



Khaled bin Sultan  
Living Oceans  
Foundation

## STANDARDS

- **CCSS:** RST.9-10.1, 2, 3, 4, 5, 7, 8, 10; RST.11-12.1, 2, 3, 4, 8, 10; SL.9-10.1, 6; SL.11-12.1, 6; HSN.Q.A.1; HSA.CED.A.1, 4
- **NGSS:** ESS 2.A, ESS 2.C, ESS 2.D, HS-LS2-2, HS-LS2-6
- **OLP:** 1.B.1, 1.C.1, 1.C.7, 1.C.8, 1.C.9, 1.C.11

## ONLINE CONTENTS

- [Distribution Quiz](#)
- [Where Are Coral Reefs Found? Video](#) Although corals are found throughout the planet, most reef-building corals are found in the tropics and subtropics where thousands of animals make these reefs their home.

# DISTRIBUTION

This lesson is a part of the *Distribution* unit, which explains the two major drivers of coral distribution: salinity and temperature. Below is a summary of what is included in the entire unit.

## UNIT CONTENTS

### A. [Background Information](#)

- Where are Corals Found?
- What is a Current?
- What is Density?
- Salinity, Temperature, and Ocean Circulation

### B. Lessons

#### [Watch it! Where are Corals Found?](#)

- A worksheet to accompany the [Where are Corals Found?](#) video

#### [Density 101](#)

- A lab to calculate and compare densities of liquids

#### [Inquiring about Density 1](#)

- A lab to create a procedure to determine relative densities

#### [Inquiring about Density 2](#)

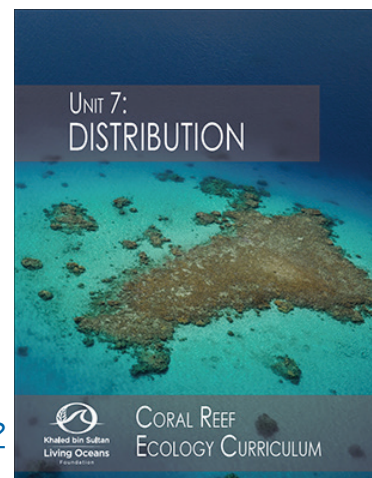
- A lab to create a procedure to determine actual densities

#### [Go With the Flow](#)

- A worksheet to accompany a teacher demonstration on how salinity and temperature affect water density

#### [Read it! Galapagos Ocean Currents](#)

- A worksheet to accompany the [Galapagos Ocean Currents](#) field blog



# LESSON 3

# GO WITH THE FLOW

**OBJECTIVE:** Determine how salinity and temperature affect density.

**INSTRUCTIONS:** Before the demonstration, fill in the your predictions in the table below.

TYPE OF WATER	PREDICTION	OBSERVATIONS
Salty water at room temperature (yellow)		
Cold fresh water (blue)		
Hot fresh water (red)		

**DRAW:** Draw a diagram of the layers of water. Remember to add labels.



**INSTRUCTIONS:** Answer the following questions.

1. Which layer has the greatest density?
2. Which layer has the least density?
3. What happens to salt water and fresh water? Explain.
4. What happens to hot fresh water and the cold fresh water? Explain.
5. Based on this experiment:
  - a. How are temperature and density related?
  - b. How are salinity and density related?

**FILL IN THE BLANKS:** Fill in the blanks with the word “increases” or “decreases.”

1. Melting of polar ice \_\_\_\_\_ salinity and \_\_\_\_\_ density.
2. As the ocean’s surface layer increases in temperature, the density of sea water \_\_\_\_\_.
3. Salinity \_\_\_\_\_ with the freezing of polar ice and \_\_\_\_\_ density.
4. Evaporation is occurring in the ocean, while this occurs salinity \_\_\_\_\_.

