Unit 3, Lesson 4: Set up your scoring!

Lesson Intro:

Theme of the Day
Today students will introduce a variable into their games that will give positive points when their rocket ship collects fuel.

Learning Objectives	Concepts (Social & Cross Curriculum)
● Students can add scoring to their game so that players can accomplish a goal. ● Students can use and understand variables.	● Feedback ● Variables

Vocabulary	Guiding Questions
● Variable ● Debugging	● How might we make our games better by looking at other designer's games and working with friends? ● How might we create a scoring system that will allow players to achieve a goal?

Resources
● Computers ● Scratch access and logins ● Game Study sheet ● Score! Guide ● Space Bucks ● CIC On-Ramp 3.4

Lesson Procedure:

Explore (15 min)
Don't Forget: Have computers loaded with Scratch and logins for students. Have the Game Study sheet ready for students.
Mini-lesson: For today's exploration, students are going to play a game that someone else created. While playing the game, the students' job will be to think about what made it a good game, or what could make it better. Tell students to focus on the controls of the game, and the game's sound effects. Students will be using the Game Study sheet to find and play the demo game for this exploration. While they play the game, they should think about the questions on the Game Study sheet. After 10 minutes, have a discussion with students about the games they played and the questions on the sheet. Give out Space Bucks to students who are on task and independent.

Teacher-Guided Learning (10 min)
Don't Forget: Have the Score! Guide ready for students.
Mini-lesson: Today students are going to be adding the element of a score to their game. Scores and goals are important for a game because without them, the game could go on forever. It might be fun at first, but playing forever would get old! Scores give players a feeling of accomplishment. Later in the unit students will be creating goals for winning and losing the game. Discuss the concept of **variables** to students. A variable is something that varies or changes depending on something else. For example, today students will be creating a score variable that will keep track of how many fuel sprites the player collects. The score is the variable because it varies or changes depending on how well the player does. The spaceship sprite and fuel sprite will interact to create a score. Or in other words, when the spaceship sprite touches the fuel sprite, the player gains one point. Walk your students through as much of the Score! Guide as you think is necessary. Remind them that it is important to follow directions carefully.

If students finish early, they can complete the Bonus Code. In this section, students will be adjusting how fast the rocket ship moves when they press the controls.

Give out Space Bucks to students who are on task.

Partner/Team Practice (20 min)
Don't Forget: Have the Score! Guide ready for students.

Mini-lesson:
Explain to students that they will be using the Score! Guide to add a score to their game. If students finish early, they can complete the Bonus Code. In this section, students will be adjusting how fast the rocket ship moves when they press the controls.
 	
Remind them to follow the directions carefully and ask a friend if they run into a problem and need assistance.
 	
While students are working, circulate to see how they are following directions and how they have changed the controls and music. Encourage them to ask other students what they are using for the music and share their projects with others.
 	
Remember:
    a) If they change code so much that the ship is not working, they will need to debug it.
    b) If students have been gone or are new to the class, they can remix "CIC On-Ramp 3.4 " and will be caught up on code from previous lessons.
 	
Give out Space Bucks for independence and creativity.

Reflect/Connect (5 min)
Don't Forget: *N/A*
Mini-lesson: Gather together with students and discuss how adding a score and changing the speeds on the controls really helped improve their games. Have a few students who finished the Bonus Code show off their game and get feedback on the speed of their controls.

Preview the next lesson for students. Tell them that reaching a goal is one of the most exciting parts of a game. Ask your students the following question:

What do you think a good end goal would be in your game for a player to win?

Give out Space Bucks for students who are on task and have good communication skills.

Models:

Game Study sheet

GAME STUDY

① Sign into Scratch

Reimagined227

② Search for "CIC Game Study 1" and push enter

🔍 cic game study 1

③ Click on "CIC Game Study 1"

CIC Game Study 1 remi
Reimagined227

④ Click on the "Remix" button

◎ Remix

⑤ Click the green flag 🚩 to start your game!

⑥ Follow the game's directions

QUESTIONS

What controls did the game use?

Was the game too easy? Too difficult? Just right?

How did you win or gain points?

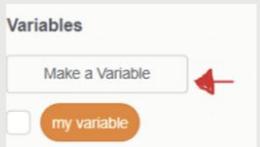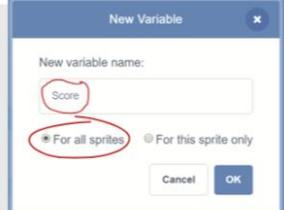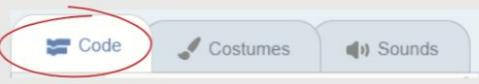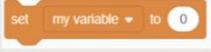Did you like the music in the background?

Did it make the game more fun?

</> CODEINCLASS
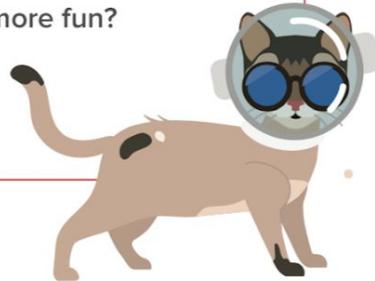
Score! Guide

SCORE! GUIDE

① Load your saved project

Space Unit 3 remix
Last modified: less than a minute ago
See inside

② Click on the Fuel Sprite

Rocket · Fuel

③ Click on The Variable Category

Variables

④ Click on Make a Variable

Variables
Make a Variable
my variable

⑤ Name the Variable "Score." Click OK

New Variable
New variable name:
Score
● For all sprites ○ For this sprite only
Cancel · OK

⑥ Click on Code

Code · Costumes · Sounds

⑦

IN	FIND	CHANGE	BUILD
Events	when 🏳 clicked	Change the block to look like this set Score to 0	when 🏳 clicked / set Score to 0
Variables	set my variable to 0	my variable / ✓ Score / Rename variable / Delete the "Score" variable	

⑧ Click on the Rocket Ship Sprite

Rocket · Fuel

CODEINCLASS

SCORE! GUIDE

⑨ IN	FIND	CHANGE	BUILD	
Variables	change my variable ▼ by 1	change Score ▼ by 1	Add this block into your Rocketship's Code	when 🏴 clicked forever if touching Fuel ▼ ? then change Score ▼ by 1 ← say Power Up! for .5 seconds
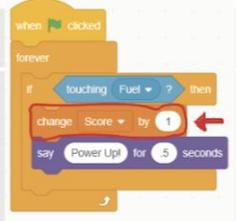
⑩ Click the green flag 🚩 to try out your game!

THE SCORE SHOULD GO UP BY 1 EVERY TIME THE ROCKET SHIP TOUCHES THE FUEL!

BONUS CODE

CHANGE THE SPEED OF THE SPACESHIP!

① First, Try different numbers for speed...

when w ▼ key pressed
change y by 10

when s ▼ key pressed
change y by -10

when d ▼ key pressed
change x by 10

when a ▼ key pressed
change x by -10
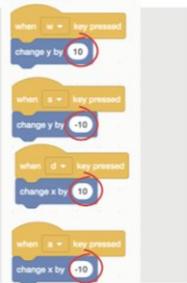
② **All four numbers must be the same**, and you need to **keep the - in front of 2 numbers**.

when up arrow ▼ key pressed
change y by 50

when down arrow ▼ key pressed
change y by -50

when right arrow ▼ key pressed
change x by 50

when left arrow ▼ key pressed
change x by -50
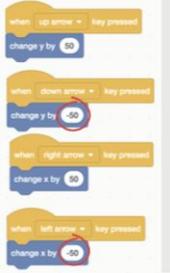
③ Click the green flag 🚩 to try out your game!

How does that change the movement of your ship? What is the right number for perfect control? You can work with a partner to figure this out.

Remember, if your ship controls stop working, you can copy the code with the 10s in it to get them back on track!

</> CODEINCLASS