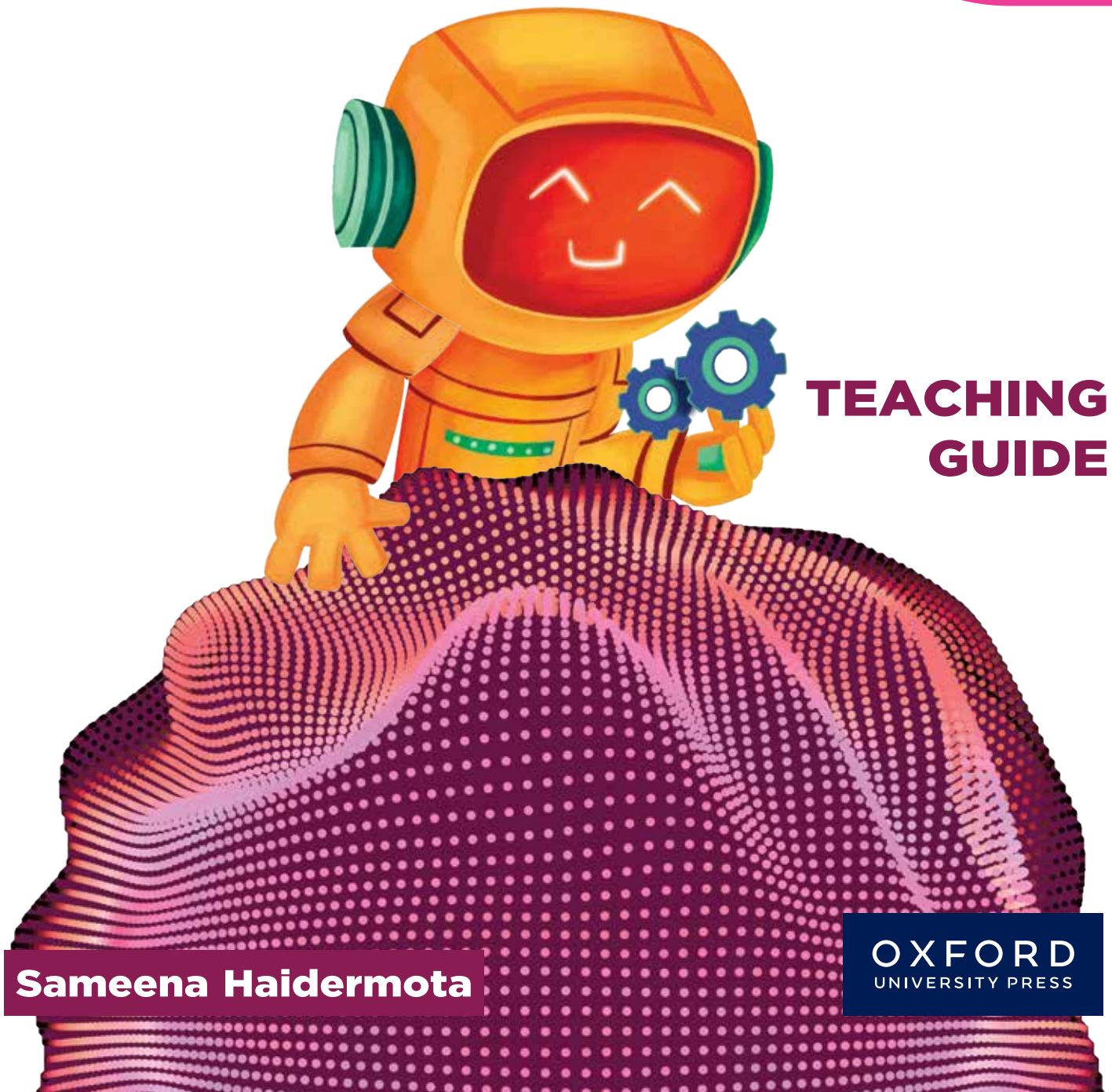
COMPUTER WHIZ 4

Fourth Edition



TEACHING GUIDE

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OXFORD UNIVERSITY PRESS

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Oxford University Press in the UK and in certain other countries

Published in Pakistan by
Oxford University Press
No.38, Sector 15, Korangi Industrial Area,
PO Box 8214, Karachi-74900, Pakistan

First Edition published in 2005
Revised Edition published in 2010
Third Edition published in 2015
Fourth Edition published in 2025

ISBN 9786275223900

Introduction

Computer Whiz books 1-8 is a diligent attempt to provide the necessary knowledge, skills, and attitudes compatible with modern developments in computers and technology.

This guide is a collaborative effort, drawing insights from educational experts and the latest pedagogical approaches. It also maps the *Computer Whiz* primary series on Howard Gardner's theory of 'Multiple Intelligences'. Awareness of multiple intelligences promotes an inclusive classroom where all students feel valued and supported, regardless of their learning style.

Knowing about 'Multiple Intelligences' can significantly enhance teaching effectiveness by recognising and addressing the diverse ways in which students learn. Recognising and valuing different types of intelligence helps students feel appreciated for their unique abilities. This can boost their confidence and motivation to learn.

The content in each chapter is supported by

Word Whiz

Explains essential terminology used in the chapter.

1 Word Whiz

Lesson Plan

Step-by-step and interactive lesson plans that cater to diverse pupil needs

(Depending on available time, resources, and pupils' understanding, the ideas from these lesson plans can be redistributed among lessons. It is recommended to organise the class in such a manner that pupils get some practice time at the end of the class.)

2 Lesson Plans

Concept Cloud

Delves into additional/ optional information and intriguing analogies to deepen understanding.

3 Concept Cloud

Class Activity

Fosters an interactive classroom environment with our specially designed activities which are integrated into the curriculum.

4 Interactive Class Activities

Digital Resources

Lesson wise mapped digital resources provided on the Oxford University Website to enrich students' learning experience. These resources are accessible via QR codes at the back of the book.

5 Digital Resources

Homework

Suggested homework at the end of each lesson plan to reinforce the concepts.

6 Homework For Extended Learning

Answer Key

Potential responses to end-of-chapter questions, ensuring a well-rounded educational experience for your students.

7 Suggested Answers to End-of-Chapter Questions

TABLE OF CONTENTS

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Multiple Intelligences

Multiple Intelligences is a theory proposed by Howard Gardner in 1983, which suggests that intelligence is not a single, fixed attribute that can be measured solely by IQ tests. Instead, Gardner identified several distinct types of intelligences that individuals may possess in varying degrees.

The theory of multiple intelligences broadens the understanding of human capabilities and emphasises the importance of recognizing and nurturing diverse talents in educational settings. By acknowledging that intelligence is multifaceted, educators can create more inclusive and effective learning environments that cater to the unique strengths of each student.

Implications for education

Gardner's theory has significant implications for education. It suggests that teaching methods should be diversified to cater to different types of intelligences. Following are the types of intelligences:

Linguistic Learners might benefit from reading and writing activities.

Logical-mathematical Learners might excel with problem-solving tasks.

Spatial Learners might engage more with visual aids and diagrams.

Bodily-kinesthetic Learners might thrive in hand-on activities.

Musical Learners might enjoy learning through songs and rhythms.

Interpersonal Learners might prefer group work and discussions.

Intrapersonal Learners might benefit from self-reflective tasks.

Naturalistic Learners might enjoy learning through nature-related activities

How to assess multiple intelligence in students?

Assessing multiple intelligences in students involves using a variety of methods to identify their strengths and preferences across different types of intelligences. Here are some effective strategies:

1. Observations

- **Classroom Activities:** Observe how students engage in different activities. Note which tasks they excel in and enjoy the most.
- **Behavioural Patterns:** Pay attention to how students interact with peers, solve problems, and express themselves.

2. Surveys and Questionnaires

- **Self-Assessment Tools:** Use surveys where students can reflect on their own preferences and strengths.
- **Teacher-Designed Questionnaires:** Create questionnaires that ask about students' interests and activities outside of school.

3. Portfolios

- **Work Samples:** Collect samples of students' work across various subjects and activities.
- **Reflective Journals:** Encourage students to keep journals where they reflect on their learning experiences and achievements.

4. Performance Tasks

- **Projects and Presentations:** Assign projects that allow students to demonstrate their skills in different areas, such as creating a video, writing a report, or designing a model.
- **Hands-On Activities:** Use tasks that require physical manipulation, such as building, drawing, or conducting experiments.

5. Peer and Self-Evaluations

- **Peer Feedback:** Have students provide feedback on each other's work, focusing on different intelligences.
- **Self-Evaluation:** Encourage students to assess their own work and identify areas where they feel most competent.

6. Standardised Tests and Inventories

- **Multiple Intelligences Inventories:** Use standardised tools designed to measure multiple intelligences, such as the Multiple Intelligences Developmental Assessment Scales (MIDAS).

How to embed multiple intelligences in the lesson plans of Computer Whiz?

To embed multiple intelligences in the teaching and lesson plans of the Computer Whiz, you can incorporate various activities and strategies that cater to different types of intelligences. Here are some suggestions:

1. Linguistic Intelligence

- **Reading and Writing Tasks:** Include activities where students read instructions, write reflections, or create stories related to computer concepts.
- **Discussions and Debates**: Encourage students to discuss topics like the ethical use of technology or the impact of computers on society.

2. Logical-Mathematical Intelligence

- **Problem-Solving Activities:** Integrate exercises that involve coding, debugging, and logical reasoning.
- **Data Analysis:** Use tasks that require students to analyse data, such as creating graphs or interpreting computer-generated reports.

3. Spatial Intelligence

- **Drawing and Design:** Include activities that involve creating digital art using Paint or other graphic design software.
- **Visualization Tasks:** Use diagrams and flow charts to help students understand computer processes and networks

4. Bodily-Kinesthetic Intelligence

- **Hands-On Activities:** Incorporate tasks that require physical interaction with computer hardware, such as assembling parts or using input devices.
- **Movement-Based Learning:** Use role-playing or physical games to teach concepts like network topologies or data flow.

5. Musical Intelligence

- **Sound and Music Projects:** Include activities where students create or edit audio files, or use music software to compose digital music.
- **Rhythmic Learning:** Use songs or rhythms to help students memorise computer commands or sequences.

6. Interpersonal Intelligence

- **Group Projects:** Encourage collaborative projects where students work together to solve problems or create presentations.
- **Peer Teaching:** Use activities where students teach each other about different computer concepts.

7. Intrapersonal Intelligence

- **Self-Reflection:** Include journal entries or self-assessment tasks where students reflect on their learning and set personal goals.
- **Independent Projects:** Allow students to pursue individual projects that align with their interests in technology.

8. Naturalistic Intelligence

- **Environmental Context:** Use examples of how technology is used in environmental science or agriculture.
- **Nature-Inspired Projects:** Include activities that involve creating simulations or models related to natural phenomena using computer software.

Chapter Wise Mapping of Computer Whiz 4

This is a chapter-wise mapping of the book *Computer Whiz 4* to Howard Gardner's Multiple Intelligences, highlighting which activities or content support each type of intelligence among children:

Chapter 1: Operating Systems

- **Logical-Mathematical:** Understanding the structure and functions of operating systems.
- **Visual-Spatial:** Navigating and organising data on the desktop.
- **Bodily-Kinesthetic:** Hands-on activities with different operating systems.
- **Linguistic:** Describing features and functions of operating systems.
- **Intrapersonal:** Reflecting on the importance of operating systems in daily life.

Chapter 2: Communicating Through the Internet

- **Interpersonal:** Collaborating and communicating with others online.
- **Linguistic:** Writing emails and messages.
- **Logical-Mathematical:** Using and understanding different communication tools.
- **Visual-Spatial:** Navigating and using various online platforms.
- **Intrapersonal:** Reflecting on the impact of Internet communication.

Chapter 3: MS PowerPoint

- **Visual-Spatial:** Designing and organising slides.
- **Linguistic:** Writing content for presentations.
- **Bodily-Kinesthetic:** Using the software to create and manipulate presentations.
- **Logical-Mathematical:** Structuring information logically.
- **Intrapersonal:** Reflecting on the effectiveness of presentations.

Chapter 4: Google Sheets

- **Logical-Mathematical:** Using formulas and analysing data.
- **Visual-Spatial:** Creating and interpreting graphs.
- **Bodily-Kinesthetic:** Hands-on activities with spreadsheets.
- **Linguistic:** Describing data and results.
- **Intrapersonal:** Reflecting on the use of spreadsheets in organising information.

Chapter 5: Introduction to ScratchJr

- **Logical-Mathematical:** Understanding and applying programming concepts.
- **Visual-Spatial:** Designing characters and backgrounds.
- **Bodily-Kinesthetic:** Using the software to create animations.
- **Linguistic:** Writing scripts for characters.
- **Intrapersonal:** Reflecting on the process of creating a game.

Chapter 6: Digital Citizenship

- **Interpersonal:** Understanding and discussing online safety with others.
- **Linguistic:** Writing about online threats and safety measures.
- **Logical-Mathematical:** Analysing different types of online threats.
- **Visual-Spatial:** Designing posters on Internet safety.
- **Intrapersonal:** Reflecting on personal online safety practices.

Reflection

Reflection after chapter-wise lesson planning is vital for continuous improvement, better student understanding, personal and professional growth, and the creation of more effective and inclusive lesson plans. It transforms teaching into a dynamic and responsive practice, ultimately enhancing the overall educational experience.. Here are some key reasons why reflection is important:

Reflecting on each lesson helps teachers identify what worked well and what didn't. It provides valuable insights that can inform future lesson planning. Teachers can build on successful strategies and avoid repeating mistakes, leading to more coherent and effective lesson sequences.

Every classroom is diverse, with students having different learning styles and needs. Reflection helps teachers adapt their lessons to cater to this diversity, ensuring that all students have the opportunity to succeed.

While there are many reflection keys available online, attached here is a template that can be used with the Computer Whiz series lesson planning.

Reflection Key for Computer Studies

Chapter: _____ **Date:** _____

Key Competencies Checklist

1. Understanding Basic Concepts

- ☐ Can students explain the main concepts covered in this chapter?
- ☐ Do they understand the terminology used?

2. Practical Skills

- ☐ Are students able to perform the basic tasks and operations taught?
- ☐ Can they use the software or tools introduced in this chapter?

3. Problem-Solving

- ☐ Can students apply what they've learned to solve simple problems?
- ☐ Are they able to troubleshoot common issues?

4. Collaboration and Communication

- ☐ Do students work well in pairs or groups?
- ☐ Are they able to communicate their ideas effectively?

5. Creativity and Innovation

- ☐ Have students shown creativity in their projects or assignments?
- ☐ Are they able to think of new ways to use the tools and concepts learned?

6. Digital Citizenship

- ☐ Do students understand the importance of online safety and etiquette?
- ☐ Are they aware of the ethical use of technology?

Teacher's Notes

1. What went well in this chapter?

_____

_____

2. What can be improved in the next chapter?

_____

_____

3. Additional Comments:

_____

_____

01 OPERATING SYSTEMS

Teaching Objectives

Students will be able to:

1. define operating systems,
2. elaborate on the features of the different operating systems,
3. identify the operating systems cell phones use,
4. describe a user interface and explain how they help interact with the computer,
5. organise data in folders on the desktop.

Lesson plan 1

Resources

✓ Textbook pages 1-3

✓ Images of different OS on the softboard or a tablet or multimedia if available.

Starter activity (5 min)

✓ What operating systems have you heard of other than Windows?

✓ Can you open an app by tapping on it?

Reading and explanation (20 min)

Read pages 1, 2 and 3.

Explain that the operating system helps the computer to do things such as open programs, save files, and connect to the internet. It helps you open apps, move things around, and turn the computer on or off. Windows or Mac are all operating systems. Discuss how the operating system helps when playing a game or organising your files. When you click on a program or drag an icon to the trash, the OS helps manage things.

Describe Microsoft Windows as an operating system that is used to create, connect, and learn. Multiple windows can be used simultaneously, allowing people to multitask. People can communicate through text, chat, voice or video.

Enlist the main features of Windows:

1. Start Menu provides access to different programs installed on the computer.
2. Desktop, a display area that has all the tools that are required to manage and organise files.
3. Control Panel allows you to view and change the system settings, add or remove hardware and software, control user accounts, and access network settings.
4. Recycle Bin, a temporary storage space for files and folders that are no longer needed and have been deleted.

WORD WHIZ	
Multitask	Execute more than one program or task simultaneously.
Platform	A system that allows software to run on a computer or hardware device
Widget	An app or a component of an interface, that allows a user to perform a function or access a service.

DIGITAL RESOURCES

1. Video - Operating Systems
2. Worksheet - Operating Systems

Conclusion (5 min)

Ask:

✓ What would happen if the computer did not have an operating system?

✓ Can you recollect what jobs the operating system do?

Homework assignment

✓ The children are instructed to complete Whiz Tasks (Pg 3) at home.

WORD WHIZ

Access	Obtain or retrieve computer data or file
Display	An electronic device for the visual presentation of data or images
Temporary	Lasting for only a limited period of time

CONCEPT CLOUD

How do operating systems help manage technology effectively in the classroom?

An operating system (OS)

- enables all computing devices to function. Without an OS, devices wouldn't be able to run apps, save work, or connect to the Internet. Teachers use operating systems to control software, handle digital homework and projects and correspond with students and parents.
- makes it easy to manage devices and perform tasks such as set up, organization of files, and installation of software when using technology in the classroom.
- allows you to use multiple apps at once. Teachers can choose to be online to use presentations, learning and grading tools simultaneously.
- protects devices from viruses and unauthorized access and helps manage the security of user accounts and passwords.
- teaches students how to use complex digital technology in different ways.
- supports tools which facilitate communication between teachers, students, colleagues, and parents and encourage online learning, sharing of resources, and collaboration of projects.
- increases classroom efficiency by updating software and fixing technology issues.
- allows teachers to personalize learning by using custom settings and installing software that caters to individual needs.

Lesson plan 2

Resources

- ✓ Textbook pages 4-6
- ✓ Images of on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ What happens when you turn on the computer?
- ✓ What do you see when you unlock a smart phone?

Reading and explanation (20 min)

Read pages 4, 5 and 6.

Explain to the children what a widget is. Discuss Android, a mobile operating system that helps smartphones, tablets, and other devices to function. It helps run apps, play games and allows you to talk to your friends. It lets you change things on your device, such as the wallpaper or the way your apps look. It has many features:

- Software apps such as Google Maps, YouTube, Google Chrome and Gmail.
- home screen that comprises of widgets that update weather, news, etc.
- status bar which displays information about the device and the Wi-Fi network that the device is connected to.
- Bluetooth, SMS and MMS messaging, digital cameras, GPS (Global Positioning System), and compass.
- Autocorrect and multitasking apps.

macOS is the operating system for all Apple desktops and laptop computers. macOS has numerous features and apps:

3. the Mail app is used to send and receive email. iMessages is used to chat using text and images. FaceTime, a video calling app enables you to talk to your friends and family face-to-face.
4. The Photos app allows you to view and organise all your pictures. You can edit photos to make them look better and create photo albums and slideshows. Here's how to use the app, step by step:
    - Open the Photos App
    - View the photos you have taken or downloaded
    - Organise your photos in albums. To create albums on your phone, tap Albums, then tap Create New Album and choose your photos.
    - Use editing tools to crop and rotate the picture, adjust the brightness, add filters, and adjust colour or brightness.
    - To share photos, tap on the photo you want to share, then tap the Share icon and send via text, email, social media, etc.
    - Use cloud services such as Google Photos or iCloud to ensure that your photos are safe.
5. iCloud is cloud storage that lets you store your photos, documents and other files online. You can access your stuff from any Apple device.

6. The Reminders app helps set reminders for things you need to do, such as homework tasks or chores. The Calendar app helps keep track of important dates and events such as birthdays, holidays, and school activities.
7. Voice memos allow you to record your voice.
8. Contacts app helps you store your friends' phone numbers and email addresses.

WHIZ TASKS

Find out the similarities between Android and macOS.

Suggested answers:

Both Android and macOS have a visually appealing user interface.

Both have app stores that enable you to download and manage apps.

Both allow users to run multiple apps simultaneously.

Both have access to cloud services.

Both Android and macOS provide strong security features, including encryption, secure app installation and regular updates.

Both operating systems have file systems to manage, view, and organise files.

Both have voice assistants to help users perform tasks using voice commands.

Conclusion (5 min)

Ask:

- ✓ How does the Android OS differ from Mac OS?
- ✓ How do Google Assistant and Siri help?

Homework assignment

- ✓ The children are instructed to research the answers and complete Whiz Tasks as their homework assignment.

CONCEPT CLOUD

A widget is the part of a graphical user interface that displays data and enables a user to interact with the operating system (OS). It is a small app or tool that can provide specific functions or information. It is designed to enhance user experience by providing quick access to commonly used features, real-time updates, or personalized content. Some widgets are interactive so users can perform actions or obtain information directly from the widget itself.

Website widgets include weather displays, social media feeds, chatbots, and search bars. Mobile device widgets include weather forecasts, calendar events, news headlines, music players, and social media updates. Smart devices such as smartwatches or smart TVs may also enhance user experience and provide instant access to specific features or data.

Lesson plan 3

Resources

- ✓ Textbook pages 7 - 9
- ✓ Images of touchscreens, smartphones, tablets and laptops being used in different environments on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ What is your favourite game or app?
- ✓ What makes it easy to use?
- ✓ What features would you like to add to this app?

Reading and explanation (25 min)

Read pages 7, 8 and 9

Explain that a user Interface helps a human interact with an application or a website on a computer.

Examples of user interfaces are a display screen, keyboard, mouse, remote control, atm and speedometer.

Explain that Mobile User Interfaces (MUI) are similar to Graphical User Interfaces (GUIs). MUIs are found on smartphones and tablets. You can open the apps and interact with them through touch.

A GUI features a desktop where everything is displayed. They are easy to use. Apps, hardware and files are represented by icons. Menus are used to access different features of the app. Users interact with the interface by using a mouse and on-screen pointer.

Desktop

Illustrate that a desktop is the main screen you see when you turn on a computer. You can move and organise all your files, apps, and folders on the desktop. The desktop resembles the top of a desk where you generally see:

- icons that are small pictures or symbols that represent different programs, files, or apps.
- a bar at the bottom or side of the screen where you can view your apps.
- wallpaper which is the background picture you choose for your desktop.

Examples of desktop icons include 'This PC', 'Documents', and 'Recycle Bin'. Demonstrate how to organise information in folders on the desktop in Windows. Instructions have been provided in the textbook.

Explain that a hard drive is a data storage device that stores and retrieves digital information on a computer and can store both operating systems and user files, such as photos, music, documents, and videos. Teach them about the different drives of a computer: internal and external. The internal hard drive is built inside the computer. It stores the operating system and all your files. It is fast because it is connected directly to the computer's main parts. The external hard drive is separate and can be connected to the computer using a USB. It is a portable device used as backup and to store extra files. An external hard drive is handy when you need to free up space on your computer or move files between different computers.

WORD WHIZ	
Interact	Find or extract information stored in a computer
Retrieve	Able to be reached or entered
Portable	Able to be easily carried or moved because it is lighter and smaller
Expand	Become or make larger

Conclusion (5 min)

Ask:

- ✓ Which system provides more customization options for users?
- ✓ How does each system handle multitasking? Which is more efficient?

Homework assignment

- ✓ The children are instructed to answer this question:
- ✓ If you were to create an operating system, what features would it have and what would you call it?

Suggested answers to end-of-chapter Workstation (page 10)

Explore with Whiz

1. an operating system
2. the desktop
3. recycle bin
4. click and drag the top of the window
5. it is there till you empty the contents

Whiz Quiz

1. Widgets are small tools or apps that provide information without opening the app. A calendar widget shows the current date and month on the screen.
2. Describe and draw the widget you would like to create for the Windows operating system.
3. Android is mostly used in smartphones and tablets.
4. iCloud stores photos, files, and backups; you can access them from any Apple device.
5. A User Interface (UI) shows you how to interact with a computer or app, using buttons, icons, and menus.
6. The desktop is an essential feature because it is where you organise files, open programs, and manage your computer's tasks.

Worksheet

1. Windows Icon: Located at the bottom-left corner of the screen, clicking this icon opens the Start Menu, providing access to apps, settings, and power options.
2. Search Box: Found next to the Windows icon, it allows you to search for files, apps, settings, and even perform web searches directly from the taskbar.
3. My Documents: A default folder in File Explorer where you can store and organise your personal documents. It's part of the Libraries feature in Windows.
4. Desktop: The main screen area that you see after logging in. It can hold shortcuts to files, folders, and applications, and you can customize it with wallpapers and widgets.

5. Task Bar: Located at the bottom of the screen, it shows open applications, pinned shortcuts, the system tray, and the notification area. It also includes the Start Menu and Search Box.
6. Calendar: Integrated into the system tray, it provides quick access to your calendar and events. You can view and manage your schedule directly from the taskbar.
7. Recycle Bin: A special folder where deleted files are temporarily stored. You can restore files from the Recycle Bin or permanently delete them to free up space.
8. Start Menu: A central hub for accessing applications, settings, and power options. It includes a list of installed apps, live tiles for quick access, and shortcuts to important system functions.

02 COMMUNICATING THROUGH THE INTERNET

Teaching Objectives

Students will be able to:

1. identify different forms of communication through the Internet,
2. use the different Zoom interfaces effectively,
3. identify the different social media platforms,
4. utilise collaboration tools to maximise productivity,
5. recognise that Internet communication is evolving with time.

Lesson plan 1

Resources

- ✓ Textbook pages 12 -15
- ✓ Images of touchscreens, smartphones, tablets and laptops being used in different environments on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ What are some ways to communicate using the internet?
- ✓ What social media platforms have you used? What did you use them for?

Reading and explanation (20 min)

Read pages 12, 13, 14 and 15.

Explain that the Internet connects the world and provides access to information and the exchange of data and messages between people, devices, or computer systems.

Internet communication takes different forms: email, instant messaging, voice-over calls (VoIP), video conferencing, social media, and collaborative tools.

There are multiple advantages of using Internet communication:

- The Internet allows instant access to information as well as people across the world.
- It breaks down geographical barriers, allowing people to interact, share ideas, and learn from each other.
- Messages can be sent quickly and efficiently.
- Internet communication is cost-effective, especially for long-distance communication when you use platforms like WhatsApp, Skype, or Zoom.
- You can communicate anytime from anywhere.
- The internet allows different types of communication, such as video calls, voice calls, instant messaging, and emails.
- Communication isn't limited to text. You can easily send photos, videos, voice messages, and even share documents, making conversations more interactive and engaging.

- The internet is a vast resource for learning and knowledge.
- Businesses can reach customers and share information without the need for physical travel. Remote teams are able to collaborate effectively.

1. Email (short for electronic mail) is an effective, reliable and secure mode of communication. It allows people to send and receive messages, documents, photos, and other files instantly from any computer device. Email can be used for professional as well as personal reasons. Messages can be stored in an inbox and can be organised into folders. You can create an email ID through web portals like Microsoft Outlook, Gmail, and Yahoo and connect with multiple people at the same time. Email helps reduce the need for paper.
2. Instant messaging is an online tool for people to communicate with others via chat. It involves typing messages, but some apps also allow you to create voice messages, make 0 video calls, and share files. You can share information instantly through WhatsApp, Facebook Messenger, etc. You can add emojis, stickers, or GIFs or send photos, videos, and documents to people during a conversation. You receive instant notifications when someone messages you.
3. Voice-over calls (VoIP)

   Voice-over calls (VoIP) use Internet telephone services to route telephone calls to selected numbers. They are cost-effective and are widely used by businesses to make global calls.

WORD WHIZ

Collaborative	Involving two or more parties working together
Long-distance	Operating between distant places
VoIP	Stands for Voice over Internet Protocol; technology that allows you to make voice calls using a broadband Internet connection instead of a regular phone line

DIGITAL RESOURCES

1. Presentation Slides - Forms of Internet Communication

Conclusion (5 min)

Ask: questions are missing. Ask Asra

Homework assignment

✓ How can the Internet be helpful in doing your homework?

✓ Look for at least three other web portals where people can create email IDs.

Lesson plan 2

Resources

✓ Textbook pages 15 - 18.

✓ Images of Zoom screenshots on the softboard or a tablet or multimedia if available.

Starter activity (5 min)

Revise what you started this chapter with. Ask your students what the different forms of Internet communication are. (Suggested answers: email, instant messaging, voice-over calls (VoIP), video conferencing, social media, and collaborative tools)

Reading and explanation (25 min)

Read pages 15, 16, 17 and 18

Explain the importance of video conferencing. It is a live, face-to-face meeting between two or more remote parties over the Internet, used for communication and interaction. Video conferencing is often used for job interviews, family gatherings, health and wellness activities, and games.

Video conferencing enables face-to-face conversations, making it easier to understand each other's tone, expressions, and body language. It reduces travel expenses, helps families and businesses communicate and collaborate internationally. You can even work on remote projects when you can see each other and share screens, making collaboration more efficient. With video, conferencing participants stay engaged and focused; and seeing everyone creates a more interactive environment.

Video conferencing tools are accessible to people with different needs, offering features like subtitles, sign language interpretation, and adjustable video settings.

Introduce your students to Zoom and teach them how to use it.

WORD WHIZ

Conferencing	The activity of talking to people in different places using phone or computer systems
Cost-effective	Producing satisfactory results without costing a lot of money
Route	Send or direct along a specified course
Remote	Situated farther; distant

DIGITAL RESOURCES

1. Video 1 - Communicating via Internet
2. Video 2 - Collaborative tools
3. Presentation Slides - Collaborative tools
4. Worksheet - Communicating through the Internet

Conclusion (5 min)

Ask:

- ✓ What apps can you use to work with your classmate on a project without being in the same place?
- ✓ What are the advantages of working on a group project online?

Homework assignment

- ✓ The children are instructed to complete Whiz Tasks (Pg 16)

WHIZ TASKS

Make a list of five reasons why you would choose video conferences over in-person meetings.

Suggested answers:

1. Video conferences are convenient as you can join from wherever you may be.
2. They are cost effective as they reduce travel and other in-person meeting costs.
3. It saves you the need to go to someone's office and thereby saves time.
4. Video conferences make it easy for people to be more accessible and.
5. You have the flexibility to schedule meetings according to different time zones as per the availability of people.

Lab Activity (40 min)

Briefly revise what you learned about Zoom in the last class. What are the advantages of using Zoom?

Suggested answers:

Zoom is useful for learning, connecting with others, and collaborating online.

Demonstrate to your students how to download and Install Zoom on their computers.

Then show them how to open the app.

Guide students as to how to create an account.

Teach them how to test their microphones and cameras to make sure they are working.

Provide a test meeting link for students to join

Show them how to join a Zoom meeting by entering the meeting ID and password.

Demonstrate how to mute and unmute microphones.

Explain why it is important to mute the mic when not speaking.

Show them how to turn the video on or off. Discuss the reasons for use of video.

Introduce the chat. Instruct students to send a simple text message in the chat box.

Demonstrate the use of reactions (thumbs up, claps) and the 'raise hand' feature.

Explain how to share a screen.

Let them practise sharing a document or a webpage.

Show your students how to leave a meeting.

Explain the courtesies required to end a meeting if they are the host.

Teach them good etiquette that they should be careful about during the video conferences.

CONCEPT CLOUD

Rules for Netiquette during a video conference

1. Make sure your technology works correctly.
2. Ensure that you have high-quality video and audio signals.
3. Set a pleasing neutral background and good lighting.
4. Frame the camera correctly.
5. Look into the camera so the people in the conference have eye-to-eye contact with you.
6. Be attentive to the speakers in the meeting.
7. Do not multitask during the meeting.
8. Mute yourself when you are not speaking to avoid extraneous noises.
9. Wear work-appropriate clothes for the call.
10. Always be punctual. Respect other people's time

Lesson plan 3

Resources

- ✓ Textbook pages 19 - 22
- ✓ Images of touchscreens, smartphones, tablets and laptops being used in different environments on the softboard or a tablet or multimedia if available.

Starter activity (5 min)

Do a Recap. Ask the children what the different forms of internet communication are.

Suggested answers: email, instant messaging, voice-over calls (VoIP), video conferencing, social media, and collaborative tools.

Ask them:

Tell me what you know about social media.

Why must you be kind and respectful when using social media?

Reading and explanation (25 min)

Read pages 19, 20, 21 and 22.

Introduce social media as a communication, learning and creativity medium. Explain to them how important it is to maintain decorum, respect, kindness, safety, and balance whilst using social media.

Discuss the popularity of social media. Ask your students what different social media platforms they use. Suggested answers: Facebook, TikTok, Instagram, LinkedIn, X, Wikipedia, Snapchat, Messenger, etc.

It is important to teach your students the benefits and risks attached to using social media. As a teacher, it is your duty to guide the children to use social media responsibly. Explain that social media is used to connect people, share messages, photos, and videos, and learn new things.

Teach them to be kind and respectful when interacting with their friends online. Remind them that once something is posted, it can be seen by multiple people as everything shared online

is part of their digital footprint and can be difficult to remove. Discuss how social media can impact people. Encourage them to think about what they post as some posts can be misleading and lead to fake news or misunderstandings and may affect their reputation. Comparing themselves to others can lead to negative feelings. Teach them not to share personal information online. Not everyone they meet online is who they say they are. Demonstrate the ways in which they can report inappropriate behaviour or block suspicious people. Explain that passwords must be kept private. Advise them to use unique passwords. Encourage them to share positive, helpful content and to behave responsibly on social media platforms.

Teach them that collaborative tools enable people to work together even if they are in different locations. They make teamwork easier, faster, and more efficient by providing spaces where everyone can contribute, communicate, and coordinate. Discuss the different features:

- File sharing allows them to share documents, images, videos, software or links with their teammates. Everyone can access the same files, irrespective of their location.
- Instant messaging allows teams to exchange instant messages and online files with one or more recipients.
- Cloud storage tools can store remotely; all team members can access this central location for information.
- Online whiteboard tools provide teams with a place to share visual information through graphics, drawings and text.
- Document synchronisation ensures that a document remains consistent on different devices when multiple people access and work on it at the same time. Everyone working on the document can view the latest version instantly.
- Voice and video conferencing tools enable people in different locations to communicate using audio or video.
- Calendar sharing allows them to view appointment schedules on a central calendar and set a meeting at a time that works for everyone.

Discuss how virtual reality, artificial intelligence and drone technology will impact the future trends in Internet communication.

WORD WHIZ	
Content-sharing	The act of sharing data, like images, videos, or text online
Networking	The linking of computers to allow them to interact
Open-content	Content that is freely accessible, editable, and distributable

Conclusion (5 min)

Ask and discuss this with your students:

✓ Give me examples of how you can use social media to make the world a better place.

Homework assignment

✓ The children are instructed to complete the worksheet on page 24.

WORD WHIZ	
Synchronisation	The process of ensuring that the data on two or more devices is consistent and up to date
Productivity	Measure of how effective or efficient someone is at a task

CONCEPT CLOUD

Examples of Collaborative Tools:

1. Google Docs, an online tool where you can write, edit, and share documents with other people.
2. Google Slides enables you to create presentations with pictures, text, and videos.
3. Padlet lets you create online boards to share thoughts, ideas, pictures, and videos.
4. Trello is used to organise tasks and keep track of what everyone is doing in a project.
5. Seesaw, a digital portfolio where students can share their work and collaborate with teachers and classmates by uploading photos, videos, and drawings.
6. Zoom, a video-conferencing tool that allows you to have virtual meetings with your classmates or teachers to discuss projects, show presentations, or just talk.
7. Microsoft Teams, an app that allows you to chat, video call, and work together on documents.
8. Flipgrid, a tool which enables you to record and share video responses with your classmates.
9. Kahoot! A game-based learning platform where you can play quizzes and review things you have learned.
10. Miro, a virtual whiteboard where you and your team can draw, add sticky notes, and organise ideas together.

Suggested answers to end-of-chapter Workstation (page 23)

Explore with Whiz

Choose the correct answer.

1. b (Faster)

2. b (To find web pages)

3. a (Google)

Whiz Quiz

1. The greatest advantage of Internet communication is its instant connectivity. It allows people to communicate with others across the globe in real-time, eliminating geographical and time-zone barriers. This enables faster decision-making, remote work, access to information, and fosters global collaboration.

2. Email

   Instant messaging

   Video conferencing

   Social media

   Voice over calls

   Collaborative tools

3. Here are three uses of screen sharing
    - Student teams can work together on documents, presentations, or projects by sharing their screens during virtual meetings.
    - Teachers or instructors can use screen sharing to demonstrate interactive websites, educational games to students.
    - Teachers use screen sharing to guide students through homework assignments during live study sessions.
4. Google Docs is an example of a collaborative tool where multiple users can work on the same document simultaneously. Users in different locations can add or edit content, leave comments, and track changes.

Whiz through Lab

2. The negative effects of social media

- Constant exposure to fanciful images and lifestyles on social media can lead to feelings of inadequacy and low self-esteem.
- Social media platforms can be used to bully, harass, or spread rumors, which may impact mental health.
- Users can spend excessive amounts of time on social media, leading to less time spent in studying, physical activities, and social interactions.
- The use of social media can interfere with sleep patterns.
- Many social media platforms collect personal data; this can lead to identity theft, data breach, or public access to personal information.
- Excessive use of social media may reduce face-to-face interaction, making people more isolated or disconnected from the real world.
- Social media can rapidly spread false information, rumours, or conspiracy theories leading to confusion and misinformation.

Worksheet

Logo	Type of Online Communication	Definition	Example
	Email	Websites where people can post messages and have discussions about various topics.	Sending a letter to a friend using your computer.
	Instant Messaging	A way to send messages from one computer to another using the Internet.	Chatting with your friend on a messaging app.
	Video Calls	Websites and apps that let you share information, photos, and videos with friends and family.	Asking a question about your favourite video game on a gaming forum.
	Social Media	A way to talk to and see someone in real-time using a camera and microphone.	Posting a picture on Instagram or sending a message on Facebook.
	Forums and Online Communities	A way to send messages quickly back and forth with someone who is online at the same time.	Talking to your grandparents on a video call.

03 MS POWERPOINT

Teaching Objectives

Students will be able to:

1. use MS PowerPoint to create a slide presentation,
2. identify the different features of this program,
3. explain the terms 'animation' and 'transition',
4. utilise templates and design options to create effective presentations.

Introduction for the teacher

MS PowerPoint helps you organise and present your ideas by combining text, pictures, and videos. It is used for projects and reports in school as well as in the workplace. Learning PowerPoint helps you become more tech-savvy.

By using PowerPoint for presentations, you learn to speak in front of other people. Having visuals on your slides helps provide a recap of the main points. It encourages you to be creative. You can design slides using different colours, fonts, images, and animations and make your presentation visually interesting. You can add videos, audio, and other elements to your slides to make it more engaging. PowerPoint helps you organise your information in a clear, structured way. You can rearrange the slides and revise your work if needed.

Lesson plan 1

Resources

- ✓ Textbook pages 25 - 28
- ✓ Images of MS PowerPoint screenshots on the softboard or a tablet, preferably multimedia or a slideshow if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ Why do people make presentations?
- ✓ What makes a presentation interesting?

Reading and explanation (20 min)

Read pages 25, 26, 27 and 28.

Explain to them that a multimedia app combines different types of media such as text, graphics, sound, animation and video, etc. to present information. Microsoft PowerPoint is widely used to create multimedia presentations. Show them ideally through a slideshow how MS PowerPoint is to be used. Teach them how to open MS PowerPoint and create a new presentation. Explain the layout of the workspace (slides, menus, and toolbars) and show them how to add and edit text and insert images on their slides. Guide them as to how they can resize, rotate and move images around the slide. Teach your students how to apply themes and explore different colour schemes and add design elements such as backgrounds and slide layouts. The Insert tab is used to insert

different types of media such as tables, pictures, screenshots, SmartArt graphics, charts, shapes, movies and sounds. Show students how to add links and multimedia.

WORD WHIZ

Complicated	Consisting of many interconnecting parts or elements
Generate	Produce or create
Template	A preset format for a document or file

DIGITAL RESOURCES

1. Video - Multimedia Elements
2. Worksheet - Toolbars in MS PowerPoint

Conclusion (5 min)

Ask:

- ✓ What should you take into consideration when writing on your slides?
- ✓ What colours and designs did you use to make your PowerPoint presentation look exciting?

Homework assignment

- ✓ The children are instructed to complete Whiz Tasks (Pg 27)

WHIZ TASKS

Explore at least 3 other multimedia options provided by the 'Insert' tab in MS PowerPoint. Also highlight these features in the screenshot above

Open MS PowerPoint. and choose a blank slide. Go to the Insert Menu and complete this task.

CONCEPT CLOUD

Discuss SmartArt in detail.

SmartArt helps organise complex ideas into simple visuals. It can help transform a list of steps into a flowchart or a set of relationships into a diagram. It makes it easier to show how things are connected, or how one idea leads to another, making your presentation clearer and more attractive.

SmartArt has different categories:

- Lists are used to display items in a sequence
- Processes are used to show a sequence of steps, ideas, or actions in a timeline or flowchart.
- Cycles represent ongoing processes where one step leads to the next.
- Hierarchies show relationships between different information levels, such as a family tree or an organisational chart.

- Relationships show how different ideas or items are connected to each other.
- Pyramids represent data in a hierarchical structure, showing levels of importance.

You can change the colours, styles, and layout of your SmartArt graphic using the Design tab.

You can also add effects like shadows, 3D formatting, etc. to make your SmartArt stand out.

You can resize or move SmartArt elements and add new shapes.

Lesson plan 2

Resources

✓ Textbook pages 28 - 31

✓ Images of screenshots of a simple presentation in different stages on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

✓ What different factors contribute to the creation of a good presentation? (good design, clear information, creativity etc.)

✓ What will you use to organise your ideas? (structure)

Reading and explanation (25 min)

Read pages 28, 29, 30 and 31.

Discuss with your students how best to create a simple presentation in MS PowerPoint based on the following points:

- Open Microsoft PowerPoint
- Open a Blank Presentation
- Choose a Theme from the available options to make your slides look colourful and interesting
- Create a Title Slide
- Add a New Slide
- Insert a Picture
- Add More Slides
- Save Your Presentation

WORD WHIZ

Handouts	A piece of printed information provided free of charge
Navigation	The action of moving around a website, the internet, etc.
Rearrange	Change the position, time, or order of something
Uniformity	A state in which everything is regular, identical or unchanging

Conclusion (5 min)

Ask: What colours or backgrounds did you choose to make your PowerPoint presentation more appealing?

How will PowerPoint help you in the future?

Homework assignment

Answer this question:

✓ If you want to tell a story in PowerPoint, how will you use pictures or words so that you create an effective presentation? You can use examples to illustrate.

Lab Activity (40 min)

Creating a Presentation on The Solar System

Instruct your students to open Microsoft PowerPoint on their computers.

Show them how to create a new blank presentation.

Explain that PowerPoint automatically starts with a Title Slide.

Add Text to the Title Slide (Title: The Solar System)

Demonstrate how to click inside the text boxes and type the title.

Show them how to change the font style and size so the title stands out.

(Highlight the text; use the Home tab to change the font, size, and colour)

Demonstrate how to add a new slide by clicking on the New Slide button in the Home tab.

Instruct students to add information in brief, point form.

Show them how to insert an image.

Teach them how to find an image online.

Show them how to resize it by dragging the corners of the image.

Show how to move the image around on the slide by clicking and dragging.

Click on the Design tab in the Ribbon.

Illustrate the use of pre-designed themes (based on colour or background)

These give the presentation a professional touch.

Encourage them to experiment with different themes, colours, and images.

Show students how to add additional slides.

Teach them how to save their work.

Name the file and save it.

Explain the importance of saving frequently while working.

Show them how to view the slideshow.

Suggested List of Slides:

1. The solar system consists of the Sun and everything that travels around, the Sun.
2. This includes the eight planets, asteroids, and comets.
3. The solar system is only a small part of the Milky Way which comprises a huge system of stars and other objects.
4. The Sun, a star, the largest object in the solar system is found at its centre.
5. Living things on Earth depend on the Sun for light and heat.
6. After the Sun, the largest objects in the solar system are the planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

Lesson plan 3

Resources

- ✓ Textbook pages 32 - 33
- ✓ Images of different features of PowerPoint displayed on the softboard or a tablet or multimedia if available.

Ask students the following question:

Starter activity (5 min)

- ✓ What features of PowerPoint have you learned about?

Reading and explanation (25 min)

Read pages 32 and 33.

Have this class in the computer lab if possible so you can show the students the different features on the computer and their uses as you read through the pages.

Explain the different features that help create effective presentations:

1. Multiple slides can be created for an effective and interesting presentation.
2. Text Boxes can be added anywhere on the slides for text placement. You can format the text by changing the font style, size, colour, and effects such as bold, italics, underline, etc. Text can be aligned.
3. Images can be added. Geometric shapes such as circles, rectangles, arrows, etc. can be added along with pre-designed graphics such as flowcharts, lists, and hierarchies as well as charts and tables to display data more effectively.
4. Themes and Background styles help apply a consistent design across all slides, including colours, fonts, and background styles of the entire presentation. You can create your own slide design theme by using background colours, patterns, and designs of your own choice.
5. The Design feature enables you to adopt a theme and layout suggestion so all slides have a consistent look and are visually appealing.
6. Animations allow text, images, or objects on the slide to appear with a 'Fly In' or 'Fade' effect.
7. Transitions help create visual effects when moving from one slide to the next.
8. Multimedia enables you to insert audio clips, background music, or videos from your computer or online sources to make your presentation more dynamic.
9. The Slide Master feature allows you to modify the layout and design of all slides by adjusting the master slide, ensuring consistency across the presentation.

DIGITAL RESOURCES

1. Video - Creating a simple presentation in Google Slides (part-1)
2. Video - Creating a simple presentation in Google Slides (part-2)
3. Presentation Slides - Google Slides Interface

Conclusion (5 min)

Ask:

- ✓ What theme did you choose for your presentation and why?
- ✓ How can you make your presentation more interesting?

Homework assignment

- ✓ Write a short essay on the following topic:

What PowerPoint presentation would you like to create for your next project?

Suggested answers to end-of-chapter Workstation (page 34)

Explore with Whiz

Choose the correct answer.

1. the title slide appears
2. Handout master
3. Insert Photo Album
4. Transitions
5. Slide Master

Whiz Quiz

1. The main purpose of a multimedia program is to combine different forms of media such as text, audio, video, graphics to create engaging and interactive content.
2. A template is a pre-designed layout or structure that can help create documents, presentations, or other projects.
3. Through SmartArt, you can add graphics such as diagrams and flowcharts.
4. The Design feature helps to customise the look and layout of slides with multiple themes, colours, and format options.
5. Two multimedia applications other than MS PowerPoint are Google Slides and Canva.

Worksheet

Make copies of the attached storyboarding worksheet and share with your students to work on individually.

Storyboarding Worksheet

Name: _____

Slide 1: Why is Sunlight Important for Us?

Slide 2: Introduction

Slide 3: Sunlight and Plants

Slide 4: Sunlight and Human Health

Slide 5: Sunlight and the Environment

Slide 6: Add an additional slide (optional)

Now try to recreate this presentation on Canva.

04 GOOGLE SHEETS

Teaching Objectives

Students will be able to:

1. identify the basic features of Google Sheets,
2. explain what a cell is, select cells and add content in them,
3. distinguish between a row and a column,
4. create and edit online spreadsheets,
5. create simple graphs in a spreadsheet.

Lesson plan 1

Resources

- ✓ Textbook pages 36 - 39
- ✓ Images of Google sheets screenshots on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ What program helps you organise and store information in rows and columns?
- ✓ What tool helps you record how much money you have saved over time?

Reading and explanation (25 min)

Read pages 36, 37, 38 and 39.

Introduce Google Sheets as a tool that allows us to organise information, make lists, and do math.

When you open Google Sheets, you see a blank grid with rows and columns. Teach the children about different parts of the Interface. Discuss the concept of cells. Demonstrate how to select cells. Explain cell content.

CONCEPT CLOUD

Parts of the Interface

The Menu Bar at the top of the screen consists of File, Edit, View, etc.

The File option allows you to create a new sheet, open another sheet, save your work, or print your sheet.

The Edit option allows you to copy, paste, or undo.

The View option enables you to zoom in or out or change how the screen looks.

The Insert option allows you to add new things to your sheet, like rows, columns, or even a chart.

The Toolbar is right under the Menu Bar. It has icons that make it easy to do things quickly:

Bold, Italics, Underline make the text in your cells bold, slanted, or underlined.

Font and Size allow you to change the style and size of the text.

Text Color can be changed.

Fill Color enables you to change the background colour of a cell to highlight something.

The Borders option allows you to add lines around cells to make your table look organised.

The Columns are the vertical parts of the grid. They are labelled with letters at the top. You can click on a letter to select the entire column.

The Rows are the horizontal parts of the grid. They are labelled with numbers on the left side. You can click on a number to select the entire row. It will highlight the whole row.

The cells represent each box in the grid. This is where you type your information, like names, numbers, or words. Each cell is labelled by the column letter and the row number. Click on any cell and start typing to enter your information. You can also click on a cell to select it if you want to change something inside it.

The Formula Bar is just below the Menu Bar and Toolbar. This is where you can see and type things like math formulae or words you want in a cell.

The Sheets Tab at the very bottom of Google Sheets consist of tabs that say Sheet 1, Sheet 2, etc. You can switch between the pages by clicking on the tab.

The Scroll Bars on the side and at the bottom of the screen help you to move up, down, left, or right.

The Help Button shows you tips and instructions for using Google Sheets.

WORD WHIZ

Accessible	Able to be reached or entered
Collaborate	Work jointly on an activity or project
Electronic	Operating with microchips and transistors that control and direct electric currents

DIGITAL RESOURCES

1. Video - Using Google Sheets (part-1)
2. Video - Using Google Sheets (part-2)
3. Presentation Slides - Google Sheets Interface
4. Worksheet -Google Sheets Interface

Conclusion (5 min)

Ask:

- ✓ What do you use Google Sheets for?

Homework assignment

- ✓ The children are instructed to complete Whiz Tasks (Pg 38)

WORD WHIZ

Alignment	The arrangement of objects, text, or images on a digital platform
Interface	A device or program that enables a user to communicate with a computer
Intersection	The point where two lines cross

Lesson plan 2

Resources

- ✓ Textbook pages 40 - 43.
- ✓ Images of Google sheets screenshots with children's grades on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ What practical purpose can a teacher use Google sheets for in school?
- ✓ What would you like to use it for?

Reading and explanation (25 min)

Read pages 40, 41, 42 and 43.

Reiterate that Google Sheets is used to create spreadsheets. This new spreadsheet will help them evaluate the grades of the students in different subjects. The names of the different students will be listed in the student's column. The list of marks each student gets in different subjects will also be noted. Instruct them to add up the total marks, then calculate the average. Based on the total, tell them to rank the student's position in class. Demonstrate how to create a bar graph based on the table.

CLASS ACTIVITY

Use Google Sheets to create a new spreadsheet which lists your monthly groceries with the quantity you purchase them in, their unit price and the total amount you have spent on these items. Then add up and calculate what your total bill was. What was the most expensive item on your bill? Create a bar graph which shows how much you spent on each item. Alternatively you can create this database on the blackboard where each student gives you the name of one item, the unit price and the total amount spent on that item.

Item Name	Quantity	Unit Price	Total Price
Apples	2 kilos	350	700
Milk	1 carton	380	380
Bread	2 loaves	200	400
Chips	4 packets	60	240
Eggs	1 dozen	–	350

Conclusion (5 min)

✓ Ask: What are the advantages of Google Sheets?

Suggested answer: Google Sheets is a free browser-based app which works on any computer device. Sheets allows multiple people to work and collaborate on the same document.

Homework assignment

✓ The children are instructed to complete Workstation exercises.

Suggested answers to end-of-chapter Workstation (page 44)

Explore with Whiz

Choose the correct answer.

1. The toolbar menu
2. The formula bar
3. A cell
4. A row
5. A column

Whiz Quiz

1. Google Sheets will be used to create and manage spreadsheets, analyse data and organise information.
2. Google Sheets automatically saves your work as you go.
3. The function of the toolbar menu is to provide quick access to formatting and editing tools, and to help organise your spreadsheet.
4. A cell is represented by the intersection of a column and a row.
5. A cell range is a group of cells selected together, often represented by the first and last cell in the range and separated by a colon.
6. We store data in cells within the spreadsheet.

Word Search form page 45 of the book with highlighted words.

1. Formula Bar 2. Column 3. Cell 4. Row 5. Toolbar

Worksheet

Z	X	Y	J	H	J	F	D	S	L
F	E	M	T	W	N	B	F	A	P
Q	O	N	O	L	K	J	G	M	O
W	P	R	U	E	R	T	H	N	I
E	D	F	M	Y	C	Q	J	B	U
R	V	G	Y	U	O	A	K	V	Y
T	B	H	R	T	L	Z	R	C	T
Y	C	E	L	L	U	A	A	X	R
U	O	Z	X	S	M	W	B	Z	E
I	Q	W	E	R	N	E	L	A	W
O	L	K	J	H	G	F	O	D	R
P	Z	X	C	V	B	N	O	M	A
A	S	D	F	G	H	J	T	K	L

1. Formula Bar: edit formulas for a specific cell
2. Toolbar: edit and modify the spreadsheet
3. Row: a group of cells that run horizontally
4. Column: a group of cells that run vertically
5. Cell: the intersection of a row and a column

05 INTRODUCTION TO SCRATCHJR

Teaching Objectives

Students will be able to:

1. understand the basics of ScratchJr programming,
2. choose a character and create their own mascot,
3. select a background corresponding to their story or game,
4. distinguish between different blocks,
5. create movements in the characters by linking blocks,
6. create simple games in ScratchJr.

Lesson plan 1

Resources

- ✓ Textbook pages 46 - 49
- ✓ Image of the ScratchJr screenshot on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ What happens when we tell the computer to do something?
- ✓ Does coding help tell stories or create games?

Reading and explanation (20 min)

Read pages 46, 47, 48 and 49.

Explain that ScratchJr is a programming language that allows them to learn the basics of coding and create their own interactive games and stories. When designing their projects, it teaches them how to make characters move, talk, or interact. They learn to do animation, create stories, and interactive projects. They acquire an understanding of how actions lead to specific outcomes. They learn to collaborate, share ideas, and complete projects together.

ScratchJr allows them to:

- ✓ Snap programming blocks together to make characters move, jump, dance and sing.
- ✓ Modify characters and insert photos.
- ✓ Add sound.

Use the Concept Cloud to explain the different features of the interface.

Discuss what a sprite and script are. Demonstrate how they can change a sprite. Show the children how to change the background.

Conclusion (5 min)

Ask:

- ✓ How do you start a new project in ScratchJr?
- ✓ How can you add a new sprite to your project?

Homework assignment

- ✓ The children are instructed to complete Whiz Tasks (Pg 49) as homework.

CONCEPT CLOUD

Interface Guide

1. **Save**

   Save the current project and exit to the Home page

2. **Stage**

   This is where the action takes place in the project. To delete a character, press and hold it.

3. **Presentation Mode**

   Expand the stage to the full screen.

4. **Grid**

   Toggle on (and off) the x-y coordinate grid.

5. **Change Background**

   Select or create a background image for the stage.

6. **Add Text**

   Write titles and labels on the stage.

7. **Reset Characters**

   Reset all characters to their starting positions on the stage. (Drag characters to set up new starting positions.)

8. **Green Flag**

   Start all programming scripts that begin with a 'Start on Green Flag' block by tapping here.

9. **Pages**

   Select among the pages in your project — or tap the plus sign to add a new page. Each page has its own set of characters and a background. To delete a page, press and hold it. To reorder pages, drag them to new positions.

10. **Project Information**

    Change the title of the project, see when the project was created, and share the project (if supported by your device).

11. **Programming Area**

    This is where you connect programming blocks to create scripts, telling the character what to do.

12. Undo and Redo

If you make a mistake, tap Undo to go back in time, reversing the last action. Tap Redo to

13. Programming Area

This is where you connect programming blocks to create scripts, telling the character what to do.

14. Blocks Palette

This is the menu of programming blocks. Drag a block into the programming area, then tap on it to see what it does.

15. Block Categories

This is where you can select a category of programming blocks: Triggering Blocks (Yellow), Motion (Blue), Looks (Purple), Sounds (Green), Control (Orange), End Blocks (Red).

16. Characters

Select among the characters in your project — or tap the plus sign to add a new one. Once a character is selected, you can edit its scripts, tap its name to rename it, or tap the paintbrush to edit its image. To delete a character, press and hold it. To copy a character to another page, drag it to the page thumbnail.

Lesson plan 2

Resources

- ✓ Textbook pages 50 - 53
- ✓ Images of blocks (from ScratchJr) on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ When you start a new project in ScratchJr, why do you tap the + button?
- ✓ Do you know what the blocks on the interface do?

Reading and explanation (25 min)

Read pages 50, 51, 52 and 53.

Discuss the role the blocks play in programming. Show the children how to create movement with the blocks and how to make a sprite move and change size.

Conclusion (5 min)

Ask:

- ✓ How does a device with a touchscreen differ from one with buttons?

Homework assignment

- ✓ The children are instructed to complete Whiz Tasks (Pg 3)

Lab Activity (40 min)

Take the children to the computer lab. and have them practise using ScratchJr . Ask them to attempt to achieve the tasks listed in Whiz Tasks.

Lesson plan 3

Resources

- ✓ Textbook pages 53 - 55
- ✓ Images of screenshots from ScratchJr on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ What would you like to create with the knowledge you have gained about sprites and blocks in the previous chapter?
- ✓ Can you give me examples of a game you would like to create?
- ✓ What will your main character be?

Reading and explanation (25 min)

Read pages 53, 54 and 55.

Discuss how you can create a new game now that you know about all the tools. Explain how the game in the textbook has been created in detail. If possible, take the children to the computer lab and demonstrate the different steps to them.

Conclusion (5 min)

Ask:

- ✓ What is your favourite feature of the ScratchJr interface? Why do you like it?

Homework assignment

- ✓ The children are instructed to complete Explore with Whiz and Whiz Quiz

Suggested answers to end-of-chapter Workstation (page 56)

Whiz Quiz

1. A programming language helps you create instructions for a computer to perform specific tasks or operations.
2. The steps to add a new character as the mascot are as follows:

   Tap the Character icon, select Add Character and choose a sprite from the library.
3. The function of the landscape icon is to switch the stage orientation to landscape mode for wider projects.
4. Blocks are an intrinsic part of the programming process as they are used for connecting in a sequence to control action or behaviour of characters.
5. We link the blocks to ensure that the program operates in a specific sequence, guiding the character's actions.
6. The Stop block marks the end of the program.

06 DIGITAL CITIZENSHIP

Teaching Objectives

Students will be able to:

1. identify potential online threats,
2. Identify and explain malware, phishing, hacking, and cyberbullying,
3. suggest different ways to protect themselves against malware,
4. understand how the computer can be protected from threats, make this point 5

Lesson plan 1

Resources

✓ Textbook pages 58 - 60

✓ Images of different kinds of malware on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

✓ Do you remember what a digital citizen is?

✓ Why is it important not to talk to strangers online?

Reading and explanation (20 min)

Read pages 58, 59 and 60.

Explain that online threats comprise any activities that may harm or damage computer systems, networks, or digital data. Teach them about the different types of online threats that exist:

1. Malware
2. Viruses
3. Phishing
4. Hacking
5. Cyberbullying

Compare malware to a robber that tries to break into your computer or phone. It can mess up your device or steal your personal data. It can lie hidden in emails, games, or websites. For example, when you download a game, you notice that your computer stops responding at the normal pace, that could be malware.

Enlist the ways to stay safe:

- Don't click on strange links.
- Use antivirus software to protect your device.

- Update your devices regularly to help block malware.

Tell your students that phishing is when someone pretends to be someone you trust and tries to get your personal information, passwords and credit card numbers. For example, you may receive an email saying you have won a prize. It asks you to click the link to claim it. That's phishing!

To stay safe,

- Don't share password, full name, or credit card number with a stranger online.
- Be careful. Banks don't ask for passwords through email or text.
- Check the sender's email address to see if they look strange.
- Protect yourself online by using long and strong passwords with a mix of letters, numbers, and symbols.

Explain to them that they must look out for these signs that indicate that the computer may be infected:

- The computer is functioning at a slower pace
- Files do not open
- Strange emails or advertisements may appear in the inbox.

They must be cautious and take the following steps:

- Use a firewall to block spam from the Internet
- Do not open emails, links, or attachments from unknown people or sources
- Do not install programs that are downloaded illegally
- Use antivirus software to protect the computer from harmful viruses
- Update the OS regularly

Ask your students the following questions to see if they have understood:

What should you do if you think your computer has malware?

How can you prevent malware from getting into your computer?

WORD WHIZ	
Cyberbullying	Sending or sharing negative, harmful, false, or unkind content about someone
Hacker	A person who uses computers to gain unauthorised access to data
Malware	Software that damages or creates unauthorised access to a computer system
Phishing	Sending messages to trick people into revealing personal information
Scam	Online scheme to deceive someone into giving away personal information or money through fraudulent emails, websites, or messages
Virus	Malware that spreads between computers causing them to corrupt data or to crash

DIGITAL RESOURCES

1. Video - Malware, Phishing and Hacking
2. Presentation Slides: Protection against Malware
3. Worksheet - Malware

Conclusion (5 min)

Ask:

1. What is malware?
2. How can you identify that there is malware or viruses in your computer?

Homework assignment

✓ The children are instructed to complete Whiz Tasks (Pg 60)0.

WORD WHIZ	
Fraudulent	Obtained, done by, or involving deception
Suspicious	Cause one to have the idea or impression that someone or something is questionable, dishonest, or dangerous
Unauthorised	Not having official permission or approval

Lesson plan 2

Resources

✓ Textbook pages 61 - 63

✓ Examples of cyberbullying on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

✓ How can we stay safe on the Internet?

✓ What would you do if you saw someone being disrespectful or bullying your friend online?

Reading and explanation (25 min)

Read pages 61, 62 and 63.

Explain that a hacker is a person who tries to break into computer systems. Discuss how they attempt to steal personal information or trick people. Teach your students how important it is not to share their passwords with anyone, not to click on unknown links and not to speak with strangers.

Hackers try to get unlawful access to computer systems or networks so they can steal information and harm people through identity theft. They may also install malware, steal or destroy data, or disrupt an organisation's services.

Describe how cyberbullying refers to the use of the internet or phones to hurt or scare someone on purpose. Examples of cyberbullying are sending nasty hurtful messages, posting embarrassing things, spreading gossip about someone online, excluding someone intentionally or bullying online.

Teach the children to be kind to each other and stand up for their friends if they are bullied. They must report it to a trusted adult. They must always treat everyone with respect whilst online.

CLASS ACTIVITY

Play an interactive game with your students: What should we do now?

Make cards with different situations where students pick up a card, read it out loudly and the student sitting next to them will describe how they would respond to each situation.

Examples of different situations presented on individual cards:

Your friend tries to guess your password to log into an online game.

You receive unkind comments through a social media post.

You hear a rumour about your friend on your friends group chat.

You receive a text message from a friend with a link asking for your information.

You notice strange posts on your social media account that you did not post.

You find a fake profile made with your friend's name and picture.

You post something that hurts your classmate's feelings.

You share a secret with a friend, but the friend tells others without your permission.

You receive an email from someone pretending to be from your school, asking for your password.

You find that your online account was hacked and someone changed the password, locking you out.

WHIZ TASKS

Identify the cyber problem and select the right option.

Suggested answers:

Situation 1 - Phishing

Situation 2 - Virus

Situation 3 - Hacking

Situation 4 - Phishing

Situation 5 - Virus

DIGITAL RESOURCES

1. Video - Cyberbullying

Conclusion (5 min)

Ask:

- ✓ What kind of things do hackers try to steal from a computer?
- ✓ Suggest some ways to keep our computers safe from people who might want to break into them.

Homework assignment

- ✓ The children are instructed to create an appropriate strong password with a mix of letters, numbers, and symbols for their father, a supermarket, a restaurant, a charitable organisation and a multinational company.

Lesson plan 3

Resources

- ✓ Textbook pages 64 – 66
- ✓ Chart with illustrations of dangers of the Internet on the softboard or a tablet or multimedia if available.

Ask students the following questions:

Starter activity (5 min)

- ✓ Have you ever downloaded something from the internet? What did you do before clicking download?
- ✓ Do you know what happens when you click on a link that seems suspicious?

Reading and explanation (25 min)

Read pages 64, 65 and 66.

It is important to teach children to behave safely and responsibly when using digital technology. They must understand the risks and the need to protect themselves from the dangers of the Internet.

Here are some tips to help your students stay safe when they are online.

Advise them to:

- use a secure Internet connection
- choose strong passwords that are long and contain a mix of upper-case and lower-case characters, numbers, special characters and avoid personal information
- avoid any financial transactions when using public Wi-Fi
- update software and operating systems regularly
- review their privacy settings so hackers or marketing companies cannot access their personal information
- use secure devices that use passwords, passcodes, fingerprint readers or face scanners for their security
- be careful what they post as the Internet has no delete key
- to be cautious of the people they meet online as they are not always who they claim to be
- check facts as websites and sources may not always be reliable
- save important information on external hard drives

Describe the concept of an online community to the children as a community of people who share similar interests and get together to discuss topics and share ideas.

For example, Pinterest is an online platform where users create posts related to personal interests such as craft, fashion, and recipes. It is important to maintain safety in online communities by:

- not sharing any personal information
- enabling security features so your personal data remains private
- restricting who can send a friend request
- joining groups that have people you already know
- preventing online apps from sharing data with others
- avoiding communities where users remain anonymous.

WORD WHIZ

Authentication	The process or action of verifying the identity of a user or process
Mental health	A state of mental well-being that enables people to cope with the stresses of life

WHIZ TASKS

Mark the statements with a checkmark if they will keep you safe on the Internet.

c. X

d. X

e. ✓

f. X

g. ✓

Conclusion (5 min)

Ask the children individually:

✓ What in your opinion is the most important thing to remember when using the Internet and why?

Homework assignment

✓ The children are instructed to complete Explore with Whiz and Whiz Quiz

CONCEPT CLOUD

Teaching internet safety to children is crucial for several reasons:

- Children find themselves being harassed or bullied on the Internet resulting in emotional distress and low self-esteem.
- It is imperative that you teach children to keep personal information such as their full names, addresses and phone numbers private so as to avoid identity theft and online predators.
- Children need to behave kindly, respectfully, and responsibly when they are online.
- Everything children do online creates a digital footprint hence actions taken in their early years can be pulled up later in life, affecting their college apps or career opportunities.
- Children do not always realise when they are subject to scam, identity theft, and hacking. Teaching them about strong passwords and secure websites will help them understand when online security is compromised and how to navigate the Internet safely.
- Children may not question untrue or misleading facts. Teaching internet safety helps them to be critical thinkers and identify unreliable sources.
- Children should feel comfortable to seek help when they are bullied, or when they meet a suspicious stranger, or sign into an inappropriate website.

Suggested answers to end-of-chapter Workstation (page 67)

Explore with Whiz

Fill in the blanks

1. malware
2. virus
3. phishing
4. antivirus software
5. hackers

Whiz Quiz

1. We can protect our computer against malware by using antivirus software, keeping our system updated, avoiding suspicious downloads, and using a firewall.
2. A firewall is a security system that blocks unwanted communication from the Internet thereby protecting computer devices from unauthorised access.
3. Phishing is a fraudulent attempt to steal personal information by pretending to be a trustworthy entity, while cyberbullying involves using the internet to harass or intimidate others.
4. The kinds of verification used to access an online account are a one-time password sent to the user's phone or email address, answers to personal security questions and fingerprints or other biometrics such as voice or face recognition.
5. It is important to set privacy settings to control who can access your personal information and protect your data from misuse or unauthorised sharing.
6. We should be careful of the people we meet online as some may not be who they claim to be, they could try to or harm you or may have malicious intentions.
7. If we joined an online community, four things that would be a sign that we were not in a safe environment would be inappropriate content, requests for personal information, harassment and bullying.

Worksheet

1. You want to post a picture of your new pet on social media.

   o Share it online

   o Reason: Sharing a picture of your pet is generally safe and a fun way to connect with friends.

2. Your friend sends you a message on social media asking for your home address so they can send you a birthday card.

   o Seek guidance from a trusted adult

   o Reason: It is important to be cautious about sharing personal information online.

   An adult can help you decide if it is safe.

3. You created a funny video with your siblings and want to share it online.

   o Keep it to yourself

   o Reason: It is safer not to share family photos and videos online because others can use them in ways you might not like.

4. Someone you do not know asks to be your friend on a social media platform.

   o Seek guidance from a trusted adult

   o Reason: It is best to be cautious about accepting friend requests from strangers.

   An adult can help you determine if it is safe.

5. You receive a message from someone you know, but they are asking strange questions and behaving differently.

   o Seek guidance from a trusted adult

   o Reason: This could be a sign of a hacked account or phishing attempt. An adult can help you handle the situation safely.

6. You see a funny video of cats and want to repost it on your social media account.

   o Share it online

   o Reason: Reposting a funny video is generally safe and can be a fun way to share content with friends.

7. You come across a website that asks for your personal information to sign up for a cool game.

   o Seek guidance from a trusted adult

   o Reason: It is important to be cautious about sharing personal information online.

   An adult can help you determine if the website is safe.

8. You want to share a photo of your school's sports event with your friends online.

   o Share it online

   o Reason: Sharing a photo of a public event is generally safe and a great way toconnect with friends.

9. Someone online is saying mean things about you or your friend.

   o Seek guidance from a trusted adult

   o Reason: This is a form of cyberbullying. An adult can help you address the situation appropriately.

10. You find information related to your class science project and want to share the link with your friends on a messaging app.

    o Share it online

    o Reason: Sharing educational resources is generally safe and can be helpful for your friends.