Principle 6: Grades 6-8

Principle 6:
The ocean and humans are inextricably interconnected.

Human Impact on the Ocean and Atmosphere

D.
Human activity contributes to changes in the ocean and atmosphere.

D.1. Fishing and aquaculture affect the ocean.

D.2. Aquaculture and fisheries can be a positive way to supply growing demands for seafood, if done responsibly.

D.3. Aquaculture can reduce stress on overfished wild-caught seafood populations.

D.4. Responsible fishery practices prevent the overfishing of target species, thus sustaining the ecosystem.

D.5. Aquaculture and fisheries can be destructive to ecosystems, if done improperly.

D.6. Aquaculture practices can release extra pollutants or non-native organisms into the water, and destroy habitats.

D.7. Many large-scale fishing practices can disrupt ecosystems, take more fish than can be replaced naturally and catch unintended organisms (bycatch).

D.8. The introduction of non-native species affects ocean ecosystems.

D.9. Non-native species can disrupt native food webs, introduce novel diseases and out-compete native species for resources, leading to changes in ecosystems and loss of native species.

D.10. Human-made modifications to the landscape affect the ocean.

D.11. Builidng structures on land can affect the ocean in many ways, such as causing erosion, creating polluted runoff or altering the flow of waterways.

D.12. Building structures in the ocean, such as piers, jetties and marinas, can alter the shape of nearby coastlines and disrupt coastal habitats.

D.13. Human activity can lead to the excess input of greenhouse gases into the atmosphere, which can alter the temperature of Earth's atmosphere and affect the ocean.

D.14. The excessive input of greenhouse gases traps increased amounts of solar heat, which can raise the temperature of the ocean.

D.15. Changes in ocean temperature can influence marine organisms by altering physical conditions (i.e. current patterns and temperature ranges) to which they are adapted.

D.16. Excessive greenhouse gases in can lead to increased uptake of carbon dioxide by the ocean, which results in more acidic ocean water.

D.17. Changes in pH of ocean water can dissolve the shells, tests, and skeletons of many marine organisms.

See Principle 3: B5

D.18. Pollution affects life in the ocean.

D.19. Pollutants move from the land into the ocean as water flows through watersheds via runoff and rivers.

D.20. Pollutants move from the atmosphere onto land and into the ocean through rain (e.g., acid rain, acid deposition).

D.21. Solid waste, such as garbage, fishing nets and sewage, enters the ocean via human activity.

D.22. Marine organisms may ingest or absorb harmful toxicants, be impacted by water turbidity and get caught in and ingest marine debris.

See Principle 1: C10