Computer Studies

The Core Concepts of Computer Studies for Class VI are as follows:

Class VI

Categories of Computer and Computer Languages

File Management – Organisation of Data

Word Processor – Tabular Presentation

Presentation – Visual Effects

Scratch Programming

Internet – Online Surfing

Topic 1: Categories of Computers and Computer Languages

This theme focuses on computers and computer languages. Computers are categorized based on the basis of (i) generation, (ii) type, (iii) purpose and (iv) size, speed, processing power and price. The aim of this theme is to enable children to communicate with the computer, by using specific languages that are broadly into three categories, i.e., machine language, assembly language and higher level language. They will also become aware of all the different operations performed by a computer which are controlled by computer programs written in a computer programming language.

Learning Outcomes:

Children will be able to:

- classify computers into different categories;
- differentiate between computers on the basis of RAM size, Storage capacity, CPU speed, etc.;
- describe a Computer Language.
- explain the evolution of computer languages with their features;
- differentiate between different computer languages;
- explain the importance of 4GLs;
- explain the working of translators by differentiating between an interpreter and compiler.

Categories of Computer and Computer Languages		
Key Concepts	**Suggested Transactional Processes**	**Suggested Learning Resources**
• Categories of computers: basic features of microcomputers, mini computers mainframes, supercomputer, mobile, game consoles, embedded computer. • Types of computer languages. • Features of Low level language (Machine language. Example: binary language) • Features of Assembly language. • Features of High level languages. Example: C, C++, Java. • Features of 4GLs. • Translator and its types (Interpreter, Compiler); • Working of Translators (briefly).	• Revisiting and reviewing children's previous learning and building on their experiences. • Revising the basic features of a computer with children. • Questioning children to identify various types of computers observed in their surroundings. • Discussing with children different categories of computers (definition and basic features of microcomputers, mini computers mainframes, supercomputer, mobile, game consoles, embedded computer). • Explaining computer languages - Low level language, Assembly language and High level languages. • Discussing and explaining the evolution of computer languages. • Demonstrating the working of a Translator and its types.	• Presentations/ Videos/ Comparative charts. • Computer/ IWB with presentation software. • Hands on experience /activity • Interactive class resources • Projector, etc. • Discussion on computer languages

Topic 2: File Management – Organisation of Data

Building on children's previous learning in primary classes this Topic covers additional and advanced features on file management which will enable them to organise data better. It is important to understand file format as it makes the task of file management easier. In file management the focus of this   theme is that they develop the ability to undertake common operations on stored files such as editing, viewing, copying, playing, moving and deleting files enable better management, access and retrieval/ sorting of files by type, name, size, date (created or modified). File management will also help them to transfer data from one device to another and work with multiple applications at the same time. Understanding of a file format is important as it makes the task of file management easier.

Learning Outcomes:

Children will be able to:

☑ move/copy data from one drive to another drive;
☑ move/copy data between storage devices (pen drive, C.D. hard disc);
☑ use two or more applications at the same time;
☑ search files and folders;
☑ compare different file formats.

File Management – Organisation of Data		
Key Concepts	**Suggested Transactional Processes**	**Suggested Learning Resources**
❯ Transfer of data from one device/drive to another device/ drive ❯ Work with multiple applications ❯ Search for files using wild card characters ('?', '*') ❯ Various file formats such as JPEG, MP3, MP4, doc. XLS	❯ Giving opportunities for hands on activities for transferring data from one drive/ device to another drive/ device/ ❯ Demonstrating with an example of listening to music while searching for information on Internet. ❯ Explaining the difference between wild card characters by using a games like a puzzle ❯ Correlating the file ❯ extensions with the type of file	❯ Computer/ IWB with presentation software. ❯ Hands on activity. ❯ Internet. ❯ Videos. ❯ Projector. ❯ Group discussion / activities.

Life Skills: organisation skills

Topic 3: Word Processor - Tabular Presentation

One of the most common but an important formatting feature of the word processor is 'Tables'. Tables are a method of presenting data in a document, in rows and columns. Blank tables can be inserted or drawn. A table can be simple (based on a metrics) or complex (having different number of rows in columns or vice versa). Intersection of a row and column is a cell. After entering data in a table, it can be modified as per the requirement.

Learning outcomes:

Children will be able to:

- define table;
- create a table and enter data in the table;
- edit a table;
- format the row/ column/table;
- apply borders and shading in tables.

Word Processor – Tabular Presentation		
Key Concepts	**Suggested Transactional Processes**	**Suggested Learning Resources**
▷ Define a table in terms of rows and columns. ▷ Create and edit tables. ▷ Insert and delete rows and columns in a table. ▷ Enter data. ▷ Change row height and column width. ▷ Split and merge cells. ▷ Apply borders and shading. ▷ Resize tables. ▷ Align text.	▷ Providing children opportunities to: Explain a table and work on how it can be created in a document. ▷ Providing every child hands- on experience and involving them in creating and formatting tables based on everyday requirements such as- creating a class time-table, study schedule for the month, marks obtained in the term examination, etc.	▷ Computers/ IWB with presentation software and Word Processor. ▷ Hands on activity ▷ Projector.

Topic 4: Presentation – Visual Effects

Presentation software is an application software that aims at enabling children to access their ideas easily while making a presentation through slide shows. It also provides the audience with visual information. They will understand appreciate how presentations can be made more attractive and interactive by using animations, sound, video, etc.

Learning outcomes:

Children will be able to:

- demonstrate different ways of viewing a presentation;
- present a Topic in an attractive manner by using different objects;
- enhance the presentation by applying transitions and custom animations;
- navigate between slides during a slide show;
- import data from other applications.

Presentation – Visual Effects		
Key Concepts	**Suggested Transactional Processes**	**Suggested Learning Resources**
➤ Need for different views in a presentation. ➤ Working with different views (normal, slide sorter, slide master, slide show) to view a presentation. ➤ Apply animation effects through custom animation ➤ Add transitions to slides. ➤ Use of a media clip and action buttons. ➤ Insert media clips (movie and sound)/ action buttons in the presentation. ➤ Import data from other applications.	➤ Demonstrating to children the advantages of using normal, slide sorter, slide master, slide show by using an existing presentation. ➤ Involving the children in a discussion to highlight how a presentation can be enhanced by using a media clip/ transitions/ animations and action buttons. ➤ Organising hands on activities for each child to: insert different objects; apply slide transition and custom animation; use action buttons to navigate between slides.	➤ Computers/ IWB with presentation software. ➤ Projector. ➤ Animation related activities. ➤ Presentation on media clip. ➤ Hands-on activities / experiences

Life Skills: Presentation skills, creativity

Topic 5: Scratch Programming

In previous learning of the Topic on 'Scratch' children learnt how to handle basic motion block. This Topic aims at enabling children to handle and work with looks, control pen, and sound blocks of Scratch programming.

Learning outcomes:

Children will be able to:

- handle commands of different blocks.

Scratch Programming – Introduction to Game Creation		
Key Concepts	**Suggested Transactional Processes**	**Suggested Learning Resources**
⯈ Revision from previous class. ⯈ Changing sprites, images, shapes. ⯈ Working with Multiple sprites ⯈ Use of different blocks like Looks, Motion, Control, Pen and Sound.	⯈ Explaining the working of Blocks like Looks, Motion, Control, Pen and Sound.	⯈ Computers/ IWB with Scratch software.

Life Skills: Collaborative learning

Topic 6: Internet – Online Surfing

Internet is the largest wide area network. It provides us many facilities and services. In this chapter we will discuss internet services such as E-mail, E-commerce, Blogging, Podcasting and Google drive (to store and share data). The focus of this topic is to develop children's interest, understanding of and ability to use the Internet in simple ways.

Learning outcomes:

Children will be able to:

- communicate through e-mail;
- store and share data using google drive;
- explain online services of e-commerce;
- create a blog;
- express views/ opinions through blogs;
- differentiate between a website and a blog;
- create a podcast.

Internet – Online Surfing		
Key Concepts	**Suggested Transactional Processes**	**Suggested Learning Resources**
➤ Features to be kept in mind while using the internet services – following netiquette; being aware of potential threats in the cyber world. ➤ E-mail: introduction; features; advantages; composing and sending e-mail, attachments, cc, bcc, inbox, outbox, trash, spam, logging in and out. ➤ Google Drive: introduction; using the drive: upload, organise and share. ➤ E-commerce: an understanding of E-commerce as online buying and selling of goods and services. ➤ Online modes of payment: credit card, debit card, e-money. ➤ Blogging and Podcasting: meaning purpose and uses.	➤ Having an open discussion with children on their experiences while surfing the internet, what they liked and did not and issues they faced if any. ➤ Discussing and debating with children on: • potential threats while using the internet • importance of netiquettes. • evolution of communication by comparing earlier modes with the modern modes and advantages and disadvantages of each. ➤ Demonstrating how to: • send an e-mail, with bcc, cc, attachments. • use the Google Drive and explaining the process of uploading and sharing data through it ➤ Introducing E -commerce by discussing the different modes online buying and selling ➤ Discussing with children the following: • advantages and disadvantages of online shopping • online modes of payment • the difference between a website and a blog ➤ Introducing the concept of podcast by giving real life examples of use of podcast in news ➤ Providing opportunities for hands on activity through projects and individually on the internet, google, website and blog.	➤ Computers/ IWB with presentation software ➤ Use of internet in conducting activities ➤ Hands on experiences working on various functions of internet. ➤ Use of google drive ➤ Use of website and blog

Life Skills: Organisation skills