**Marine Biology WebQuest**

**Introduction**

**You, as a marine biologist, have been selected to help decipher important scientific data pertaining to life forms which have been found on a new planet, Tetramarina. There was a scientific team, headed by the world renowned Dr. Nemo, sent there to investigate the different ecosystems and inhabitants. Unfortunately the last data transmission received from the search party was incomplete, and there has been no further contact. You will observe that this last transmission also must be scientifically decoded because it is written in Latin and scrambled English! It is your job to help decipher this transmission describing the newly discovered marine species and also help to determine the environmental conditions of this new planet, Tetramarina.**

**Good luck!**

**Task**

**The following is a copy of the last transmission received:**

**To: Project Headquarters of Tetramarina project**

**Fr: Dr. Nemo and Crew**

**Data transmission 12/31/25 time 0915**

**You wouldn't believe the many wonderful marine specimens we have found in our last twenty-four hours of exploration! I'm sending you a list along with a description of the ecosystems we have seen.**

|  |  |  |
| --- | --- | --- |
| **Specimen number** | **Scientific name** | **Common name** |
| 1 | ***Physalia sp.*** | **terpoguue anm o awr** |
| 2 | ***Millepora sp.*** | **refi rocal** |
| 3 | ***Cliona celata*** | **grboni nopegs** |
| 4 | ***Mytilus edulis*** | **leub suelms** |
| 5 | ***Hapolochlaena sp.*** | **leub nigr ptuscoo** |
| 6 | ***Mercenaria sp.*** | **ahouqg mlac** |
| 7 | ***Riftia pachyptila*** | **hdohrayrteml netv rowm** |
| 8 | ***Asterias sp.*** | **ase rtsa** |
| 9 | ***Strongylocentrotus sp.*** | **negre aes cnruhi** |

|  |  |  |
| --- | --- | --- |
| 10 | ***Cucumaria sp*.** | **ase bruccmeu** |
| 11 | ***Balanus sp.*** | **lbnacrae** |
| 12 | ***Limulus sp.*** | **eerohssho cbra** |
| 13 | ***Homarus americanus*** | **tnnroher tolrbes** |
| 14 | ***Euphausia superba*** | **raitccant lkilr** |
| 15 | ***Amblyrhynchus subcristatus*** | **oplgaaags auigna** |
| 16 | ***Chelonia mydas*** | **negre ase etltru** |
| 17 | ***Pygoscelis adeliae*** | **eedail egnnpiu** |
| 18 | ***Pelecanus occidentalis*** | **rnwbo cpnaile** |
| 19 | ***Pleuronectes americanus*** | **nreiwt enlfudor** |

|  |  |  |
| --- | --- | --- |
| 20 | ***Hippocampus sp.*** | **ase reohs** |
| 21 | ***Rhincodon typus*** | **ehwla hkars** |
| 22 | ***Thalarctos maritimus*** | **orlpa aber** |
| 23 | ***Balaenoptera musculus*** | **leub ehwla** |
| 24 | ***Enhydra lutris*** | **ase trtoe** |
| 25 | ***Zalophus californianus*** | **ase olni** |
| 26 | ***Trichechus manatus*** | **aementa** |
| 27 | ***Tursiops truncatus*** | **tbolte enods hodlnip** |
| 28 | ***Gymnothorax sp*** | **yraom ele** |
| 29 | ***Negaprion brevlrostris*** | **oemln hkars** |

|  |  |  |
| --- | --- | --- |
| 30 | ***Loligo peali*** | **lgon dfnien dusiq** |
| 31 | ***Uga pugnax*** | **lfeidrd acrb** |
| 32 | ***Dermochelys coriacea*** | **recbaklahte reltut** |
| 34 | ***Orcinus orca*** | **elrekil ehwla** |

**As you can see we have these same marine organisms on our planet Earth, and according to what I and my crew have observed, they appear to be as successful on Tetramarina because of their many special adaptations. I am looking forward to investigating these adaptations to see if they are indeed really the same as their earthly 'relatives'!**

**The wonderful environments we explored included: .....**

**END TRANSMISSION**

**--------------------------------------------------------------------------------------------------------**

**After obtaining a specimen number from your teacher, locate the number in the above chart and begin your project by unscrambling the common name of the organism. Your task is to then research this organism with the major focus being its special adaptations.**

**While conducting your research (note: check out the** [**Resources**](http://franklinhs.bcps.org/Old%20Index/Teacher%20Links/science/marinebio/index.htm#resources) **section of this webquest to find helpful research sites and sources) you should answer the following questions:**

* **What is the common name and taxonomic classification (Kingdom, Phylum, Class, genus and species) of the marine organism?**
* **What type of environmental conditions must exist on the planet Tetramarina to support this marine organism? Why type of marine ecosystem is home to your specimen? Consider abiotic factors (temp, salinity, light, ph etc) and biotic factors (what does it eat, interact with- i.e. commensalism or mutualism, what organisms are probably present to keep the population in check- predators?)**
* **Define the niche of the marine organism**
* **Given your description of the organism's environment what special adaptations does it posses which help it to be so successful? Choose two or three major adaptations to include in your project.**

**When you have completed your research you will be required to:**

* **Create a poster with the facts presented from your research illustrating the specific adaptations of the organism and its environment.**
* **Give an informal, but prepared, oral presentation to your peers.**

**Resources**

**You should use the following areas as sources of information for this assignment:**

* **In our classroom, reference books**
* **In the library:**
  + **Library catalog for related books**
  + **Reference books**
  + **Online databases** (For access from home, see your library staff for access codes.)

**Helpful Internet sites:**

**The following internet links are provided for you to utilize. Do not forget to write down the address of a website to place in your bibliography.**

**Please note that some of the first sites on this list are excellent general sources.**

|  |  |
| --- | --- |
| * [Bridge:Biology (from Va Institute of Marine Science)](http://www.vims.edu/adv/ed/info.html) * [Marine animals at the Woods Hole Marine Biological Laboratory](http://database.mbl.edu/SPECIMENS/PHYLUM.taf?function=form&page=2) * [National Aquarium in Baltimore: They're Alive](http://www.aqua.org/animals/) * [Ocean Animals(part of larger Marine Ecosystems Website)](http://mbgnet.mobot.org/salt/animals/index.htm) * [Ocean link (can ask a marine scientist a question)](http://oceanlink.island.net/) * [The Sea (great pics!)](http://www.seasky.org/sea.html) * [AltaVista Search: Main Page](http://altavista.digital.com/) * [Marine--Invertebrates](http://www.stemnet.nf.ca/CITE/marinver.htm) * [NMNH Invertebrate Zoology Page](http://nmnhwww.si.edu/departments/invert.html) * [Animal Resources](http://www.seaworld.org/infobook.html) * [Division of Fishes - Ichthyology](http://nmnhwww.si.edu/vert/fish.html) * [The Electronic Zoo](http://netvet.wustl.edu/e-zoo.htm) * [NetVet/Electronic Zoo - Biology World Wide Web Sites](http://netvet.wustl.edu/biowww.htm) * [Information resources for Biology](http://www.library.ucsb.edu/subj/bio1.html) * [Porifera](http://www.ucmp.berkeley.edu/porifera/porifera.html) * [Major Phyla of vertebrates](http://www-sioadm.ucsd.edu/siofish/) * [Marine Mammals](http://www.marine-mammals.com/) * [MARINE CRUSTACEANS OF SOUTHERN AUSTRALIA](http://www.mov.vic.gov.au/crust/page1.html) * [Lloyd Center Online Teaching Laboratory](http://www3.umassd.edu/Public/Exhibit/DES300/lloydw.html) * [Barnacle general biology](http://www.mov.vic.gov.au/crust/barnbiol.html) * [Common Intertidal Animals - Echinoderms](http://www.biology.ucsc.edu/classes/bio161l/echinod.html) * [intro to Echinoderms](http://www.ucmp.berkeley.edu/echinodermata/echinodermata.html) * [Encarta Schoolhouse](http://www.encarta.msn.com/schoolhouse/oceans/ocmarine.asp) * [Echinoderms](http://www.ucmp.berkeley.edu/echinodermata/echinomm.html) * [Horseshoe Crab Facts and Figures](http://www.beach-net.com/horseshoe/Bayhorsecrab.html) | * [American Lobster](http://www.lobsters.org/) * [Antarctic Krill (Euphausia superba)](http://www.ecoscope.com/ikrillw1.htm) * [Penguin](http://ourworld.compuserve.com/homepages/Peter_and_Barbara_Barham/adelie.htm) * [Krill Research](http://www.ios.bc.ca/ios/plankton/~romaine/krillinf.htm) * [Galapagos iguana](http://darwinfoundation.org/Ourwork/terrest/t7.html) * [Green Sea Turtle](http://www.swflorida.com/turtletime/green.htm) * [Pelecanus occidentalis [Brown pelican]](http://species.fws.gov/bio_plcn.html) * [Seahorse Park - Finmail](http://www.poost.nl/seahorse/finmail.html) * [The Great White Shark - Frequently Asked Questions](http://www.nationalgeographic.com/fieldtales/greatwhite/) * [Whale Shark](http://www.whaleshark.org/wsrglinks.html) * [In-Brief: The Polar Bear](http://204.244.141.13/writ_den/E12/brief.htm) * [Marine Mammals](http://www.oregoncoast.com/Whales.htm) * [Blue Whale](http://www.state.ak.us/local/akpages/FISH.GAME/wildlife/geninfo/game/blue.htm) * [Enhydra lutra [sea otter]](http://www.otternet.com/index.htm) * California Sea Lion: Zalophus californianus * [Manatee](http://www.savethemanatee.org/) * [Vancouver aquarium](http://www.vanaqua.org/) * [Winter Flounder](http://www.mar.dfo-mpo.gc.ca/science/csas/status/1996/96_059e.html) * [Loligo pealei](http://animaldiversity.ummz.umich.edu/accounts/loligo/l._pealei.html) * [Sharks](http://www.gate.net/~dream2/shark.html) * [Fiddler crab](http://pelotes.jea.com/fidcrab.htm) * [Moray Eel: One of Hawai'i's Dangerous Ocean Organisms](http://touregypt.net/vdc/Rsfish19.htm) * [Leatherback turtle](http://www.turtles.org/leatherd.htm) * [Killer whale](http://www.tmmc.org/orca.htm) |

**Process**

**To accomplish this task you should do the following:**

**1. Obtain a specimen number from your teacher.**

**2. Carefully read through the Task section of the webquest.**

**3. Unscramble your given specimen's common name.**

**4. Note the scientific name of your specimen.**

**5. Complete the research needed to answer the questions given under the Task section of the webquest. Begin by looking for helpful sites in the list given under the Resources section of this webquest.** [**You *must* use this word document provided**](http://franklinhs.bcps.org/Old%20Index/Teacher%20Links/science/marinebio/notes.doc) **to type your notes!!!!Notes must be turned in with your final project!!!**

**6. Do not forget to check the school library, the books in the marine biology classroom, and your local public library.**

**7. Compose a list of resources (magazines, Internet sites, books - your own book!). THIS WILL BE CHECKED ( your teacher will tell you the due date)**

**8. Prepare on 8x11" copy paper a rough draft of the poster you are going to create.**

**9. Create your poster! You may get color computer copies from the library for a minimal charge. Some work on this project may be required outside of class.**

**Poster should include:**

* **Picture of the organism**
* **Picture of the organism's normal habitat/environment**
* **Description of the special adaptation(s) of this organism.**
* **Description of how this organism uses its special adaptation(s).**
* **Which taxonomic classification does this organism belong to?**
* **Abiotic and Biotic factors of the organism environment. (This could be a list, pictures, clip art or a chart)**

**10. Prepare a brief (3 min.) speech to present the important findings to your peers in the class.**

**[Assessment](http://franklinhs.bcps.org/Old%20Index/Teacher%20Links/science/marinebio/assess.doc)**

**This assignment will be evaluated and factored in as a major classwork grade. Your grade will be based on the following:**

* **Organization - Following instructions for research, and format of poster, proper format for citation, using a variety of resources**
* **Information - Scientific information regarding questions presented under Task section of this webquest**
* **Meeting due dates - handing in the list of resources/notes, poster on time**
* **Your oral presentation must be professional; everyone is expected to present their work!!**

**You must see me prior to the project due date if you encounter any problems. I may separate you from your partner (and you may have to complete the project on your own) if work is not progressing to my satisfaction (too much socializing for example).**

**Conclusion**

**GOOD LUCK, MATES, AS YOU RESEARCH AND INVESTIGATE THE ORGANISMS FOUND BY DR. NEMO ON TETRAMARINA!**