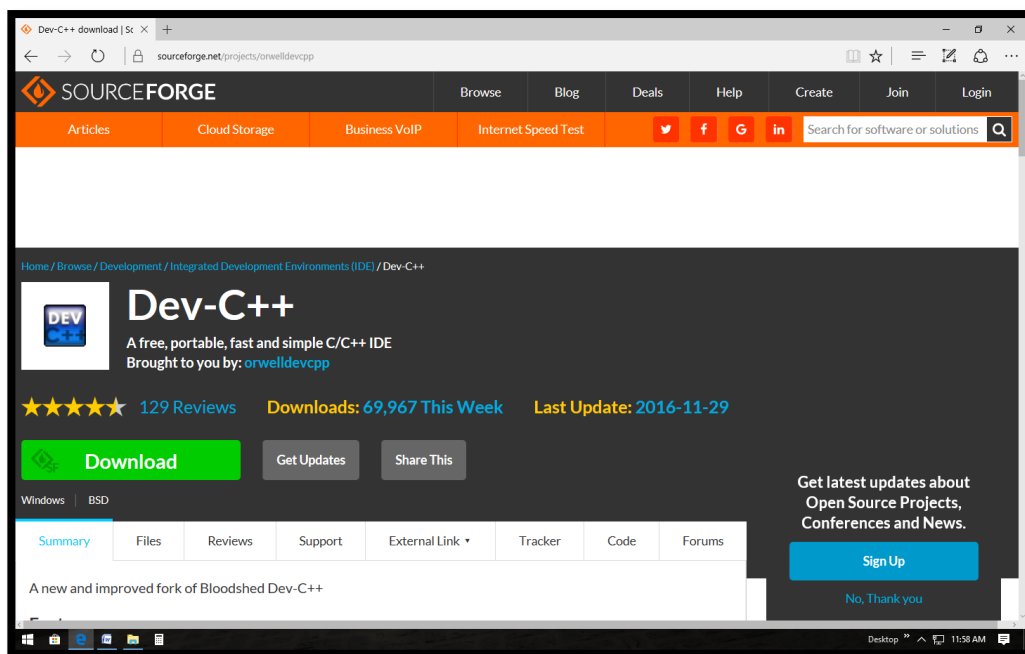
C++

Chapter 9 Program Statements in C++

Objective: To learn about the different types of programming statements in C++.

Guidelines

- We already covered the basic elements of C++ including the various data types and operators in Class 8 Textbook. Refer Class 8 textbook for the use of operators and data type in C++.
- Orwell **Dev-C++** is a free full-featured integrated **development** environment (IDE) distributed under the GNU General Public License for programming in C and **C++**.
- To install the Dev-C++ software,
 - ☞ Download Dev-C++ from <https://sourceforge.net/projects/orwelldevcpp/>



- ☞ Double click on the setup exe file.
- ☞ Follow the setup instructions.
- ☞ Start Dev-C++ using the Start menu or desktop shortcut.
- ☞ To open a new file , select the **New** option in the **File** Menu.
- ☞ To compile the program, click on the **Execute** menu and select the **Compile** option OR press the keyboard shortcut key **F9**.

☞ To run the program, click on the **Execute** menu and select the **Run** option
OR press the keyboard shortcut key **F10**.

- Demonstrate to the students how to use the C++ editor to open, edit, save, compile and run the programs.
- Explain and demonstrate the use of sequential, condition and looping statements in C++.
- Explain and demonstrate the use of String class in C++ to store words and sentences.
- You can read more about writing C++ code using different programming statements in this web page.

<http://www.cplusplus.com/doc/tutorial/control/>

Chapter 10 Data Structure and Functions in C++

Objective: To learn about using functions and various data structures in C++.

Guidelines

- Explain and demonstrate to the students how to use Array data structure to store collection of elements of same data type.
- Explain and demonstrate the use of functions to divide the programs in to logical segments of code.
- Explain and demonstrate the use of Structure combine and store data items of different types.
- You can read more about data structures and functions in C++ in the website.

<http://www.cplusplus.com/doc/tutorial/arrays/>

<http://www.cplusplus.com/doc/tutorial/structures/>

<http://www.cplusplus.com/doc/tutorial/functions/>

CLASS 10

Chapter 1 Database Concepts

Objective:

- To learn about the role of database in organizing the data in an efficient and meaningful way.
- To learn about DBMS and their different types
- To learn about DMBS architecture

Guidelines

- Discuss with the students about the following topics:
 - Examples of data and information around us.
 - Examples of database around us such as textbook, library catalogue, and attendance register
- Ask the students to find out about the popular DBMS products used in the industry today.
- Explain to the students the different types of DBMS.
- Draw and explain DBMS architecture.
- You can read about DBMS in the website.

<https://www.studytonight.com/dbms/overview-of-dbms.php>

<https://www.studytonight.com/dbms/database-model.php>

Chapter 2 Entity-Relationship

Objective:

- To learn about E R Model and how it is used for designing a database.
- To learn how to draw E R diagram to represent entities and relationships
- To learn about RDBMS and how it is used to store data in the form of tables.

Guidelines

- Discuss with the students about the various entities that exist around us, their attributes and the types of relationship between the entities.
- Explain E R model and its components
- Explain and demonstrate E R diagram to represent entity and relationship
- Explain different types of relationships using cardinalities.

- Explain about RDBMS and the various terms used like table, field, record and key.
- You can read about ER model and RDBMS in this website.

<https://www.studytonight.com/dbms/er-model-concepts.php>

<https://www.studytonight.com/dbms/rdbms-concept.php>

SQL

Chapter 3 Introduction to SQL

Objective:

- To learn about the different SQL statements and their use.
- To learn about the use of different SQL constraints
- To learn about the different data types supported by SQL.

Guidelines

- Explain the use of different types of SQL commands, constraints and data types to the students.
- You can read more about SQL constraints, data types and commands in the website.

<https://www.studytonight.com/dbms/introduction-to-sql.php>

<https://www.studytonight.com/dbms/sql-constraints.php>

<https://www.w3resource.com/sql/data-type.php>

Chapter 4 Programming in SQL

Objective:

- To learn to write and execute SQL statements to add, retrieve and modify data in a database.
- To learn to execute query in SQLiteStudio.

Guidelines

- SQLite is the most deployed database engine in the world and is widely used by browsers, operating systems and embedded systems (such as mobile phones).
- SQLiteStudio, which is a SQLite database manager, has been used to execute the different SQL commands specified in the textbook. However, the SQL commands will work in any other database engine like MS SQL server, MySQL etc.
- **SQLiteStudio** is a free, open source **SQLite database manager** released under **GPL** license. It doesn't require any installation. The tool can be launched by running the executable file available as part of the download.
- SQLiteStudio can be downloaded in the Windows binary version from the official website- <https://sqlitestudio.pl/index.rvt>.



- The downloaded file is in the ZIP format. Extract the files in to a folder in your computer.
- Demonstrate to the students the following actions in SQLiteStudio
 - Starting the SQLiteStudio application
 - Adding a new Database

- Connecting to a Database
- Opening the SQL Editor
- Executing a query in the SQL Editor
- Viewing the results and errors.
- Demonstrate to the students the use of the following SQL commands
 - Creating a Database
 - Removing a Database
 - Creating a Table
 - Removing a Table
 - Modifying the Table Definition
 - Adding Rows to a Table
 - Retrieving or displaying Data from a Table
 - Modifying Data in a Table
 - Removing Rows from a Table
- You can read more about SQL commands in the website.
<http://beginner-sql-tutorial.com/sql-commands.htm>

Chapter 5 SQL Clauses

Objective:

- To learn the use of some commonly used SQL Clauses.
- To learn how to use the SQL Group functions
- To learn about the use of Foreign key constraint
- To learn how to join tables to retrieve data

Guidelines

- Demonstrate to the students the use of the following SQL clauses
 - ORDER BY
 - DISTINCT
 - LIKE
 - AND and OR Operators
 - BETWEEN Clause
 - IN Clause

- Explain and demonstrate the use of SQL Group functions which return one value for the entire group
- Explain and demonstrate the use of FOREIGN KEY constraint to link tables.
- Explain and demonstrate how to join tables to retrieve data.
- You can read more on group functions and join in this website.

<https://www.studytonight.com/dbms/sql-function.php>

<https://www.studytonight.com/dbms/joining-in-sql.php>

JAVA

Chapter 6 Introduction to Java

Objective:

- To learn about the fundamentals of Java language.
- To learn about the uses of Java in the real life applications
- To know about the various features of Java

Guidelines

- Explain to the students the following concepts
 - POP & OOP
 - Origin of Java
 - Uses of Java
 - Features of Java
 - Differentiation of JRE, JVM & JDK
- You can read more about java in the website
 - <https://www.studytonight.com/java/overview-of-java.php>
 - <https://www.studytonight.com/java/features-of-java>
 - <https://www.studytonight.com/java/component-of-java>

Chapter 7 Object Oriented Programming

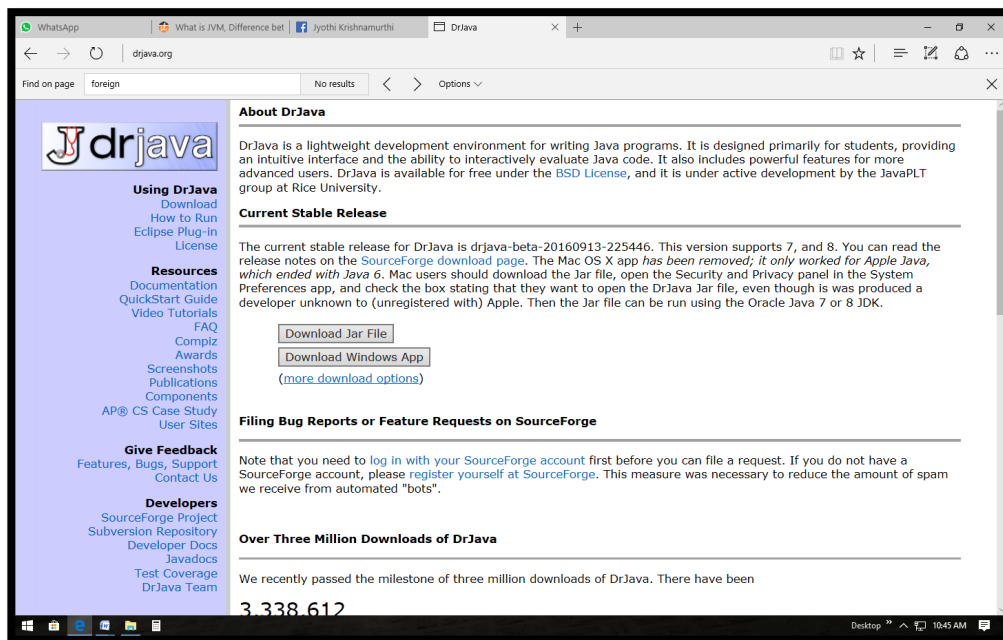
Objective

- To learn about the basic concepts of Object Oriented Programming.
- To learn how to work in Dr. Java to create and execute java programs.

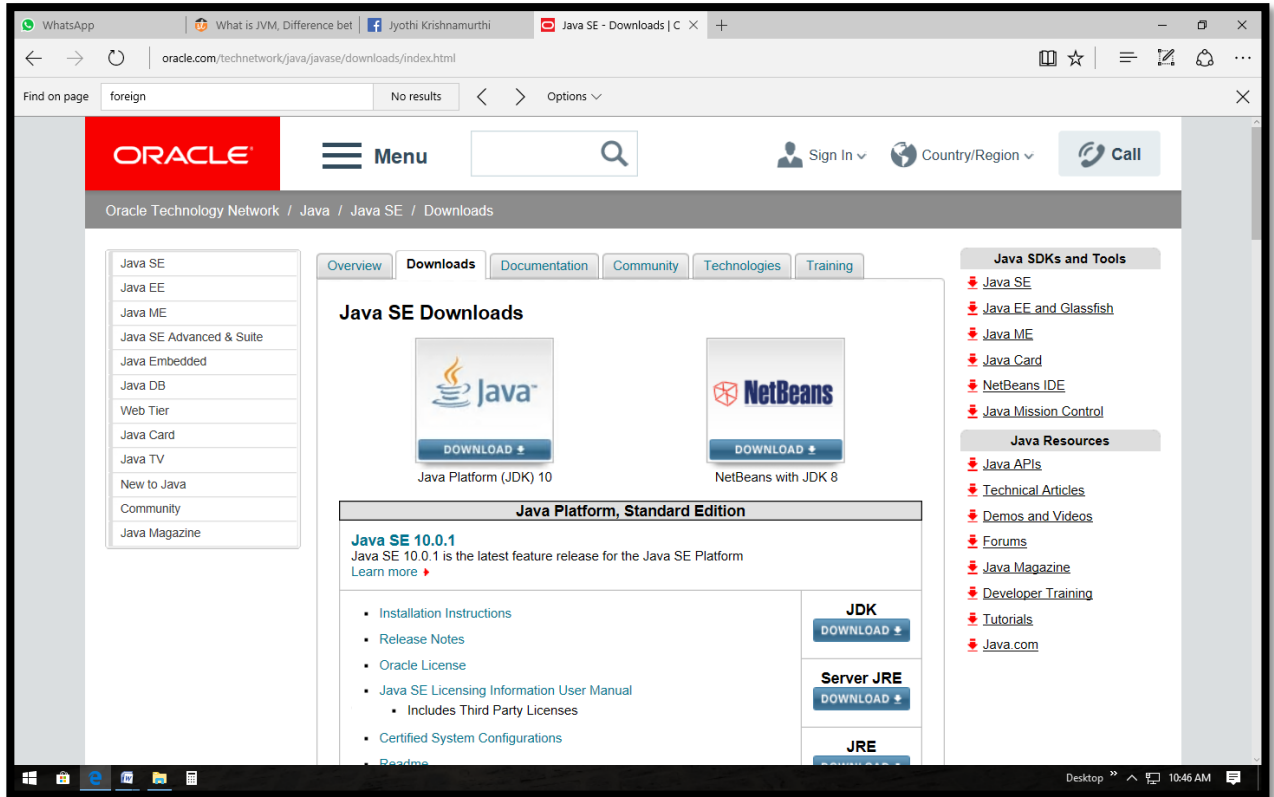
- To learn about basic syntax and structure of Java programs.

Guidelines

- Explain to the students various examples of class and objects around us. For example, Company is class and a specific company, like Infosys is an object.
- Explain the concepts of Encapsulation, Abstraction and Inheritance. For example, from the super class Company, we can derive sub classes for different types of company like IT, Textiles, Electronics etc.
- Explain the basic syntax and structure of Java programs.
- **DrJava** is a lightweight development environment for writing Java programs. It is **designed primarily for students**, providing an intuitive interface and the ability to interactively evaluate Java code. DrJava is available for free under the BSD License, and is developed by the JavaPLT group at Rice University.
- The jar file can be downloaded from the official website <http://www.drjava.org/>. We can simply double-click the jar file to start DrJava or we can create a shortcut to the jar file on the desktop.



- You need to have **JDK and JRE** installed in the system to run DrJava and to develop Java applications. You can download JDK from the official Oracle website:
<http://www.oracle.com/technetwork/java/javase/downloads/index.html>



- Demonstrate to the students the following in Dr Java
 - Opening Dr Java
 - Writing and saving a program in Dr Java
 - Compiling and running a program
- You can read more about using Dr Java , OOP concept and Java syntax in this website

<http://www.drjava.org/docs/quickstart/>

<https://www.studytonight.com/java/object-and-classes.php>

<https://www.studytonight.com/java/first-java-program>

https://www.tutorialspoint.com/java/java_basic_syntax.htm

Chapter 8 Fundamentals of Java

Objective

- To learn about data types, operators and control structures in Java, which are very much similar to C++.
- To learn about Math class and their methods
- To learn about String class and their methods

Guidelines

- The data types, operators and control structures supported by Java are similar to C++. We have already covered about the variables, data types, operators and control structures in C++ in Class 8 and Class 9. Refer the Computer Creations Class 8 and 9 for further details.
- Explain and demonstrate the following concepts to the students
 - Primitive data types supported by Java and their use
 - Different operators provided by Java and their use
 - Control statements in Java
 - Use of Math class and the methods in it
 - Use of String class and the methods in it.
- Demonstrate the precedence of java operators using various expressions.
- You can read more about data types, operators, control statements, Math and String class in the website.

<https://www.studytonight.com/java/datatypes-and-identifier>

<https://www.studytonight.com/java/operators-in-java>

https://www.tutorialspoint.com/java/java_loop_control.htm

https://www.tutorialspoint.com/java/java_decision_making.htm

https://www.tutorialspoint.com/java/java_strings.htm

https://www.tutorialspoint.com/java/lang/java_lang_math.htm

Chapter 9 Working with Java Objects

Objective:

- To learn how to create objects from class and use their members and methods.
- To learn about different types of constructors

- To learn how to accept user input from console in Java program
- To learn how to send data through command line arguments
- To learn how to use array in Java program

Guidelines

- Explain and demonstrate to the students how to do the following in Java
 - Design a Java class
 - Create an object from a class
 - Use the class and object in the program
 - Use of constructors
 - Input data through console in java program
 - Send data via command line while executing
 - Use Interaction tab in Dr java to run program
 - Use array to store sequence of data in java program

You can read more about working with class and object in java in the website.

<https://www.studytonight.com/java/constructor-in-java.php>

<https://www.studytonight.com/java/command-line-argument>

<https://www.studytonight.com/java/array>

<https://www.geeksforgeeks.org/scanner-class-in-java/>

Chapter 10 Polymorphism and Inheritance

Objective: To learn how to incorporate inheritance and polymorphism in Java programs.

Guidelines

- Explain the concept of Inheritance and Polymorphism using real life objects like people, company, product, vehicle etc.
- Ask students to come up with various variables and methods for the above classes.
- Demonstrate to the students the concept of compile time and run time polymorphism using method overloading and method overriding in Java programs.

- Demonstrate the use of inheritance by creating sub classes from parent class using extends keyword.
- You can read about polymorphism and inheritance in the website.

<https://www.studytonight.com/java/inheritance-in-java.php>

<https://www.studytonight.com/java/method-and-overloaded-method>

<https://www.studytonight.com/java/method-overriding-in-java>

<https://www.studytonight.com/java/dynamic-method-dispatch>