

MARINE BIOLOGY OUTLINE

Level 1: Good and Beautiful <https://www.goodandbeautiful.com/free-downloads/marine-biology/>

Free download

Free Video <https://www.goodandbeautiful.com/marine-biology/>

Free labs

Book pack \$14 -unit study approach

Extension \$7

Project: Design a reef pdf (Bonaire)

<https://duckduckgo.com/?q=coral+reef+design+&t=newext&atb=v267-1&ia=web>

LEVEL 2:

Apologia video (rental- use in class?) <https://www.apologia.com/product/marine-biology-2nd-edition-streaming-instructional-video-2/> \$159

Dissection kit (in class) <https://www.apologia.com/product/marine-biology-dissection-set/> \$60

Prepared slides <https://www.apologia.com/product/marine-biology-prepared-slide-set/> \$73 **OR**

OR Dissection kits <https://www.homesciencetools.com/product/marine-biology-dissection-kit/> \$70

Topics:

1. Ocean characteristics, floor mapping/geology – research & diagram (3-D)
 - a.
2. Tides and Estuary communities (salinity ecosystems)
 - a. https://oceanservice.noaa.gov/education/tutorial_estuaries/est05_circulation.html
 - b. Video: estuary: <https://www.youtube.com/watch?v=1X9aKJ2qI80>
 - c. Video: tide: <https://www.youtube.com/watch?v=zH3IVaXhBSw>
3. Chemical properties of ocean and effects of human activity (sun block, oil drilling, etc)
 - a. <https://www.noaa.gov/education/resource-collections/ocean-coasts/ocean-pollution>
 - b. pdf EFFECTS OF HUMAN ACTIVITIES ON THE INTERACTION OF GROUND WATER AND SURFACE WATER on this page
<https://duckduckgo.com/?q=3.+Chemical+properties+of+ocean+and+effects+of+human+activity+&t=newext&atb=v267-1&ia=web>
 - c. pollution: <https://www.worldatlas.com/articles/what-causes-ocean-pollution.html>
 - d. properties of: <https://byjus.com/chemistry/physical-and-chemical-properties-of-water/>
 - e. Video: https://www.youtube.com/watch?v=VdRfB9X_pyQ
4. Dissection Day
5. Soft coral vs. hard coral spawning/reproduction/restoration
 - a. <https://flowergarden.noaa.gov/education/coralspawning.html>
 - b. Video: <https://oceanservice.noaa.gov/facts/coral-spawning.html>

6. Animals vertebrates vs invertebrates
 - a. <https://byjus.com/biology/invertebrate-and-vertebrate-difference/>
 - b. Video: phytoplankton <https://www.youtube.com/watch?v=xH2qwxqNwV8>
7. Marine reptiles
8. Dissection day
9. Unicellular vs multicellular algae (importance to earth O-2 levels)
 - a. Unicellular: <https://agrocorn.com/unicellular-algae-what-are-they-characteristics-types-and-examples/>
 - b. Multicellular: <https://www.thoughtco.com/types-of-marine-algae-2291975>
 - i. <https://www.thoughtco.com/human-uses-for-seaweeds-2291917>
 - c. Video: <https://www.youtube.com/watch?v=BgMR2VaEVUo>
10. Dissection day
11. Coral reef design, health, by depth, creatures
 - a. <https://coralreefsystems.ucsd.edu/about-coral-reefs/biology-of-corals/>
 - b. <https://basicbiology.net/environment/marine/coral-reef>
 - c. <https://www.noaa.gov/education/resource-collections/marine-life/coral-reef-ecosystems>
 - d. Video: <https://www.youtube.com/watch?v=XYA2LapUHp8>
 - e. Video: (1+ hr) <https://www.youtube.com/watch?v=W1udEV5vIF0>
12. Continental shelf design, health, by depth, creatures
 - a. <https://www.nationalgeographic.org/encyclopedia/continental-shelf/>
 - b. video: <https://www.youtube.com/watch?v=Ibcl4YTiODA>
13. Ocean zones (5) Epipelagic Zone (surface of ocean- sunlight zone) vs deep ocean (dark zone)
 - a. <https://deepoceanfacts.com/ocean-layers>
 - b. Video: <https://www.youtube.com/watch?v=0ybBjbZnq9I>
14. Dissection Day

???Project for each class/level- design one reef in a large box w/ every child inputting material, designs, ideas: Design a reef pdf (Bonaire)

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