

## Adventure on the High Seas Solution Sheet

Use this solution sheet to help students as they watch instructional videos at [www.cs-first.com/highseas](http://www.cs-first.com/highseas) and complete the activity in Scratch. All code blocks are color coded according to their category. For additional scripting and suggestions for leading the activity, please see the lesson plan at: [www.cs-first.com/highseasplan](http://www.cs-first.com/highseasplan).

### Before the Activity: Create a Club [optional]

Create a club to receive CS First and Scratch usernames and passwords for your class. This will enable students to save their work. You'll be able to access their shared projects from your club dashboard. Usernames can be reused in future clubs or activities. It takes about two minutes to create a club.

To create a club, go to: [www.cs-first.com/start-club](http://www.cs-first.com/start-club).

Follow the instructions, and select "Adventure on the High Seas" as your theme.



### High Seas Activity

[Explore materials](#) | [See student examples](#)

Sample CS First with "High Seas," an introductory activity designed for use in a classroom setting or at a conference, hackathon, or other event like Hour of Code. "High Seas" is a one-time, standalone activity and not part of a regular CS

**Choose This Theme**

**Instruct students to join your club [optional]**

Before students begin the activity, instruct them to join your club using these scripted directions:

1. Go to [www.cs-first.com/go](http://www.cs-first.com/go) and select "enter club code."

I am a **student**

**Username \***

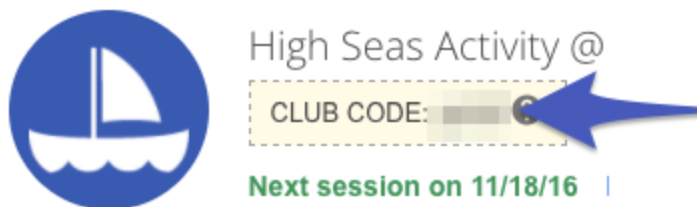
**Password \***

**Sign In**

First day of club, or need a new username and password?

**Enter Club Code**

2. Enter our club code (access the your club's code here: [www.cs-first.com/dashboard](http://www.cs-first.com/dashboard)).



3. Click "yes" three times to confirm location and activity.

- Write down your username and password. You'll use this password to sign in to Scratch and save your project.

**Username:**

**Password:**

Please record your username and password in your printed passport for use next time.

**I'm Done**

- Click I'm done, and sign in. You can type your username and password, or click "show my username and password" to have it entered for you.

I am a **student**

**Username \***

**Password \***

**Sign In**

First day of club, or need a new username and password?

**Enter Club Code**

I am an **educator** or **volunteer**

Now, use your username and password to sign in! You will use this to sign in from now on.

[Show my username and password](#)

- Begin watching the first video.

## Video 1: High Seas Introduction

In this video, students will:

1. Watch a video that introduces the activity.
2. Click the green arrow to watch the next video.

Google Computer Science First

Click to Play

0:00 / 2:16

Video speed: Normal

1 2 3 4 5 6 Wrap Up Next

Instructions

Watch this screencast to learn about CS First and the project you'll build today. Then click the green arrow to move on to the next video.

After watching the video, click the next arrow to move on.

## Video 2: Create a Scratch Account and Sign-in

In this video, students will:

1. Open the starter project by clicking the project link next to the video.

Google Computer Science First

Click to Play

0:00 / 1:18

Video speed: Normal

Back 1 2 3 4 5 6 Wrap Up Next

Overview

Watch this video to learn how to create a Scratch account.

Instructions

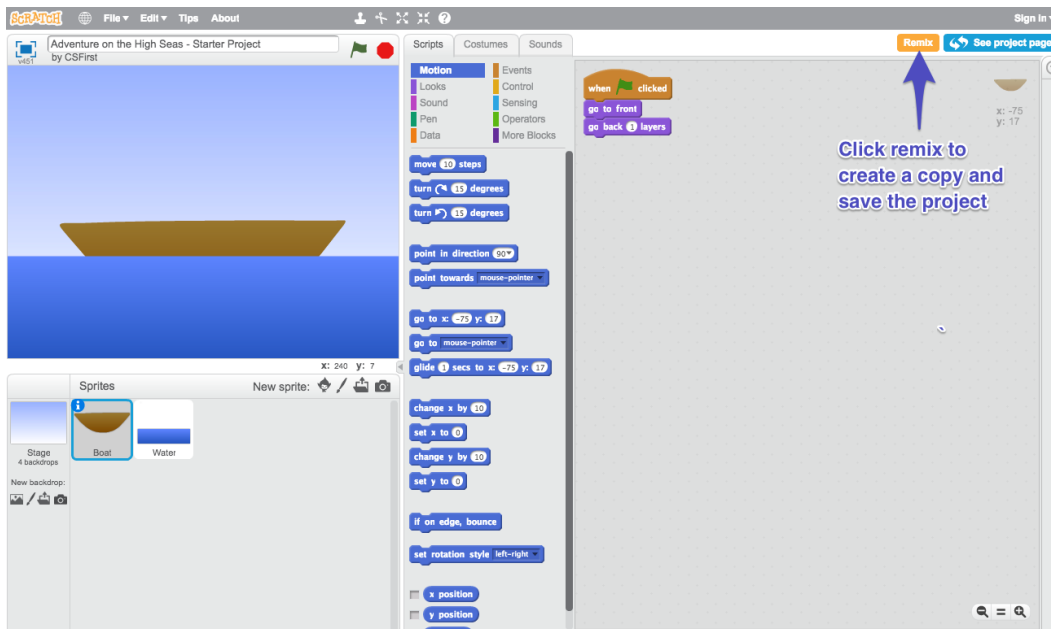
1. Click the starter project link next to this video.  
2. Then, if you'd like to save your project, click remix, and create a Scratch account.

Links

- Adventure on the High Seas Starter Project

After watching the video, open the Scratch starter project.

- [optional] If you'd like students to save projects and you haven't created a club instruct them to click remix and create Scratch accounts



- Return to CS First and move on to the next video.

**Overview**

Watch this video to learn how to create a Scratch account.

**Instructions**

1. Click the starter project link next to this video.
2. Then, if you'd like to save your project, click remix, and create a Scratch account.

**Links**

- [Adventure on the High Seas Starter Project](#)

**After opening the starter project, click the next arrow to move on.**

**Video 3: Animate a Wave****In this video, students will:**

1. Add a “change whirl effect” block to create the wave effect.
2. Add a “change whirl effect by -25” to reverse the wave effect.
3. Place a “wait” block after each “change effect by” block.
4. Make the wave keep going with a “forever” block.
5. Add a “when flag clicked” block to run this code stack when the flag is clicked.

Code for  
the **Water**  
sprite:

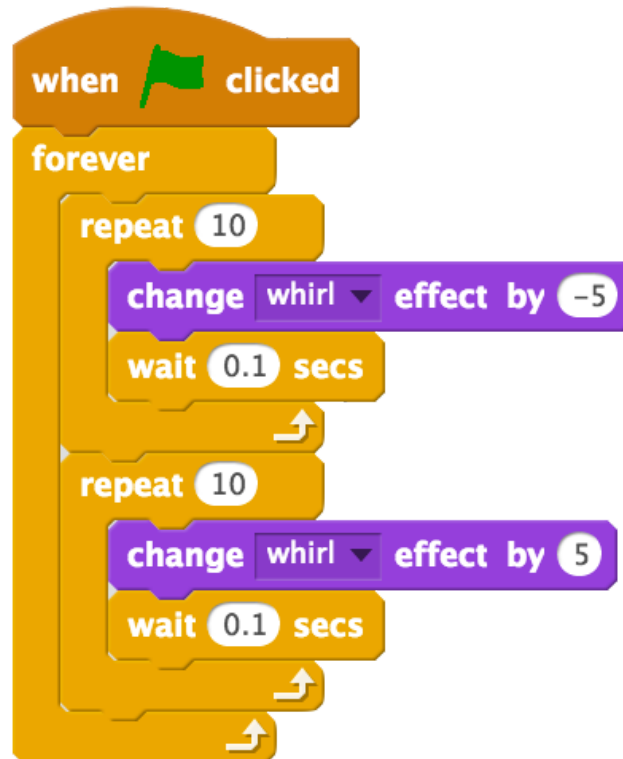


## Video 4: Smooth Wave

**In this video, students will:**

1. Add a “repeat” block around each pair of “change effect by” and “wait” blocks.
2. Change the values of the blocks to create a smooth wave effect for their program.

Code for  
the **Water**  
sprite:



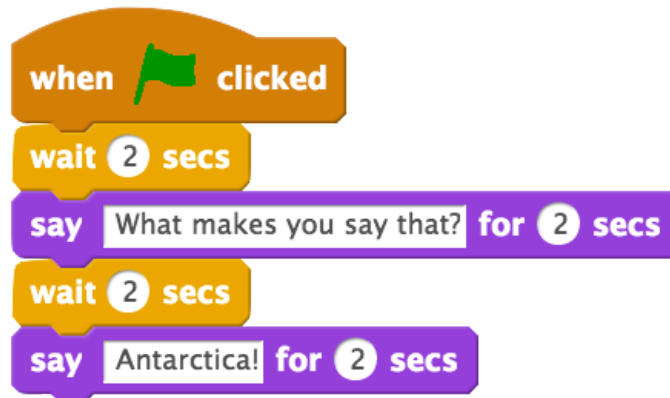
## Video 5: Tell a Story

## In this video, students will:

1. Add two sprites.
2. Add a "go to front" block to the water sprite.
3. Add "when flag clicked" and "say" blocks to the first sprite to make it talk.
4. Add "when flag clicked," "wait," and "say" blocks to the second sprite to make it talk.
5. Continue to build your dialogue until you've made a story!

**NOTE:** Students can tell any story that they would like. The sprites and dialogue shown below are examples.

Code for  
one new  
sprite:



Code for  
one new  
sprite:



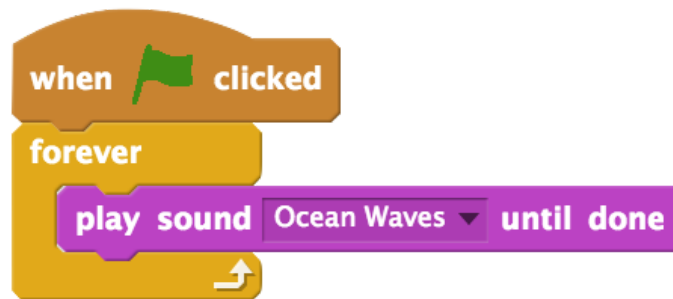


## Add-On: Sea Sounds

### In this video, students will:

1. Click the stage and the sounds tab, and select a sound.
2. Play the sound using a "play sound until done" block, a forever loop, and a "when flag clicked" block.

Code for  
the **Stage**:



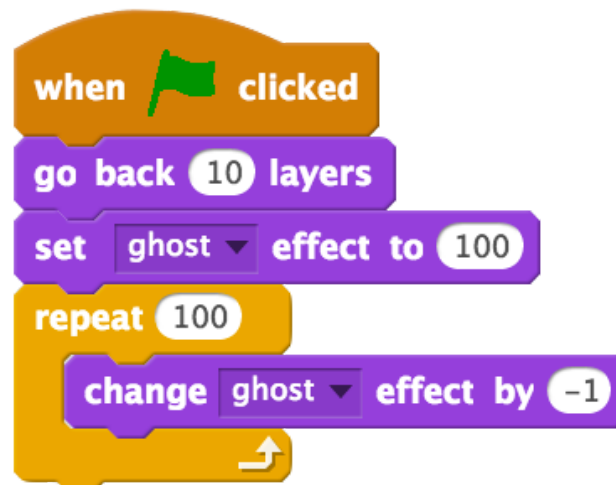
## Add-On: Sun Ray Animation

### In this video, students will:

1. Create a new sprite, and click "switch to vector mode."
2. Use the ellipse, fill, rectangle, reshape, and duplicate tools to create a sun.
3. Program the sun to appear using "go back," "set effect," "repeat" and "change effect" blocks.

**NOTE:** Students draw the new sun sprite.

Code for  
a new sprite:



## Add-On: Sink the Ship

## In this video, students will:

1. Make the sprites sink using a “glide” block.
2. Program the sprites to start in the same position each time with “go to” blocks.
3. Broadcast a message to trigger the code for sinking the ship, and add a “when I receive” event to the “glide” block.
4. Add events to make the sinking ship part of the story.

Code for  
one sprite:

```

when green flag clicked
  go to x: -51 y: 25
  wait 2 secs
  say What makes you say that? for 2 secs
  wait 2 secs
  say Just because we can't see land doesn't mean we're lost. for 2 secs
  broadcast Sink the ship
  when I receive Sink the ship
    glide 2 secs to x: -51 y: -230
  
```

Add this code.

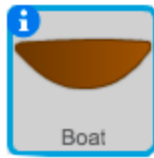
Code for  
one sprite:

```

when green flag clicked
  go to x: 74 y: 22
  say I think we're lost! for 2 secs
  wait 2 secs
  say I don't see any land! for 2 secs
  wait 2 secs
  glide 0.1 secs to x: 72 y: 74
  glide 0.1 secs to x: 72 y: 21
  when I receive Sink the ship
    glide 2 secs to x: 74 y: -230
  
```

Add this code.

Code for  
the **boat**  
sprite:



```

when green flag clicked
  go to x: -50 y: -66
  go to front
  go back 1 layers

when I receive Sink the ship
  glide 2 secs to x: -51 y: -230
  
```

## Add-On: Second Scene

In this video, students will:

1. Program the stage to start on a backdrop, and change to a new scene with a "switch backdrop to" block.
2. Show the boat and water sprites at the start of the program, and hide them when the scene changes.
3. Set each sprite's position using "go to" and "when backdrop switches to" blocks.
4. Create dialogue for your second scene using "say for 2 seconds" and "wait" blocks.

Code for  
the **Boat**  
sprite:



```

when green flag clicked
  show
  go to front
  go back 1 layers

when backdrop switches to beach malibu
  hide
  
```

Add this  
code.

Code for  
the **Water**  
sprite:



```

when green flag clicked
  show
  go to x: 0 y: 0
  go to front
  set whirl effect to 25
  forever loop
    repeat 10
      change whirl effect by -5
      wait 0.1 secs
    repeat 10
      change whirl effect by 5
      wait 0.1 secs
  when backdrop switches to beach malibu
    hide
  
```

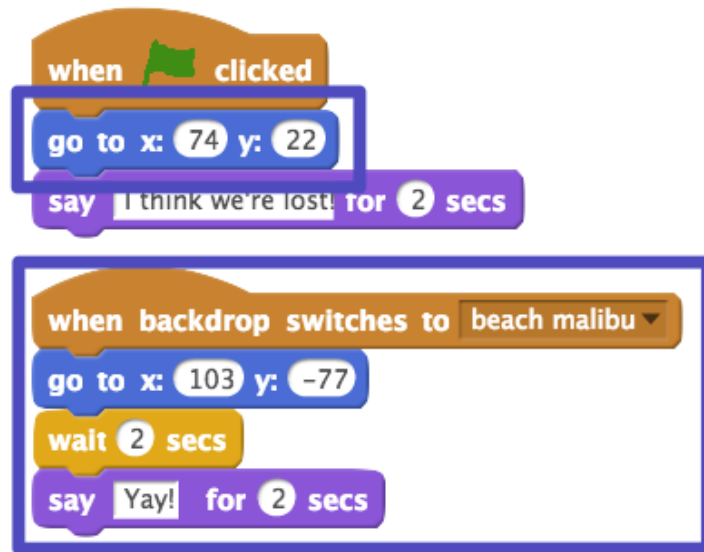
Code for  
one sprite:



```

when green flag clicked
  go to x: -80 y: 27
  switch backdrop to clear sky
  wait 2 secs
  say 'What makes you say that?' for 2 secs
  switch backdrop to beach malibu
  when backdrop switches to beach malibu
    go to x: -150 y: -98
    say 'We're here!' for 2 secs
  
```

Code for  
one sprite:



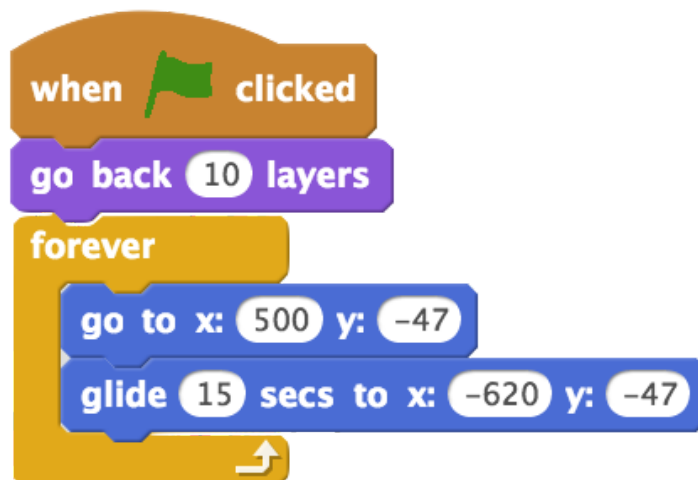
## Add-On: Clouds

**In this video, students will:**

1. Paint a new cloud sprite using the ellipse, group, and duplicate tools.
2. Program the cloud to start beyond the right side of the stage, and repeatedly glide past the left side of the stage.

**NOTE: Students draw the new cloud sprite.**

Code for  
a new sprite:



## Add-On: Gamify

## In this video, students will:

1. Program different movements using "change x" and "change y" blocks.
2. Program each movement code stack to run using "if" and "key pressed" blocks.
3. Program the code to run for the entire program using "forever" and "when flag clicked" blocks.

**NOTE:** When adding this code to more than one sprite, change the values in the "key pressed" blocks.

Code for  
a sprite:

