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TOUCHPAD®

PLUS Ver. 3.1

Teacher's Manual

Extended Support for Teachers

ORANGE™
www.orangeeducation.in
www.thetouchpad.com

Teacher's Time Table

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

Development Milestones in a Child

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

Age 5 - 8 Years	
Physical	• First permanent tooth erupts • Shows mature throwing and catching patterns • Writing is now smaller and more readable • Drawings are now more detailed, organised and have a sense of depth
Cognitive	• Attention continues to improve, becomes more selective and adaptable • Recall, scripted memory, and auto-biographical memory improves • Counts on and counts down, engaging in simple addition and subtraction • Thoughts are now more logical
Language	• Vocabulary reaches about 10,000 words • Vocabulary increases rapidly throughout middle childhood
Emotional/Social	• Ability to predict and interpret emotional reactions of others enhances • Relies more on language to express empathy • Self-conscious emotions of pride and guilt are governed by personal responsibility • Attends to facial and situational cues in interpreting another's feelings • Peer interaction is now more prosocial, and physical aggression declines

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

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

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

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

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

Teaching Pedagogies

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

Lesson Plans

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

A lesson plan addresses and integrates three key components:

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

A lesson plan provides an outline of the teaching goals:

Before the class:

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

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During the class:

Present the lesson plan.

↓

After the class:

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

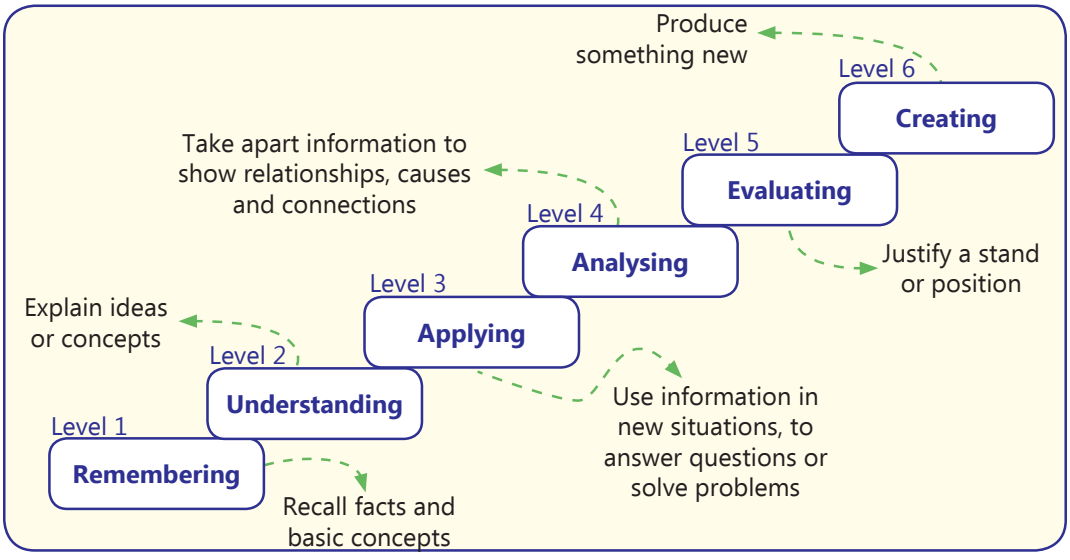
"Knowing yourself is the beginning of all wisdom."

Teaching Strategies

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

Bloom's Taxonomy

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



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

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

Class 4

LESSON PLAN

Touchpad Ver 3.1

1. Evolution of Computers

Teaching Objectives

Students will learn about

- Early counting tools
- Pascaline Adding Machine
- Charles Babbage's Analytical Engine
- Herman Hollerith's Tabulating Machine
- Abacus – First calculating device
- Leibniz Step Reckoner
- Lady Ada Lovelace's programs
- Computer generations

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that the computer is an outcome of labour of a number of minds.

Tell the students about the early counting tools like knots tied on a rope, marks carved in clay, fingers, pebbles, etc.

Explain to the students about invention of Abacus – the first calculating device.

Share with the students the importance and usefulness of Abacus even today and is being taught in schools also.

Give a brief account of these calculating machines:

- Pascaline Adding Machine
- Leibniz Step Reckoner

Tell the students about Charles Babbage, the father of computers, and his invention of Difference Engine which was later improved by him into Analytical Engine, the first working model of a mechanical computer.

Inform the students about Lady Ada Lovelace, accredited as the first computer programmer as the programmer to the Analytical Engine of Charles Babbage.

Share with the students about Herman Hollerith who built Tabulating Machine and later his company became a part of IBM.

Explain to the students about the concept of generations of computers and need for classification on this basis.

Share with the students the characteristic features of the different generations of computers covering:

- First Generation (1940s)
- Second Generation (1950s)
- Third Generation (1960s)
- Fourth Generation (1970s)
- Fifth Generation (Present)

Extension

Ask the students some oral questions based on this chapter.

Q. Name some early counting tools.

Q. What is Abacus?

Q. Who invented Adding Machine?

Q. Which is the first mechanical calculator?

Q. Which is the first mechanical computer?

Q. Who is called the Father of Computers?

Q. Why is Lady Ada Lovelace famous?

Q. How many generations of computers are there?

Q. What was the technology used in First / Second / Third / Fourth / Fifth generation of computers?

Q. Give three characteristic features of First / Second / Third / Fourth / Fifth generation of computers.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 14 and 15 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 16 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 16 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to prepare a comparative table on chart paper comparing different groups of hardware on various parameters with the help of examples and pictures/drawings.

2. Personalizing Linux/Ubuntu

Teaching Objectives

Students will learn about

- ☞ The Ubuntu Environment
- ☞ Desktop Icons
- ☞ Show Application Icon
- ☞ Components of Ubuntu Desktop
- ☞ Launcher
- ☞ Status Menu

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that Ubuntu is a GUI based operating system.

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

Familiarize the students with the components of Ubuntu desktop covering Start menu, Icons, Launcher and Desktop background.

Share with the students the usefulness of Desktop icons. Also explain the actions that can be performed on the same like:

- Selecting an icon
- De-selecting an icon

Explain briefly about Launcher of Ubuntu and the actions involved in the same like:

- Rearranging the icons of the launcher
- Locking the icons
- Unlocking the icons
- Resizing the icons

Demonstrate to the students the Show Applications Icons and further elements like:

- Search Box
- Search Result

Explain to the students the use of Status menu.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Ubuntu?

Q. Name the components of Ubuntu desktop.

Q. Define Desktop Background.

Q. What are icons?

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

Q. Can you change the desktop background?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 23, 24 and 25 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler and Hands-On given on Pages 25 and 26 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Hands-On and Lab Session section on Page 26 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to collect information about some more input/output devices and the purpose for which they are used.

3. Know about Computer Viruses

Teaching Objectives

Students will learn about

- What is a computer virus?
- How do you know your PC has a virus?
- Antivirus software
- How does a computer get infected with virus?
- How to prevent from a virus?

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that a computer virus can destroy the programs and files saved in a computer.

Introduce computer virus as a program that can infect the system and/or duplicate itself reducing the storage space.

Share examples of some computer viruses with the students.

Tell the students about the harms that may be caused by a computer virus.

Explain to the students the various methods by which a computer system may get infected with virus.

Make the students aware of the symptoms that tell that a computer system is infected by a computer virus.

Explain in detail to the students the various methods by which prevention can be taken from a computer virus.

Introduce the students to the concept of antivirus as a program developed to detect and remove virus from a computer system.

Share the names of some commonly used antivirus programs.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a computer virus?

Q. State any two harms caused by a computer virus.

Q. State any two methods by which a computer may get infected by Computer Virus.

Q. State any two symptoms that show that a computer system has been infected by a virus.

Q. State any two ways in which the user can prevent from a computer virus.

Q. What is antivirus program?

Q. What is the main purpose of an antivirus program?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 31 and 32 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 32 and 33 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 33 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to collect information about any computer virus and narrate it in the class.

4. Editing Text in LibreOffice Writer

Teaching Objectives

Students will learn about

- Starting LibreOffice Writer
- Selecting the Text
- Deleting the Text
- Find and Replace
- Spell Check
- Entering the Text
- Copying and Pasting the Text
- Undo/Redo
- Changing Case
- Thesaurus

Number of Periods	
Theory	Practical
3	2

Teaching Plan

While teaching this chapter, tell the students that LibreOffice Writer is word processing software in the category of application software.

Demonstrate to the students the steps involved in starting LibreOffice Writer.

Tell the students that editing is the process of making changes in the existing text.

Share with the students that to edit text, first it needs to be selected.

Tell the students about selecting text with the help of mouse and with the help of keyboard.

Introduce Cutting as moving the text from one place to another and Copying as duplicating text at another place also.

Demonstrate the steps to Cut-Paste and Copy-Paste text in a document.

Demonstrate to the students the different ways in which text can be deleted according to the requirement of the user.

Familiarize the students with the icons and the shortcut keys to Undo and Redo actions.

Introduce Undo as a feature used to cancel the command and Redo as a feature to reverse the action of Undo.

Tell the students about Find and Replace feature of Writer.

Introduce the students to Spell Check feature of Writer.

Show to the students the representation of spelling and grammar mistakes with different coloured wavy lines.

Demonstrate to the students the method of using Spelling and Grammar Check feature of Writer.

Introduce the students to Thesaurus feature and the steps involved in using it.

Extension

Ask the students some oral questions based on this chapter.

Q. What is editing?

Q. How is letter / word / text / paragraph selected using a keyboard?

Q. Which key is used to delete a letter?

Q. What is the use of Undo command?

Q. When is Redo command used?

Q. What is the difference between cutting and copying text?

Q. What is the use of Spelling and Grammar check feature?

Q. Which button is pressed to skip errors and continue working during Spelling and Grammar check?

Q. What is the use of Thesaurus?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 43 and 44 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 44 and 45 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 45 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to write a paragraph on My Favourite Festival in LibreOffice Writer, check for spelling and grammar mistakes and paste a printout in the computer notebook / practical file.

5. Formatting in LibreOffice Writer

Teaching Objectives

Students will learn about

- Changing Font Face, Style and Size
- Clone Formatting to Different Text
- Applying Superscript and Subscript
- Applying Border to a Paragraph
- Applying Bullets and Numbering
- Changing the Text Colour
- Highlighting the Text
- Applying Drop Cap Effect
- Inserting Watermark

Number of Periods	
Theory	Practical
2	2

Teaching Plan

While teaching this chapter, tell the students that formatting the text means changing the appearance and arrangement of the text.

Share with the students the default font face, style font size in a Writer document.

Demonstrate to the students the method of changing font face, style and font size.

Tell the students the steps involved in changing colour of the selected text in the document.

Demonstrate to the students the steps of changing clone formatting to different text.

Introduce highlighting feature of Word as marking important text and placing a coloured rectangle over it.

Show to the students the steps involved in highlighting text.

Share with the students about Superscript and Subscript features and the method of applying these features to the text.

Tell the students about Drop Cap effect and steps involved in applying this feature to the text.

Tell the students that Word has some in-built text styles which can be applied to the selected text.

Demonstrate to the students the method of:

- Applying borders
- Inserting Watermark

Introduce bullets as small symbol used to mark items in a list.

Show to the students the method of adding bullets or numbers to the items in a list.

Extension

Ask the students some oral questions based on this chapter.

Q. Define formatting a text.

Q. What is the default font / font size of text in a in LibreOffice Writer document?

Q. What do you mean by highlighting text?

Q. What is Subscript and Superscript?

Q. What is a watermark?

Q. What are bullets?

Q. When are bullets or numbers added to text?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 59 and 60 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 60 and 61 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 61 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

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

6. Introduction to LibreOffice Impress

Teaching Objectives

Students will learn about

- ☞ Opening LibreOffice Impress
- ☞ Create a New Presentation
- ☞ Deleting a Slide
- ☞ Components of LibreOffice Impress Window
- ☞ Adding a New Slide
- ☞ Saving a Presentation

- ☞ Viewing the Slide Show
- ☞ Exiting LibreOffice Impress
- ☞ Opening a Saved Presentation

Number of Periods	
Theory	Practical
3	2

Teaching Plan

While teaching this chapter, tell the students that LibreOffice Impress is a part of LibreOffice package or suite.

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

Demonstrate to the students the steps to opening LibreOffice Impress.

Familiarize the students with various components of LibreOffice Impress screen covering Title Bar, Menu Bar, Standard Toolbar, Formatting Toolbar, Slide Pane, Slide, Placeholder, Drawing Toolbar and Status Bar.

Introduce slide as a single page of a presentation.

Demonstrate the steps to:

- Create a new presentation
- Enter data on a slide in title and subtitle placeholders
- Add new slide to a presentation
- Deleting a placeholder
- Deleting a slide

Introduce slide show as full screen view of the presentation.

Show to the students the method of viewing a slide show.

Tell the students how to:

- Save a presentation
- Exit LibreOffice Impress

Extension

Ask the students some oral questions based on this chapter.

Q. What is LibreOffice Impress?

Q. Define Title Bar / Status Bar.

Q. What do you mean by Ribbon / Placeholder?

Q. What is a slide in a presentation?

Q. Which key is pressed to delete a selected placeholder?

Q. What are the various ways in which a slide show can be started?

Q. What are the steps to exit LibreOffice Impress?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 70, 71 and 72 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 72 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 73 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

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

7. Introduction to Internet

Teaching Objectives

Students will learn about

- ☞ Uses of internet
- ☞ Internet terms
- ☞ Requirements for an internet connection
- ☞ Mozilla Firefox

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, tell the students that a computer network is a connection between two or more computers.

Introduce Internet as a network in which millions of computers are connected to each other to share information and in an abbreviation of International Network.

Explain to the students the various uses of internet.

Share with the students the various requirements for an internet connection covering computer, telephone/cable line, modem/network card, software and company providing the connection.

Introduce the students to common internet terms like Website (collection of related web pages), Web Page (electronic page on a website), Home Page (main or first page of website), World Wide Web (largest collection of websites) and Web Browser (software to open websites).

Familiarize the students with the most common web browser, Mozilla Firefox and its components covering Title Bar, Menu Bar, Toolbar and Address Bar.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a computer network?

Q. What is internet?

Q. What are the uses of internet?

Q. What are the requirements for an internet connection?

Q. Define Website / Web Page / Home Page / World Wide Web / Web Browser.

Q. What does WWW stand for?

Q. Which is the most common Web Browser?

Q. Define Title Bar / Menu Bar / Toolbar / Address Bar.

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 79 and 80 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on page 81 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 81 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

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

8. More on Scratch

Teaching Objectives

Students will learn about

- ☞ Starting Scratch
- ☞ Deleting a sprite
- ☞ Understanding Blocks
- ☞ Choosing a sprite
- ☞ Choosing a backdrop
- ☞ Creating a Script

Number of Periods	
Theory	Practical
2	3

Teaching Plan

While teaching this chapter, tell the students that Scratch is a block-based programming language.

Demonstrate to the students the steps to start Scratch 2.0.

Make the students understand the features of Scratch.

Familiarize the students with the various components of Scratch window covering Sprite, Stage, Blocks, Color Palette, Scripts Area, Duplicate, Delete, Grow, Shrink, Green Flag, Stop button and Menu bar.

Show to the students the steps to:

- Choose a sprite from the Library
- Painting a sprite
- Delete a sprite

Make the students recall backdrop as background of the stage.

Tell the students the steps to choosing the backdrop in Scratch.

Make students understand Scratch blocks as puzzle-piece shapes that are used to create code in Scratch.

Demonstrate students how to create scripts in Scratch.

Extension

Ask the students some oral questions based on this chapter.

Q. What is Scratch?

Q. What are the features of Scratch?

Q. Name the various components of Scratch window.

Q. Define Sprite / Stage / Scripts Area / Green Flag / Stop button.

Q. What is a backdrop in Scratch?

Q. What are Scratch blocks?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 89, 90 and 91 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Page 91 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on page 92 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to develop a game in Scratch.

9. Visual Processing

Teaching Objectives

Students will learn about

- ☞ Students will learn about
- ☞ Picture Puzzle
- ☞ Directions and Maps

Number of Periods	
Theory	Practical
1	1

Teaching Plan

Introduce Picture Puzzle to the students in details with the help of proper examples for better understanding.

Tell the students about is a puzzle. Also, tell them how solve by giving some examples which will improve their understanding of the topic.

Tell the types of picture puzzle to the students which are:

- Odd One Out

- Find the Differences

Show the students what is direction and how to identify it with the help of analysis.

Explain the meaning of maps to the students and tell them how to use them with the help of directions.

Show examples for all the topics for better clarity of the lesson at the end.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a puzzle?

Q. What is a picture puzzle?

Q. How many types of picture puzzle are there?

Q. What is a direction?

Q. What is a map?

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 96, 97 and 98 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 98 and 99 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 99 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to practice to find out more types of picture puzzles.

10. Evolution of AI

Teaching Objectives

Students will learn about

- 1950-1960
- 1961-1970
- 1971-2000
- 2000-2010
- 2010-Present

Number of Periods	
Theory	Practical
2	1

Teaching Plan

While teaching this chapter, make sure that the students are well aware about AI and related topics taught in previous classes.

Tell the students what is AI which around us and what is the purpose of this in real life in simple words.

Explain the evolution of AI to the students along with their details:

- 1950-1960
- 1961-1970
- 1971-2000
- 2000-2010
- 2010-Present

Define the inventions of all these years along with their inventor to the students and how it changes out lives.

Relate all these to their daily life routine.

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

Extension

Ask the students some oral questions based on this chapter.

Q. Define the evolution of AI in the following years:

- 1950-1960
- 1961-1970
- 1971-2000

- 2000-2010
- 2010-Present

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 105 and 106 in the main course book as Checkpoint. Tell the students to try different activities under Mind Boggler given on Pages 106 and 107 in the main course book.

Take the students to the computer lab and let them practice the activity given in the Lab Session section on Page 107 in the main course book. This will enhance the ability of the students and serve as a Subject Enrichment activity.

Suggested Activity

Ask the students to practice more in Mystery Animal and search similar games.