6

DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for TLE

Quarter 1

Lesson

8

GOVERNMENT PROPERTY
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Lesson Exemplar for TLE 6
Quarter 1: Lesson 8 (Week 8)
SY 2025-2026

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TLE/QUARTER 1/GRADE 6 (WEEK 8)

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners demonstrate an understanding of using block codes.
B. Performance Standards	The learners perform the utilization of block codes to create animations/games/digital stories in a safe and responsible manner.
C. Learning Competencies and Objectives	***Learning Competency*** **1.** *use block codes to create animations/games/digital stories.* ***Learning Objectives*** *At the end of this lesson, the learners are expected to:* *1. demonstrate the use of sensing block codes* *2. demonstrate the use of operators block codes* *3. demonstrate the use of variables block codes.*
D. Content	**Scratch Programming (Online or Offline)** ● Sensing Block Codes ● Operators Block Codes ● Variables Block Codes
E. Integration	Problem-solving, Creativity, and Critical Thinking skills. SDG No. 4 Quality Education

II. LEARNING RESOURCES

Jilesen, M. (n.d.) Creating a short story animation in scratch. Pinnguaq. https://pinnguaq.com/learn/creating-a-short-story-animation-in-scratch/

jumekubo4edu. (2021, March 4). 07. Scratch - drawing and animating a sprite [Video]. YouTube. https://www.youtube.com/watch?v=tBSbgeA4qK0

Mohite, S. S. (2023, December 18). What are the arithmetic operators in Scratch: Improving maths with scratch. BrightChamps Blog. https://brightchamps.com/blog/arithmetic-operators-in-scratch/

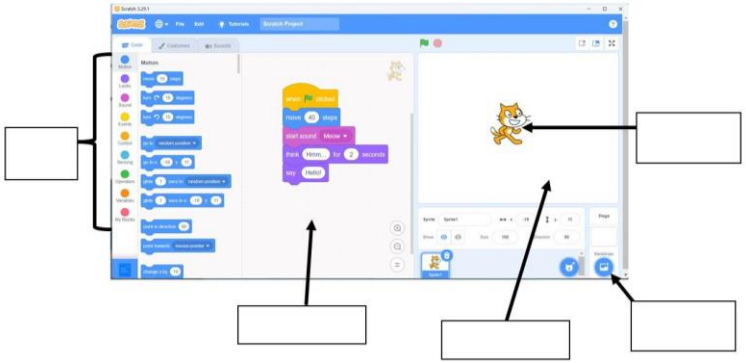
Pixabay. (n.d.). Free T-Rex Sound Effects download - Pixabay. https://pixabay.com/sound-effects/search/t-rex/

Raspberry Pi Foundation. (n.d.). Teach, learn, and make with the Raspberry Pi Foundation. https://raspberrypi.org/

Scratch - imagine, program, share. (n.d.). https://scratch.mit.edu/

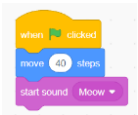
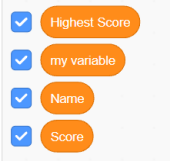
Scratch Team. (2021, October 28). How to make a story in scratch | Tutorial [Video]. YouTube. https://www.youtube.com/watch?v=uv8mbL-MC58

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**DAY 1** **1. Short Review** **Draw diagrams and flowcharts:** Group the learners by pair. Encourage learners to draw diagrams or flowcharts to plan for a **ride** from home to school. (If their home is within walking distance, they can use **walk**). One learner will draw the road map and the other learner will list down the steps on how to arrive in school. This helps them break down complex tasks and visualize the steps involved. Choose a representative group to present in the class. **2. Feedback (Optional)** Learners will reflect on the activity they have just played. 1. Why did they choose the map? (complex or simple) 2. What strategies did they use to complete the trip? (walk, run, bike, ride in a car, etc.) 3. What are the commands they gave to reach the destination? (walk straight, turn left, turn right, stop, etc.)	The teacher will facilitate the activity by pairing the students and giving directions on what to do. Required materials: Bond paper, pencil, ruler,
B. Establishing Lesson Purpose	**1. Lesson Purpose** This lesson will enhance the skills of the learners using advanced tools in Scratch programing. **2. Unlocking Content Area Vocabulary** Identify the four main elements in Scratch. **stage, sprites, script** and **programming palette**. These elements can be compared to a play.	Before the start of this lesson, the teacher or facilitator should have downloaded and installed the scratch program on the computer. This application is available in an online or offline version.



1) **Stage –** like the stage in a play. This is where everything will take place. The stage can have different backgrounds just like in a play.
2) **Sprites** – are the actors or main characters of the project. Sprites are programmed to do something in Scratch.
3) **Script** – tells the actors what to say or do. Each sprite is programmed with a script.
4) **Programming palette** – elements used to program the sprite to do or say something. Sprites must be programmed to carry out every function you want them to perform.
5) **Backdrop** - is a frame using which the look of the stage can be changed.

Other Terms to Consider:

	**Blocks** - are puzzle pieces used to create a code in Scratch. They are designed in such a way that they can be inserted above or below any other blocks.
	Costume - is a method in Scratch used to dress up a character or a sprite.
	**Variable -** is a tool in Scratch used to store information in the form of numbers or strings.

C. Developing and Deepening Understanding

SUB-TOPIC 1: SENSING BLOCK CODES

1. Explicitation

Introduction

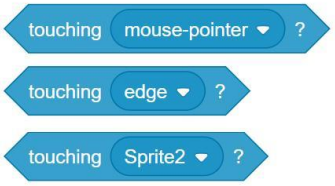
Scratch is a visual programming language that allows students to create their own interactive stories, games and animations. As students design Scratch projects, they learn to think creatively, reason systematically, and work collaboratively. Scratch was created by the Lifelong Kindergarten group at MIT Media lab and is available for free download at http://scratch.mit.edu. Once Scratch is downloaded to a computer, you do not need Internet access to create a project.

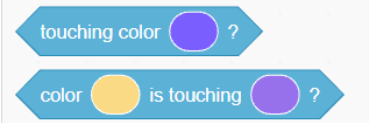
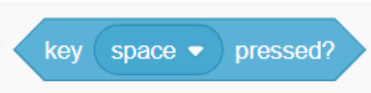
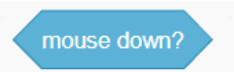
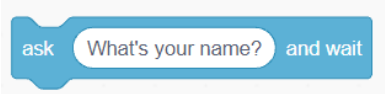
From your previous lesson, you have already tackled some codes like events block codes, motion block codes, sound, looks and backdrops.

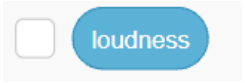
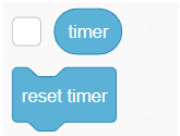
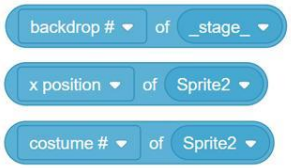
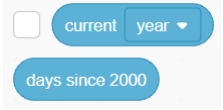
This time, we will discuss the use of Sensing Block Codes, Operators blocks codes, and Variables Block codes.

Sensing Block Codes – are one of the eight categories of Scratch blocks. They are color-coded light-blue and are used to detect things. They can be used to determine whether a sprite is touching another sprite or color, locate the mouse pointer, its distance from other sprites.

Types of Sensing Blocks

Descriptions	**Examples**
The **touching block** has options for detecting whether the sprite that owns the script is touching the mouse pointer (where you finger last touched on a tablet), the edge of the Stage, or another sprite:	

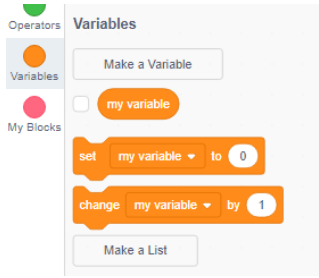
There are blocks for detecting whether the sprite that owns the script is **touching another color** (on the Stage or another sprite), or whether a color on this sprite is touching another color.	
The **key pressed** block has options for number, letter, and arrow keys. You need a keyboard to be able to enter keys. It detects whether the key is currently being pressed:	
The **mouse down** block detects whether the mouse is currently pressed, or the screen is being tapped or touched on a touchscreen:	
The **ask and answer** blocks are used to get text input from the user:	
The **ask block** works with a keyboard or with a virtual on-screen keyboard on a tablet. The **answer block** is a reporter block that reports a value and can be used as a variable.	
The **Sensing blocks** menu also contains several reporters blocks that can be used to get values:	

You can detect the current position of the **mouse-pointer** (or the current or most recent position of your finger on a tablet):	
You can detect the **loudness** of sound from the microphone. A pop-up window will ask the user for permission to use the microphone:	
The **timer** starts counting when the project loads, and can be set back to 0 with reset timer:	
You can also access **reporters** for the Stage and other sprites:	
There are reporters related to the **date and time** in the real world, in your local time zone:	

Variables Block Codes - it must be initialized with a value. That value can be a number, a text string, or a Boolean value (true or false). Once initialized, the variable can be referenced in other blocks and scripts by its name.

How to add variable in scratch:
Step 1. Click on **Variables** in the Code tab, then click on **Make a Variable**.

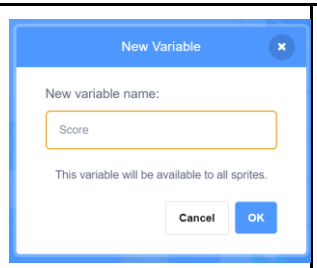
Step 2: Type the **name** of your variable. You can choose whether you would like your variable to be available to all sprites, or to only this sprite. Press **OK**.



The teacher may choose a topic from the Scratch Tutorials for the students.

The teacher may review the previous blocks of code they used before they continue in the next topic.

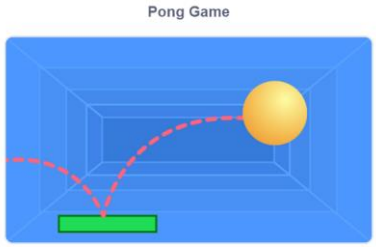
A variable named "Score" could be used to keep track of a player's score in a game. Once you have created the variable, it will be displayed on the Stage, or you can untick the variable in the Scripts tab to hide it.



2. Worked Example

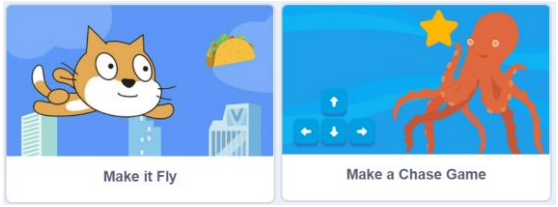
Activity 1: Pong Game

Before we can use the sensing and variable blocks, we need to create a simple game environment. In our example, we will use the **Pong Game**. Based on **Scratch Tutorial** example**.**



3. Lesson Activity

Create a similar Game with the use of Sensing Blocks and Variables. You may select at the Tutorial Menu.



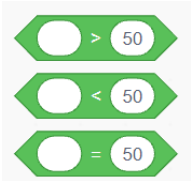
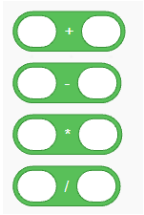
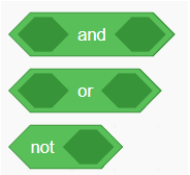
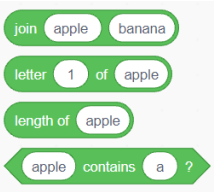
DAY 2

SUB-TOPIC 2: OPERATORS BLOCK CODES

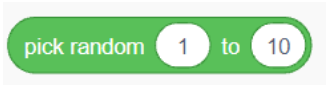
1. Explicitation

Operator Block Codes – are used to compare variables and values, do calculations with numbers, and work with strings (text). The hexagonal 'Boolean' blocks are used as conditions and return true or false. These blocks can be used in Control blocks with a hexagonal input.

For activity 1, see worksheet for the learning activity that the students will accomplish.

Comparison operators:	Math operations:
 When you use = with text you can mix upper- and lower-case letters, so (YES = yes) returns true.	
Condition operators:	**Text string operators**
	

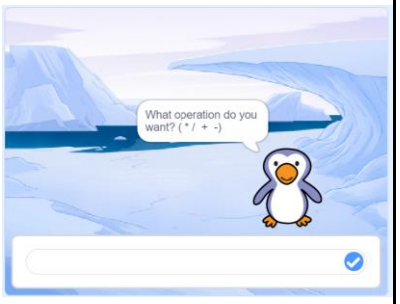
You can choose random numbers between the smallest and largest number (including those numbers). A number from 1 to 10.



2. Worked Example

Activity 2: Basic Calculator

Practice the use of Operators Block codes in a simple Math Game.



3. Lesson Activity

Level-up your Math Game by adding other Math operators in it. So, the user may add variable for operation to Add, Subtract, Divide and Multiply the given 2 Numbers. Add backdrop for better presentation

For activity 2, see worksheet for the learning activity that the students will accomplish.

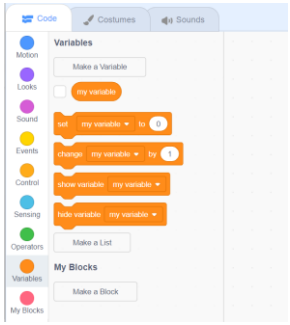
and change sprite. (to change the sprite, you need to copy all codes from previous sprite or copy paste the sprite in Costume editor)

DAY 3
SUB-TOPIC 3: VARIABLES BLOCK CODES

1. **Explicitation**

We have discussed and used variables in our previous activities. In fact, variables are a powerful tool in programming. It's like a container that can store some value. We can simply think of a box which has a number in it. The number inside may change its value by using operators in a program. This makes variables very helpful. Examples of values a variable can store include numbers like 123, words like "abc," and true/false statements.

Scratch contains the following blocks:



Where:

- **Variable:** This block is used to reports the value of a variable
- **set variable to 0:** This block sets a selected variable to a specified value.
- **change variable by 1**: This block changes the value of the selected variable.
- **show variable:** This block displays the specified variable in the project player.
- **hide variable:** The block reverses the "show variable" block.

Types of Variables

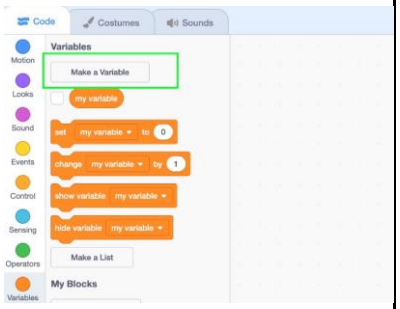
1. **Global variable.** It is the default variable. It can be modified or accessed by any sprite within the project or stage, regardless of where it was initially created. In Scratch, users or programmers can designate a variable as global by selecting the option "choose for all sprites" or "choose for this sprite only." Opting for "choose for all sprites" means the variable is accessible to all. Global variables are stored in RAM and are the default for the files in which they are created.

2. **Local Variable.** This can only be changed or accessed by the sprite where it was made. Other sprites cannot use this variable. In Scratch, users or programmers can make a variable local by selecting "choose for this sprite only." This means only the current sprite can use it.

3. **Cloud variable:** Cloud variables enable users to store data on the Scratch server. These variables are indicated by a cloud-like symbol before their names and update rapidly. Beginning with Scratch 3.0, cloud variables exclusively support numeric data and are limited to 256 characters in size. Each Scratch project allows for the creation of up to 10 cloud variables.

Two different ways to make a variable.

1. **Using Built-In variable:** Scratch has a built-in variable named “my variable”, so the users can directly use it.
2. **User-defined variable:** In case the user wishes to make his own variable, with a different name, then click on the “make a variable” button in the variable palette. After clicking the “make a variable block” a form will appear on the screen. Then, fill in the name of the variable as you have previously made.



2. Worked Example

Activity 3: Variable Block Codes

To understand the function of variables, we will create two projects.

3. Lesson Activity

This part will be optional to give time for creating Digital Story.

The teacher will give directions to the class. He/she should check the draft layout story of the learners before they can proceed to the hands-on activity.

For activity 3, see worksheet for the learning activity that the students will accomplish.

	DAY 4 **SUB-TOPIC 4: CREATING A DIGITAL STORY** **1. Explicitation** **INTRODUCTION** The last activity we will do is to create a short folktale animation or digital story. While students will learn about myths, legends, and folktales, they will also enhance their programming skills and knowledge algorithms. Students may use their own language skills to let the characters speak to each other and bring the folktale to life. Students will choose or research indigenous story, myth, or legend in their region. **2. Work Example** **Activity 4: Biag ni Lamang Digital Story** See the example and modify its content. https://scratch.mit.edu/projects/1013616182 **3. Lesson Activity** **Instructions:** 1. Divide the class in smaller groups with 3 members and design their own Digital Story. (Choose a famous story in their community. myth, legend, folktale, or epic) 2. Assign task for every member of the group. (A writer of the storyboard, Designer of background and character, and the programmer in scratch). 3. Create a draft story using Paper and Pencil to plan for the content. It should have at least 2-3 scenes background. 4. Please refer to the Rubric to be guided accordingly.	For activity 4, see worksheet for the learning activity that the students will accomplish.
D. Making Generalizations	**1. Learners' Takeaways** ● What are the different Sensing Blocks have you used? ● When do you need to use variables in scratch? ● Why is it important to use variables? **2. Reflection on Learning** Complete the sentence below to reflect on the Lessons discussed. ● When working with Sensing Block Codes, it is important to… ● A helpful tip for creating a digital story is to… ● To effectively use variables and list in scratch, remember to…	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		NOTES TO TEACHERS
A. Evaluating Learning	**1. Formative Assessment** 1. What are Sensing Block Codes used for in Scratch programming? a. Create animations/games/digital story b. Change backgrounds c. Detect things like sprite touching another sprite d. Change the color of sprites 2. Which of the following is NOT one of the elements in Scratch programming compared to a play? a. Stage b. Sound c. Sprites d. Programming palette 3. How can a variable be defined in Scratch? a. By using a camera b. By clicking on a sprite c. By clicking on Variables in the Code tab and then Make a Variable d. By changing the backdrop 4. What is the purpose of the Programming palette in Scratch? a. Change the background b. Dress up characters c. Remove sprites d. Program the sprite to perform functions 5. What do Sensing blocks do in Scratch? a. Change sprite colors b. Detect things c. Add background music d. Make sprites move in a pattern 6. Which block is used to get text input from the user in Scratch? a. Ask and answer b. Touching block c. Backdrop block d. Key pressed block	**Answer Key** **1. c** **2. b** **3. c** **4. d** **5. b** **6. a** **7. c** **8. b** **9. c** **10. b**

<table>
<tr><td></td><td colspan="3">7. What is the function of Variables Block Codes in Scratch?
a. Change sprite costumes
b. Add background images
c. Store information and values
d. Play sounds

8. What is the role of Comparison operators in Scratch programming?
a. Create animations
b. Compare variables and values
c. Draw diagrams
d. Change sprite locations

9. How many types of variables are there in Scratch?
a. 1 b. 2 c. 3 d. 4

10. What does a Local Variable mean in Scratch programming?
a. Accessible by any sprite
b. Can only be changed by the sprite where it was created
c. Stored in the cloud
d. Used for text manipulation

2. Homework
Review this video on creating a Start Screen in Scratch. Then create something on your project. https://www.youtube.com/watch?v=b0MhF8pkSLw</td><td></td></tr>
<tr><td rowspan="4">B. Teacher's Remarks</td><td>Note observations on any of the following areas:</td><td>Effective Practices</td><td>Problems Encountered</td><td rowspan="4">The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement and other related stuff.

Teachers may also suggest ways to improve the different</td></tr>
<tr><td>strategies explored</td><td></td><td></td></tr>
<tr><td>materials used</td><td></td><td></td></tr>
<tr><td>learner engagement/ interaction</td><td></td><td></td></tr>
</table>

	Others			activities explored/ lesson exemplar.
C. Teacher's Reflection	*Reflection guide or prompt can be on:* ▪ *principles behind the teaching* *What principles and beliefs informed my lesson?* *Why did I teach the lesson the way I did?* ▪ *students* *What roles did my students play in my lesson?* *What did my students learn? How did they learn?* ▪ *ways forward* *What could I have done differently?* *What can I explore in the next lesson?*			Teacher's reflection in every lesson conducted/ facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.