

Lesson Plan

Activity Title: Ocean Careers Scavenger Hunt

Subject (Focus/Topic): Science

Grade Level: 9-12

Average Learning Time: 50 minutes

Lesson Summary (Overview/Purpose): Students will use internet resources to discover a range of maritime careers, education facilities, and related organizations.

Overall Concept (Big Idea/Essential Question): What are some types of careers that are related to the oceans?

Specific Concepts (Key Concepts):

- There are a variety of maritime careers possible, including government-related, private, commercial, and public careers.
- The education required is different for every job; some maritime careers require only a high school diploma and skills that can be learned on the job, others require many years of higher education.
- Because of the range of maritime careers, there are many schools, academies, and apprenticeship programs available.
- The skills of every ocean-related career are different for each-- for example a ship cook requires a much different skill-set than an aquarist that collects fish and invertebrates for an aquarium.
- Maritime careers are needed because the oceans make life on Earth possible, influence our weather and climate, and provide food and resources for humans and other life on earth; without jobs to investigate, educate, protect, monitor, or harvest from the oceans, we might misuse this invaluable resource.

Focus Questions (Specific Questions):

- What types of jobs related to the ocean (maritime careers) are there?
- What types of schools can you go to if you want to work a maritime career?
- How much school (what type of degree) is needed to do maritime work?
- What types of duties and responsibilities will you need in maritime work?
- Why are maritime careers needed?

Objectives/Learning Goals:

- Students will be able to generate a list of at least 10 maritime careers as a class.
- Students will be able to identify schools or academies within the state and the maritime degree/skill that can be obtained at each.
- Students will be able to list the duties and salary earned for at least 5 marine careers.
- Students will be able to identify at least 3 reasons that maritime work is needed, based on the information found about each career.

Background Information: Maritime careers are any jobs that have to do with the ocean. Humans are dependent on oceans for food, jobs, resources, income, recreation, inspiration, transportation, a functional water cycle, and the air we breathe.

Common Misconceptions/Preconceptions:

Many students (and adults) believe the only careers related to oceans are ship captains, fisherman, and dolphin trainers. They are unaware of multitudes of careers related to the ocean.

Materials: Student hand-outs

Technical Requirements: Computer lab (with internet access and video streaming capability)

Teacher Preparation: Reserve the computer lab and ensure students have reliable internet access.

Keywords: Maritime, deploy, profile

Pre-assessment Strategy/Anticipatory Set (Optional): Show several clips from *Discovery news: Cool jobs* to showcase several different marine related jobs.

<http://news.discovery.com/videos/animals-shark-sitter.html>

<http://news.discovery.com/videos/archaeo-cool-jobs-deep-sea-detectives.html>

Lesson Procedure:

1. Introduce the lesson objectives with question: what kinds of jobs can you have that a related to the oceans? Brainstorm as a class a list of possible jobs.
2. Show cool jobs videos from Discovery news as hook.
3. Hand out student instruction sheet. Allow students 30 + minutes to complete the activity.
4. Rejoin as a whole class. Ask for student volunteers to share a job they found, including the duties, salary, location, and education required.
5. Wrap up with reflection on marine careers- what are some reasons that marine careers are important?

Assessment and Evaluation:

Assessment for this activity can be completed in multiple ways. Students may be assessed by evaluating the number of maritime careers, duties, salary, and education listed. They may also be evaluated on their response to the question regarding the need for maritime careers. Another possible assessment is to evaluate students on the completeness and thoughtfulness of their job shared for the class. Finally, students may be assessed by the wrap-up reflection.

Standards:

- **National Science Education Standard(s) Addressed:**
 - NSES 9-12 Content Standard E (Science and Technology), Content Standard F (Science in Personal and Social Perspectives), Content Standard G (History and Nature of Science)
- **Ocean Literacy Principles Addressed: (6) The ocean and humans are inextricably interconnected.**
 - The ocean affects every human life. It supplies freshwater (most rain comes from the ocean) and nearly all Earth's oxygen. It moderates the Earth's climate, influences our weather, and affects human health.
 - From the ocean we get foods, medicines, and mineral and energy resources. In addition, it provides jobs, supports our nation's economy, serves as a highway for transportation of goods and people, and plays a role in national security.
 - Humans affect the ocean in a variety of ways. Laws, regulations and resource management affect what is taken out and put into the ocean. Human development and activity leads to pollution (point source, non-point source, and noise pollution) and physical modifications (changes to beaches, shores and rivers). In addition, humans have removed most of the large vertebrates from the ocean.
 - Everyone is responsible for caring for the ocean. The ocean sustains life on Earth and humans must live in ways that sustain the ocean. Individual and collective actions are.
- **State Science Standard(s) Addressed:**
 - Science 9-12 APPA Science affects society and cultures by influencing the way many people think about themselves, others, and the environment. Society also affects science by its prevailing views about what is important to study and by deciding what research will be funded.
 - Science 9-12 APPF It is important for all citizens to apply science and technology to critical issues that influence society.
- **Additional State Standards Addressed:**
 - Communication 9-12 INTEGRATION: Students use technology within all content areas to collaborate, communicate, generate innovative ideas, investigate and solve problems.
 - Component 1.3 Investigate and Think Critically: Research, manage and evaluate information and solve problems using digital tools and resources.

Additional Resources:

<http://www.oceancareers.com/2.0/index.php> General resource for many types of careers related to the ocean

<http://www.careers.noaa.gov/> National Oceanic and Atmospheric Administration careers

<http://www.youtube.com/watch?v=dvyXw4Catj4> A British-made video describing a variety of maritime careers

<http://www.coolworks.com/jobs-on-water/> Jobs on the Water- popular water-based jobs

<http://www.noaacorps.noaa.gov/> NOAA Corps- the nation's smallest armed service

<http://www.usmma.edu/about/default.shtml> United States Merchant Marine Academy

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Creation date: 10/21/11

Name _____ Date _____ Per. _____

OCEAN CAREER SCAVENGER HUNT

Purpose: Discover a variety of jobs related to oceans, and find out what type of required education, salary, and duties these jobs have.

Directions:

1. GO to the website: www.oceancareers.com

CLICK the *Careers* link on the left side of the screen.

CLICK the link *View an alphabetical list of all the careers*.

2. Choose *Able Seaman*.

- a. What is an Able Seaman?

- b. What duties/responsibilities does an Able Seaman have?

- c. What is the education/training needed to become an Able Seaman?

- d. What is the salary of a beginning Able Seaman?

3. Choose 4 more careers of your own. Answer the questions:

- a. What duties does this career require?

- b. What is the education or training needed for this career?

- c. What is the beginning salary for this career?

4. Imagine that you decide to study marine biology. From which schools in your state can you receive a marine biology degree?
 - a. From the Ocean Careers home page, choose *Education* from the menu on the left.
 - b. Choose *search for program by state*. Read through the list of schools to find schools that offer Marine Science or Marine Biology.

5. From the Ocean Careers home page, choose *Jobs and Internships* from the menu on the left.
 - a. Choose *Jobs*.
 - b. Skim through the jobs posted and choose *3 different jobs*.
 - c. For each job, record: job title, company, a short description of job duties, beginning salary and location.