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## **Science: Life in the Ocean**

### **Grade: 5**

#### **Science Standards:**

N.5.A.1 - Students know that the scientific process is made by conducting careful investigations, recording data, and communicating the results in an accurate method. E/S

L.5.C.1 - Students know the organization of simple food webs. E/S

L.5.C.3 - Students know changes to an environment can be beneficial or detrimental to different organisms. E/S

L.5.C.4 - Students know all organisms, including humans, can cause changes in their environments. E/S

#### **Learning Objectives:**

- Students will learn that the ocean food chain is made up of consumers and producers.
- Students will compare and contrast animals in the ocean that are predator and prey and their adaptations for survival.
- Students will analyze the causes and effect that pollution has on the ocean environment.
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#### **Skill area/concepts covered:**

Writing- descriptive writing, vocabulary.

Reading- comparison/contrast

Math- simple addition

#### **Purpose/ Rationale:**

The purpose of this lesson is to give students a closer look of the ocean environment beginning with the food chain. They will also see that ocean animals play the game called "survival" just like the land animals do. This lesson will also teach students that polluting the environment can threaten the food chain and the ecosystem of the ocean.

#### **Lesson Development**

##### **Prerequisite Knowledge:**

- Students should know that the earth is covered in 70% water and that the oceans hold 97% of the world's water. Students should know that the ocean water is salt water and that there are many plants and animals that live and coexist in this unique environment. Students should have some knowledge but not in depth knowledge; that there are many different types of ocean ecosystems such as the sandy beaches, the rocky seashore, the deep ocean, coral reefs, and marshes.

**Materials:**

- 1 Video clip from Discovery Education/ Ocean Alive predation/ food chain
- 1 video clip from Discovery Education/ Oil Spills
- 1 box of colored markers/pencils
- 8 pencils
- 8 rubber bands
- 8 beans
- 1 soda can ring
- 3 Photos of polluted ocean
- 18 food pyramid worksheet
- 18 predator prey worksheet
- 18 cause and effect worksheet
- 18 Who's eating whom? Worksheet
- 1 Beach ball
- 17 Name tags

**Procedure: Introduction 10 minutes**

- To introduce this lesson we will play a five-minute video clip about the ocean and its ecosystems. Video clip: Ocean Alive
- A slide of activities will be shown on the Elmo.
- We will then explain that we will be learning about the ocean and its environment.
- Vocabulary words that should be written on the board:
  - **Life cycle, environment, ecosystem, predator, prey, food chain, endangered, pollution.**
- We will be working in three different learning centers.
- Three learning centers will be set up in the classroom.
- Students will wear a nametag that says either: sharks, or puffers, and shrimp on it.
- Students are then told, "All the "sharks" go to the predator/ prey center, the "puffers" will go to the ocean food chain center, and the "shrimp" will go to the endangered ocean center.
- Classroom Management: When we say the word "OCEAN" we want all eyes on the teacher(s).

**3 Learning Centers 12 minutes each / 36 minutes total time.****Center 1: Food Chains:**

- Students will begin by working on a life cycle worksheet that explains the normal cycle of life of a creature.
- Teacher will then interrupt them with a shark puppet to get them started on a worksheet called who's eating you? Teacher will begin explaining the land food chain.
- The students will complete an ocean food chain with sketches that is filled in by each student.
- \*For the student with an Intellectual Disability, the teacher will use note cards for the student in order for him/her to keep up with the worksheet.
- \* For the student with a learning disability of Dyslexia, teacher will have pictures already available for them to attach to the work sheets with blurbs attached for each animal.

### **Center 2: Predator/Prey:**

- With the marine food chain on the overhead, the students will do a matching exercise by drawing lines from the predator to the prey.
- Next the steps in how to draw two preys for each predator will be explained. We will discuss how larger animals need more to eat.
- The students will be shown the process of how one shark needs two big fish, each big fish will need two small fish and each small fish will need two algae and plankton.
- They will then write the numbers for each line, i.e., 1 shark needs 2 big fish plus 4 small fish plus 8 algae and plankton is  $2+4+8 = 14$  prey to feed a shark.
- \*A child with a learning or intellectual disability can be given the handout that has him or her draw a copy of the example for one shark before moving on to two sharks.
- Other children will create the formula to find out how much prey it takes to feed two sharks, then three sharks and finally four sharks.
- Students that complete this activity early and with accuracy will be given a homework predator prey crossword puzzle.

### **Center 3: Endangered Oceans:**

Students will do an activity to simulate what it is like for a bird in which a plastic soda can ring is stuck on their neck or beak. They will also learn what happens when the ocean is polluted with garbage and oil.

- Students will wrap a rubber band twice around their fingers and thumb on one hand.
- Teacher will tell students to pretend that their hand is a birds beak. They are to try and open the bird's mouth and pick up a small bean.
- Teacher will then show the students a picture of birds with a plastic soda pop ring around their neck.
- Discuss the meaning of the word *pollution*. Ask students to tell some ways pollution affects the ocean.
- Show photos of animals in the ocean covered in oil.
- Discuss with students that oil in the ocean is caused by many accidents.
- Discuss what may have caused the oil to be in the ocean.
- Show photos of garbage and plastics floating in the ocean environment.
- Ask students to brainstorm ideas that people can do to protect the oceans.
- Have students write on worksheet the causes and effects that pollution has on the environment and animals.
- Have students write a solution to prevent these problems.

\*To differentiate instruction the student with dyslexia will have another student assist with reading the directions for the worksheet on cause and effect.

\*The teacher will assist the student with an Intellectual disability. The teacher will explain what is happening in the photos. Teacher will also work with the student to write down cause and effect on a modified worksheet.

**Closure:** 5-10 minutes: We will say “Ocean” for attention to center.

- Students will stay in their centers and will discuss with a partner a question regarding what they learned at each of the centers.
- We will put a slide on the overhead for pair share discussion
- One-third of the pairs will be asked the question: “Discuss two important points you learned about the food chain.”
- One-third of the pairs will be asked the question: “Come up with two things that you learned about predators and prey?”
- One-third of the pairs will be asked the question: “What can disrupt the ocean food chain?”
- We will then say the word “Ocean” to get the students attention. We will say, “Before you go to the beach, we want to review what you have learned about the ocean.” We are going to throw the beach ball, and whoever catches it must say something they learned. Student will answer and then toss the ball to the next person.
- \*Student with intellectual disability will be able to share his answer, as he will have had a chance to have a discussion with his partner. We will let him know that we will start the beach toss with him.

**Assessment:**

- Students will be assessed informally by demonstrating an understanding of each center and by doing the activity in the centers.
- A final assessment will be the pair share and beach ball activity.
- Formal assessment: Teacher will correct the worksheets students answered at each center.

**\*Gearing Down/Differentiation included:**

\*We have one student with Dyslexia who will need assistance with reading directions in the center activities.

\*We have one student with an Intellectual Disability and we will have a student or teacher assist him/her with the activities in each center. We will give him/her a modified activity to do in each center as listed under the centers activities.

\* During pair-share a partner will help with discussion questions.

\* Beach ball toss after pair share- we will let the ID student know that we will call on him first and allow him time to have an answer. We will begin with him with the beach ball toss.

**\*Gearing up/Differentiation included:**

For students that finish the activity quickly and with accuracy, within each center, we will have him/her continue learning about the subject in the center by reading a chosen section in a book. The student will be asked to write down a paragraph about the subject and to share what they have learned during whole group time. Also we will have a crossword puzzle predator prey activity.

\* Indicates: Modified instruction.

**Our classroom makeup:** 18 students: 5 male, 13 female, 1 female student has a learning disability of dyslexia, 1 male student is a mildly intellectually disabled.