

SHARK BYTES



SUGGESTED TIME
45 - 60 MINUTES

OBJECTIVES

By completing this activity students will:

- + develop greater fluency with computational concepts (conditionals, operators, data) and practices (experimenting and iterating, testing and debugging, reusing and remixing, abstracting and modularizing) by working on a self-directed game project

ACTIVITY DESCRIPTION

- In this activity, students will create a starter game project that can be revisited and extended during the Score, Extensions, and Interactions activities in the Scratch Creative Computing curriculum guide. Optionally, show the Shark Bytes example starter project, and have Shark Bytes handout available to guide students.
- Give students time to start building their games or let them remix one of the starter projects.
- Encourage students to get feedback on their games-in-progress. Allow students to walk around exploring each other's projects, asking questions, and giving feedback.
- Ask students to respond to the reflection prompts on paper or in a group discussion.

RESOURCES

- Shark Bytes handout
- Shark Bytes example starter project
<http://scratch.mit.edu/projects/43794712>
- Shark Bytes studio
<http://scratch.mit.edu/studios/855882>

REFLECTION PROMPTS

- + What was challenging about designing your game?
- + What are you proud of?

REVIEWING STUDENT WORK

- + Do games include conditionals, operators, and data?

NOTES

- + This game introduces some basic Game Artificial Intelligence for navigation - the fish is programmed to avoid collisions with the shark, but the starfish is not. Help students identify the code that makes this happen.

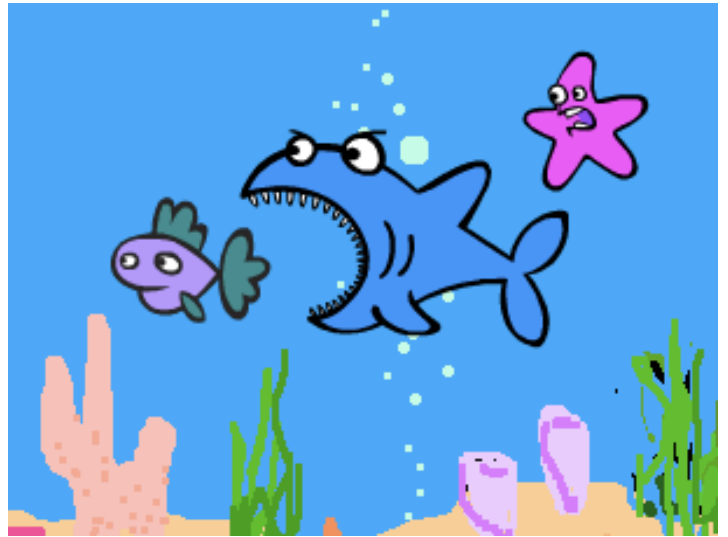
NOTES TO SELF

- _____
- _____
- _____
- _____

SHARK BYTES

HOW CAN YOU USE SCRATCH TO BUILD AN INTERACTIVE GAME?

In this project, you will create a game. This game includes interactions between sprites, score and levels. It's a classic chase game where you help the shark catch the fish, but avoid the starfish.



START HERE

- ❑ Create three sprites: one for the player to control (shark) one to catch (fish) and one to avoid (starfish)
- ❑ Make your shark sprite interactive.
- ❑ Bring your computer-controlled characters to life!

THINGS TO TRY

- ❑ How do you add difficulty to your game? Creating different levels, using a timer, or keeping score are a few examples of things you could do.
- ❑ Use the make a variable block to keep score!

Shark: when green flag clicked, go to mouse-pointer, forever loop: if touching Fish1? then say Yum! for 0.5 secs, stop all; if touching Starfish? then say Yuck! for 0.5 secs, stop all.

Fish1: when green flag clicked, set size to 50%, forever loop: if distance to Shark < 150 then point towards Shark, turn 180 degrees, move 25 steps, if on edge, bounce; else turn pick random -10 to 10 degrees, move 5 steps, if on edge, bounce.

Starfish: when green flag clicked, set size to 50%, forever loop: turn pick random -10 to 10 degrees, move 5 steps, if on edge, bounce.

This controls the shark - if touching the fish or starfish, the game ends.

This controls the fish - if the shark is near it swims away.

This controls the starfish - it swims around the stage semi-randomly.

BLOCKS TO PLAY WITH

when space key pressed, when up arrow key pressed, when m key pressed, when I receive message1, score, set score to 0, change score by 1, show variable score, hide variable score, -, +, <, =, >, not, and, or, pick random 1 to 10, touching?, touching color?, color is touching?, timer, reset timer.

FINISHED?

- + Add your project to the Shark Bytes Studio: <http://scratch.mit.edu/studios/855882>
- + Help a neighbor!

This work is a derivative of "[Scratch Creative Computing Curriculum Guide](#)" by the [ScratchEd](#) team at the Harvard Graduate School of Education, used under [CC BY-SA](#). This work is licensed under [CC BY-SA](#) by [Dylan Ryder](#).

