

Treasure Hunt Starter Activity

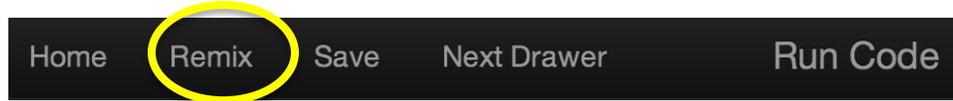
In this activity, you will program a game where the player uses the arrow keys to control a character, moving around and “collecting” treasures by bumping into them to increase the score.

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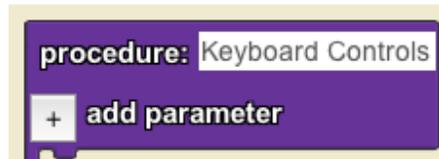
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Part 1: Keyboard Controls

1. Go to <http://www.slnova.org/openiduser4/projects/1334/>
2. Click “REMIX” then rename project with “Treasure Hunt Your Name.”

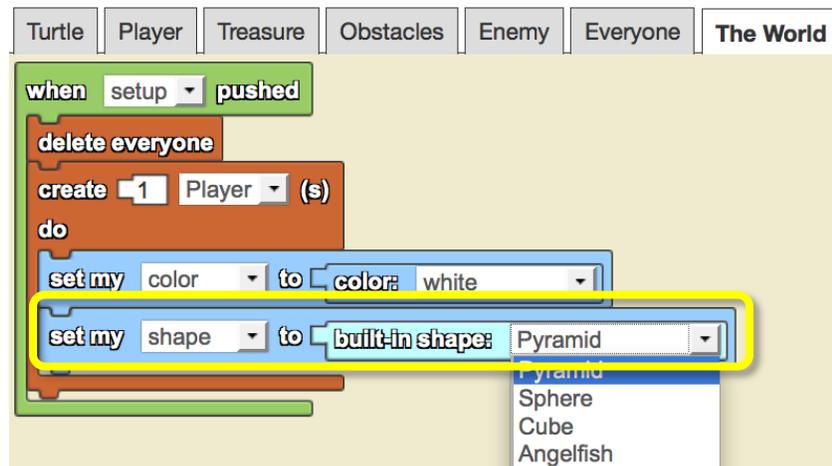


3. Click on “Run Code”, then scroll to SpaceLand and click the “setup” button (you should see 1 gray cube in the center of the terrain).
4. Click “play game” to run the program.
5. Try the keyboard arrow keys. Notice that these do not work correctly.
6. Find the “Keyboard Controls” Procedure on the “Player” page and edit the blocks so that the arrow keys work correctly.



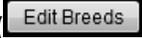
Part 2: Changing Traits

1. Go to “The World” page and add a “set my ___ to ___” block where the Player is created
2. You may change the Player’s shape, size, and color
3. Select the Player’s shape from the “built-in shape” block in the **Traits** drawer



4. Test your code before continuing (click “Run Code” and “setup”).

Part 3: Treasure Breed

1. We will now introduce a Treasure breed that the Player collects.
2. Use the Edit Breeds button () to create a new breed called Treasure. Notice the new Treasure page in the Workspace.

Part 4: Treasure Agents

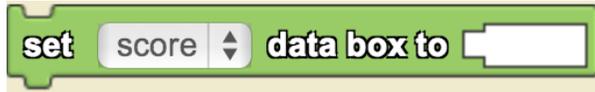
1. Go to “The World” page and find the “when setup pushed” block that is there.
2. Determine how to “create (25) Treasure” agents and “scatter” them. Hint: Look in the **Agents** drawer.
3. Find a fitting shape for the Treasure agents by dragging out a “set my ___ to ___” block and specifying a shape from the “built-in shapes” block. See Step 2 if you need to review the steps.
4. Change the color and size of the Treasure agents. Notice the new Treasure agents in SpaceLand after clicking the “Run Code” and the “setup” buttons.

Part 5: Player Collects Treasure

1. Program a collision between the Player agent and the Treasure agent to allow the Player to collect the Treasure. The Treasure will need to seem to be “collected” by disappearing. There are two ways to do this: 1) you can either program the Player to delete the Treasure agent that it is colliding with, OR 2) program the Treasure to delete itself.
2. Pick one of the two solutions provided, and then select the agent’s page that will be doing the action.
3. Place the “on collision with ___, do” block on the selected page.
4. Click “Run Code”, “setup” and “play game.” Over time you should see fewer and fewer Treasures as the Player collides into them.

Part 6: Count Treasure

1. In “The World” page, determine how to set the “score” data box to display the starting number of Treasures that you have collected (this number should always start at 0) when the “setup” button is pushed. Hint: The “score” data box block is inside the **Interface** drawer.



2. The data box must stay consistent with the new code written in Part 5— to increase the score each time a Treasure is collected.
3. Use the “__ data box” block from the **Interface** drawer to obtain the current score. Add 1 to set the data box text to display the new score.



4. In SpaceLand, click “setup” and “play game” to start playing your game. When the Player bumps into a Treasure agent, the Treasure should disappear and the score should increase by 1.

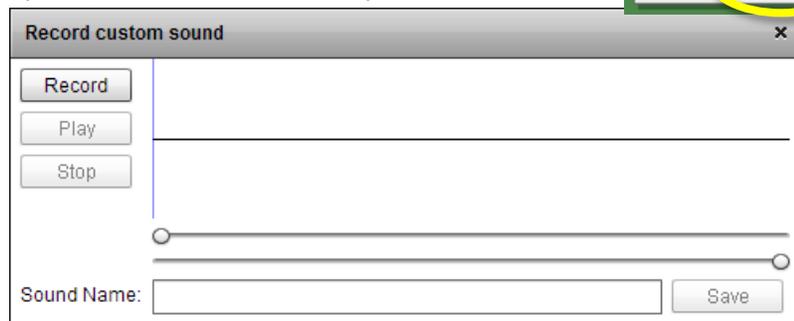
Part 7: Extra Effects

Read the effects below and choose one or two to add to your game, or come up with your own effect.

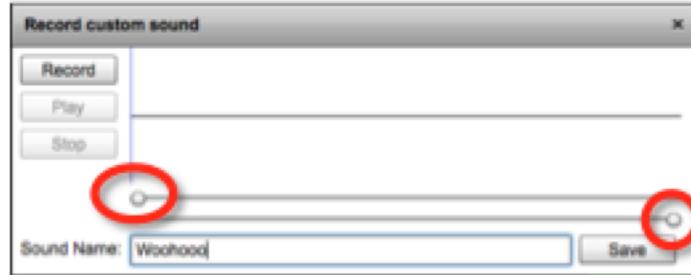
- **Sound**: Have the Player “say” something, like “Whoohoo!” when it runs into a Treasure.
 - You can record your own sound effect by using the “play sound” block in the **Sound** drawer.
 - Click the “record” button.



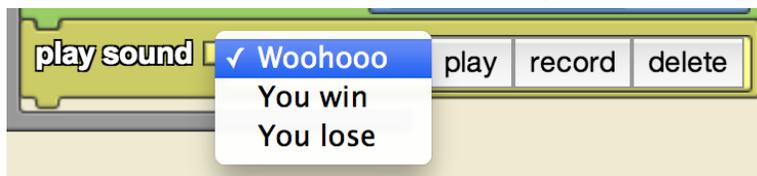
- Scroll up to SpaceLand. You may need to enable recording up and/or the address bar on your browser.



- Click “Record” to start recording your own sound.
- Click Play to hear the sound that you recorded.



- You can remove excess sound by cutting off chunks of the sound at the beginning and end using the adjustable scroll buttons. See highlighted with red circles above.
- Or click “Record” to try again. When you are satisfied with your sound, give the sound a name that will help you remember what it is and click “Save.”
- Back in Workspace, select the sound you want from the drop down menu in the block.



- *Score*: Change the number of points each Treasure is worth and make sure this is reflected in your “score” data box. For example, make each Treasure worth 5 points instead of just 1.
- *Size*: Have the Player increase its size by 1 each time it collides with a Treasure.
 - Use the “set my ___” block and follow the same steps from the example of increasing the score.
 - You can change the number 1 to something smaller (like 0.5) if the Player growing in size too quickly. Hint: The “set my ___” block is in the **Traits** drawer.
- *Treasure agents*: Increase or decrease the number of Treasure agents that are created.
- *Color*: Create some Treasure agents that are blue. Make the blue treasure worth more points when the player bumps into them.
 - Use the “if ___” block to check the color of the treasure.
 - Create some yellow Treasure agents and if the Player collides with those, points are taken away.

Part 8: Obstacle Breed and Agents

1. We will now introduce an Obstacle breed that the Player must avoid to keep from losing points.
2. Use the Edit Breeds button () to create a new breed called Obstacle. Notice the new Obstacle page in the Workspace.
3. Create 25 Obstacle agents
4. Set their shape, size, and color.
5. Scatter the Obstacles.

6. Test your code before continuing.

Part 9: Player vs. Obstacle

1. Program an “on collision with ___” block between the two breeds so that the Player loses points when it collides with an Obstacle agent.
2. The score should decrease by some amount and the Obstacle should disappear. (Refer to Parts 5 and 6).
3. Click “Run Code”, “setup”, and “play game”. When the Player agent collides with an obstacle, the score should decrease.

Part 10: Enemy Breed and Agents

1. Introduce an Enemy breed that the Player must avoid to keep from dying.
2. Use the Edit Breeds button () to create a new breed called Enemy. Notice the new Enemy page in the Workspace.
3. Create 10 Enemy agents
4. Set their shape, size, and color.
5. Scatter the Enemies.
6. Test your code before continuing.

Part 11: Enemy Movement

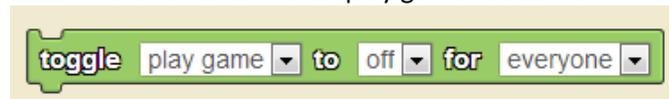
1. Go to the “Enemy” page and determine how to make the Enemy agents move around SpaceLand while “forever” is toggled on. Hint: Look in the **Interface** and **Movement** drawers.
2. Click on “Run Code”, then the “setup” and the “play game” buttons. The Enemy agents should move on their own while the Player remains controlled by keyboard arrow keys.

Part 12: Player vs. Enemy

1. Program the Player to delete itself when it collides with an Enemy agent (Refer to Parts 5 and 6)
2. Click “Run Code”, “setup”, and “play game.” Check to make sure that YOU, the PLAYER, are dying when running into an Enemy agent, and not vice versa.

Part 13: End the game

1. End the game when the Player reaches a certain score or if the Player dies.
2. If either of these conditions is true, use the “toggle ___ to ___ for ___” block from the **Interface** drawer to turn the “play game” button off.



3. Test your code before continuing.

Part 14: Adjustments

- *Agent numbers*: Adjust how easy or hard your game is by changing the number of Treasures, Obstacles and Enemies.
 - Test the difficulty by going to SpaceLand and clicking “setup” and “play game” to play your game.
- *Send a message*: Use a data box widget to tell the player what his or her goal is, and/or to give the player a message at the end of the game.
 - You may need to drag the “Message” data box, as it may be overlapping other widgets. Make sure to click “Edit Widgets” to exit out of Widget mode.)



- Data Box Widgets allow you to set the text whatever you want, ex: “You need to get 30 points to win! Good luck!”
- Set the text in the World page by using the “set ___ data box to ___” block so that when “setup” is pushed, your new message will appear in the “Message” data box.



- You can also set the Message text to a message like “You win!” or “Try again” right before the “play game” button is toggled off.