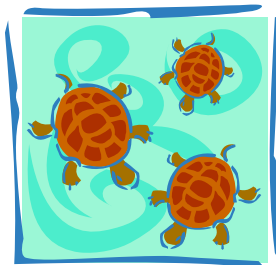


**Title:** Sea Turtle Arribada



**Subject:** Science

**Grade Level:** 5th

**Rationale or Purpose:**

To show students some nesting behaviors of sea turtles, why one particular behavior, arribada, is beneficial for some species of sea turtles.

Students will be able to:

- Read about nesting behaviors used by sea turtles
- Explain how some behaviors benefit the survival of the species
- List what species has the special arribada behavior (An **arribada** is a mass nesting of turtles)

**TEKS Objectives:**

6.1(C), 6.2(A), 6.2(B), 6.2(C), 6.2(D), 6.2(E), 6.4(A), 6.4(B), 6.6(B), 6.10(A), 6.10(C), 6.12(A)

7.1(A), 7.2(A), 7.2(B), 7.2(C), 7.2(D), 7.2(E), 7.4(A), 7.11(B)

8.2(A), 8.2(B), 8.2(C), 8.2(D), 8.2(E), 8.4(A), 8.11(A)

**CONNECTIONS TO AP**

AP Biology:

III. Organisms and Populations: B. Structure and Function of Plants and Animals  
1. Reproduction, growth, and development 2. Structural, physiological, and behavioral adaptations 3. Response to the environment

AP Environmental Science:

I Scientific Analysis, II ; II Interdependence of Earth's Systems: Fundamental Principles and Concepts, D. The Biosphere

**Source:**

<http://www.seaturtleinc.com/lessonplans/Arribada.htm>

**Materials needed:**

For each student:

- Handout of Nesting and Predators
- Bag of beans
- Stopwatch
- Tally sheet
- Quiz

**Lesson Duration:** 1 hour

**Background Information:**

Only two species of sea turtles show a unique nesting behavior (Kemp's ridley and Olive ridley). This behavior is called arribada, in which individual turtles join into one huge mass of turtles. They nest on the beach all at one time. This scene was first observed in 1961 and recorded an estimated 40,000 Kemp's Ridley female sea turtles nesting on a single day at one beach in Mexico, Rancho Nuevo. By having the turtles produce a large number of offspring at one time, it is less likely for predators to eat them all. Most baby turtles make it to the ocean, which is the safest place to for the new turtles (more information is on the "Nesting and Predators" handout).

**Procedure:**

1. Ask the students to read the "Nesting and Predators" handout.
2. Hand out the questions to follow the article for the students to do.
3. Discuss with the class what the handout said about nesting.
4. Notice that some species nest by themselves, while others nest together at one time.
5. This behavior is called Arribada. Today, the class is going to simulate this behavior and see why some species started using it.
6. Tell students to get in groups of four and to start following the bean challenge handout and fill in the blanks on the sheet given.
7. After the challenge, have the class come together and discuss what they have found. Is this behavior beneficial? What could be some disadvantages of having this behavior?
8. After discussion, have students take the quiz for the last 5 minutes of the class.

Name: \_\_\_\_\_

### **Arribada Questions**

1. What is an arribada?
2. List other nesting behaviors.
3. What two species of sea turtles use arribada?
4. Why do these turtles use this behavior?
5. What are some disadvantages of this behavior?
6. Explain in your own words why you believe or don't believe that this behavior is beneficial.

Name: \_\_\_\_\_

### Bean Challenge

This activity should provide information on how the sea turtle nesting behavior, known as arribada, happens. Have one person gather the materials needed and follow the questions carefully.

Materials needed: Bag of beans and a stopwatch

Procedure:

1. Carefully pour/spill the bag of beans on the table. The beans are the turtles on the beach.
2. Then one person would pick up the beans one at a time. This simulates predators disturbing the turtles.
3. There will be given a time limit of how long the student should pick up beans.
4. The times would be 5, 10, 15, 20, 25, and 30 seconds.
5. What beans remain on the table represent the turtles that survived. The beans that you have collected represents the predation.
6. Fill in what you observed below in the chart provided.

Time (seconds)	Number of beans collected	Number of beans on the table
5		
10		
15		
20		
15		
30		

Questions:

1. How does the amount of time affect how many beans you collected?
  
  
  
  
  
  
  
  
  
  
2. Does the hatchling chance of survival increase from this behavior?

Name: \_\_\_\_\_

### Quiz

1. What is an arribada?
2. List other nesting behaviors.
3. What two species of sea turtles use arribada?
4. Why do these turtles use this behavior?
5. What are some disadvantages of this behavior?
6. How does the amount of time affect how many beans you collected?
7. Explain in your own words why you believe or don't believe that this behavior is beneficial.