

What's The Buzz?



Unit One: Under The Sea

Students in the GUES Discovery Lab will be taking a journey *Under the Sea*. Students will dive into the sea to learn more about sharks, starfish and coral reefs. This unit will begin on August 10 and will continue through October 2. The students will have an opportunity to visit the lab four times during this unit. Each time your child will stay for 75 minutes. The first

lesson that your child will take part in is researching sharks, starfish and ocean food webs on the laptops. During your child's second visit they will create a food web as a class hands-on activity, view single celled and multi-celled ocean animals through microscopes, and learn about consumers and producers. On the third visit to the lab your child will work in a group to make a chart of a shark's

food web and classify shark teeth. They will measure and group different shark teeth fossils. During the last visit in the lab your child will have one other partner to help them dissect and label a starfish. The students will also be given the opportunity to view many different types of sea shells, coral, and other ocean life forms.



Fun Facts:

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| 1. The oceans occupy nearly 71% of our planet's surface. | 4. The world's oceans contains nearly 20 million tons of gold. | 7. The top ten feet of the ocean holds as much heat as our entire atmosphere. |
| 2. More than 97% of all our planet's water is contained in the ocean. | 5. The Great Barrier Reef, measuring 1,243 miles is the largest living structure on Earth. | 8. There are about 4,000 coral reef fish species worldwide. |
| 3. Mount Everest (the highest point on Earth's surface 5.49 miles) is more than 1 mile shorter than the Challenger Deep (the deepest point in the ocean at 6.86 miles). | 6. The longest continuous mountain chain known to exist resides in the ocean at more than 40,000 miles long. | 9. Three quarters of the world mega-cities are by the sea. |
| | | 10. More than 90% of the trade between countries is carried by ships. |



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5th Grade Objectives for Under The Sea

3. Predict characteristics, structures, life cycles, environments, evolution, and diversity of organisms.

a. Compare and contrast the diversity of organisms due to adaptations to show how organisms have evolved as a result of environmental changes. (DOK 2)

- Diversity based on kingdoms, phyla, and classes (e.g., internal/external structure, body temperature, size, shape)
- Adaptations that increase an organism's chances to survive and reproduce in a particular

habitat (e.g., cacti needles/leaves, fur/scales)

- Evidence of fossils as indicators of how life and environmental conditions have changed
- b. Research and classify the organization of living things.(DOK 2)
 - Differences between plant and animal cells
 - Examples of organisms as single-celled or multi-celled
- d. Distinguish between asexual and sexual reproduction. (DOK 1)
 - Asexual reproduction processes in plants and fungi (e.g., vegeta-

tive propagation in stems, roots, and leaves of plants, budding in yeasts, fruiting bodies in fungi)

- Asexual cell division (mushroom spores produced/dispersed)
- Sexual reproduction (e.g., eggs, seeds, fruit)
- e. Give examples of how consumers and producers (carnivores, herbivores, omnivores, and decomposers) are related in food chains and food webs. (DOK 1)



4th Grade Objectives for Under The Sea

3. Develop and demonstrate an understanding of the characteristics, structures, life cycles, and environments of organisms.

c. Compare characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to the environment. (DOK 2)

- Life cycles of various animals to include complete and incomplete metamorphosis
- Plant or animal structures that serve different functions in growth, adaptation, and survival
- Photosynthesis

d. Distinguish the parts of plants as they relate to sexual reproduction and explain the effects of various actions on the pollination process (e.g., wind, water, insects, adaptations of flowering plants, negative impacts of pesticides). (DOK 2)

e. Analyze food webs to interpret how energy flows from the sun. (DOK2)

f. Describe the structural and functional relationships among the cells of an organism. (DOK 2)

- Benefit from cooperating
- Vary greatly in appearance

- Perform very different roles



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Discovery Lab Rules/Procedures

Rules:

1. Be respectful to all group members and the teacher.
2. Do not begin a laboratory investigation until instructed to do so by the teacher.
3. Walk at all times throughout the lab.
4. Only a pencil is needed, therefore do not bring any extra items to lab. (Example: purses, binders, notebooks, backpacks etc...)

5. Be trustworthy and never touch, taste, smell or mix any chemicals unless your teacher instructs you do so.
6. Stay, work and talk to your own group. Don't leave your group and work area unless instructed by the teacher.
7. Do not sit or stand on counters or tables.
8. Follow all school wide rules while in the lab.

Procedures:

1. Read the directions carefully, paying attention to safety information and cautionary statements.
2. Clean your work area including the floor before leaving.
3. Place lab stools back under the lab tables.
4. Place lab notebooks neatly on the inside corner of the lab table.
5. Line up quietly when your station number is called.

What Parents Can Do To Help Encourage Science at Home

- Encourage your child to play outside.
- Accept items they may bring inside such as flowers or other objects and display them prominently.
- If your child wishes to make "collections" (e.g. rocks, flowers, etc.), encourage their efforts
- Try not to show fear or disgust if your child brings insects or worms indoors. Instead, ask questions about

their discovery and encourage them to make sure the creature is returned to its home.

- Support your child's questions. You don't have to have the answers, but maybe together you can try to find out. Look for answers in nature, and if necessary, try a book at the library or information on the internet.
- Purchase science related magazines for your child. I recommend *Ranger Rick*, *National Geographic Kids*, *Kids Dis-*

cover, and *Zoobooks*. All have beautiful pictures, articles, and ideas that engage children in learning more.

- Grow a garden.
- Involve your child in the care of family pets.

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Gaining
Understanding through
Exciting Investigations in
Science

