

**I'm not a robot!**



Taxonomie und Zoogeographie der  
Brachyura, Paguridea und Porcellanidae  
(Crustacea: Decapoda)  
des Persisch-Arabischen Golfes

Dissertation  
zur Erlangung des Doktorgrades  
der Naturwissenschaften

vorgelegt beim Fachbereich Biologie  
der Johann Wolfgang Goethe-Universität  
in Frankfurt am Main

von  
Michael Apel  
aus Frankfurt am Main

Frankfurt am Main (2001)  
(DF1)





[www.seahorseaquariums.com](http://www.seahorseaquariums.com)

The cover features a yellow starburst badge with the text "Best Seller". The title "SCIENTIFIC ILLUSTRATION" is at the top in large, bold, black letters, with "grades 7-12" written below it in a smaller, stylized font. To the right is a circular icon containing a brain and water droplets. On the left, there's a vertical row of colored pencils (blue, teal, olive green, lime green, yellow) standing upright, with some lying horizontally at the bottom. Below the pencils is a cartoon fish swimming upwards. The background is a textured teal color.

**Marine Fish Scavenger Hunt**

ONLINE ACTIVITY GRADES 7-12

**OBJECTIVES**

- Identify a marine fish
- Differentiate between live vs. preserved specimens
- Communicate science
- Compare/contrast the role of art in science

**MATERIALS**

- Internet
- Drawing journal
- Pencil
- Colored pencils

**ACTIVITY TASKS**

- Draw a sketch of a marine fish
- Research and write about the fish
- Differentiate between live vs. preserved specimens
- Create a scientific illustration of the fish
- Research the biology and habitat of the fish
- Create a scientific illustration of the fish
- Research the preservation of specimens
- Research the communication of science

**DISCUSSION**

Questions for discussion:

1. How does a scientist communicate with the public?
2. What is the purpose of the artist in science communication?
3. Discuss the following types of scientific illustrations: diagrams, drawings, prints?
4. Explain the role of art in science.
5. How does scientific art differ from artistic art?
6. Why do scientists communicate with the general public?
7. What does "Illustrative Science" mean?

**BONUS**

• *Illustrative Science: The Art of Biology* by Michael S. Helfand

Machine." la Retrieved 2010-01-08. ^ msnbc.com Archived 11 March 2011 at the Wayback Machine. MSNBC. Retrieved 23 January 2012. ^ Lofstad, Ralf, (2 January 2012). "Over natta var wirea full av død sild" [Overnight the beach was full of herring death]. Dagbladet (in Norwegian). Archived from the original on January 7, 2012. Retrieved 2 January 2012. "Mass death of herring off north Norway puzzle locals". Monsters and critics. Deutsche Presse-Agentur. 2 January 2012. Archived from the original on September 14, 2012. Retrieved 2 January 2012. Officials fired over cadmium pour[Nation Archived February 6, 2012 at Wayback Machine. chinadaily.com.cn (2012-02-04). URL ecsep ecepe oippocs edit ossor inrests itinemagelloC 32-50-2102 Herring, and Scott (2002) Fish Kill in the Gulf of Oman: A space-based diagnosis NASA: Earth Observatory, featured article. Oxygen Depletion in Ponds, University of Georgia Cooperative Extension Service, Publication L233, 1993 Fish Kills &A#A Their Causes and Prevention, Virginia Tech, Virginia Cooperative Extension Publication 420-252, 2009 Retrieved from "

Alaska Department of Fish and Game P.O. Box 115526 1255 W. 8th Street Juneau, AK 99811-5526 Office Locations Marine life, sea life, or ocean life is the plants, animals and other organisms that live in the salt water of the sea or ocean, or the brackish water of coastal estuaries. At a fundamental level, marine life affects the nature of the planet. Marine organisms, mostly microorganisms, produce oxygen and sequester carbon. Marine life in part shape and protect shorelines, and some ... An algae bloom is the appearance of a large amount of algae or scum floating on the surface of a body of water. Algae blooms are a natural occurrence in nutrient-rich lakes and rivers, though sometimes increased nutrient levels leading to algae blooms are due to fertilizer or animal waste runoff. A few species of algae produce toxins, but most fish kills due to algae bloom are a ... Marine life, sea life, or ocean life is the plants, animals and other organisms that live in the salt water of the sea or ocean, or the brackish water of coastal estuaries. At a fundamental level, marine life affects the nature of the planet. Marine organisms, mostly microorganisms, produce oxygen and sequester carbon. Marine life in part shape and protect shorelines, and some ...

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