

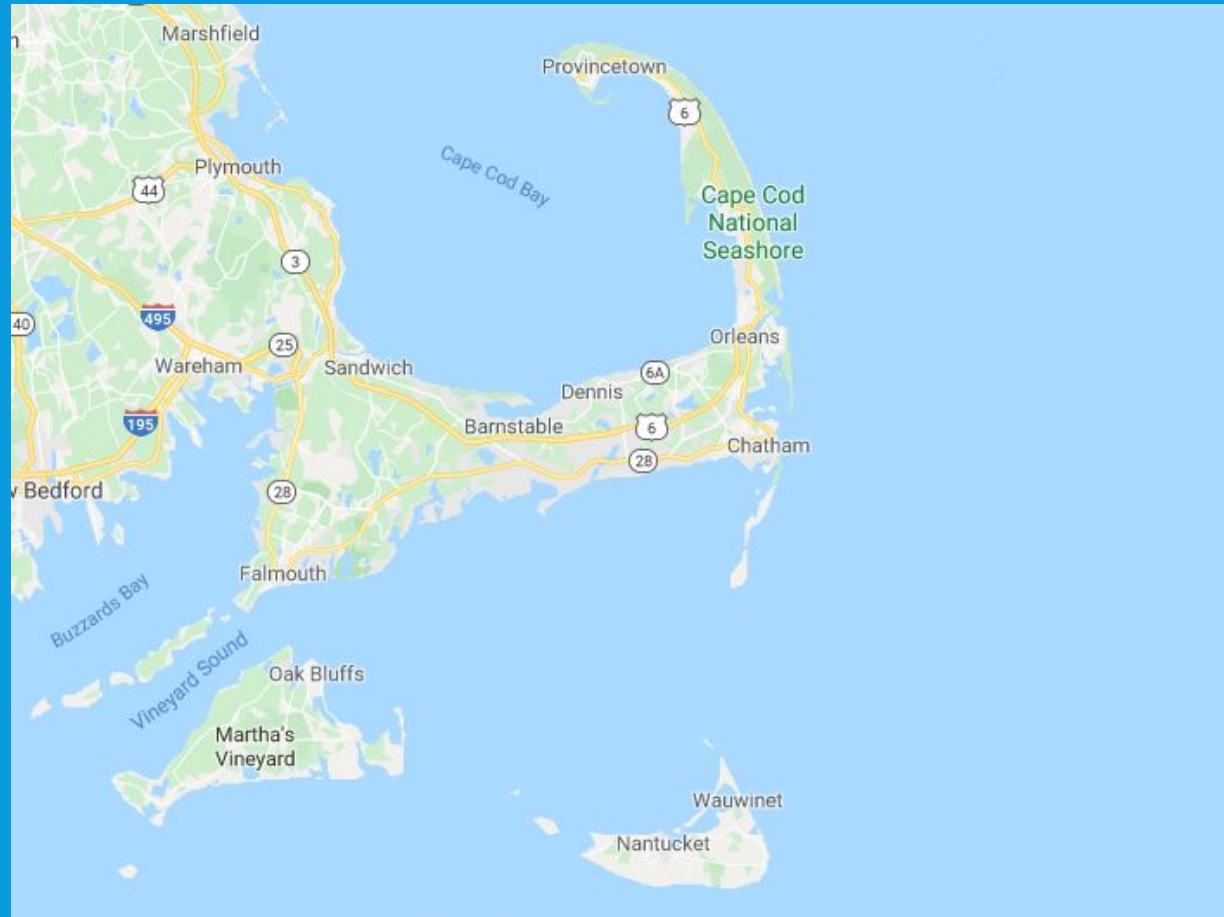
CAPE COD ECOSYSTEMS

Through Systems Thinking

CAPE COD



CAPE COD



VOCAB SHEET



VOCABULARY

System – a set of things working together

Ecosystem – a biological community of interacting organisms and their physical environment

Food Chain – a hierarchical series of organisms each dependent on the next as a source of food

Food Web – a system of interlocking and interdependent food chains

VOCABULARY

Systems Thinking
–a way of thinking that takes into account every part of the system, and how they are connected

Positive Feedback Loop –When one action causes the action to occur again

Tend to be bad for the system

Negative Feedback –When one action, causes an opposite action to occur

Tend to be good for the system

“Reset”

Steady State – a system that is not changing

VOCABULARY

- System – a set of things working together
- Ecosystem – a biological community of interacting organisms and their physical environment
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 - “Reset”
- Systems Thinking – a way of thinking that takes into account every part of the system, and how they are connected

PARTS OF THE SYSTEM

Local Fisher Men



Many times a family business, few amount of licenses, many times they are passed down through generations

Know fisheries are dependent on sustainable fishing

Family is dependent on their catch

Sharks



Great White: feed on seals and large game fish

Makos: Feed on large game fish

Are coming back to the area

Sharks were hunted after reals of Jaws and have recently been protected

Seals



Eat all sized fish

Can eat in great quantities

Hunted at once time because they were thought to be "eating all the fish"

Very important to the ecosystem,

PARTS OF THE SYSTEM

Orcas



Not native to the area

Feed on seals and large game fish

Have been observed to prey on sharks in recent years

Cod Fish



Extremely Popular Fish

Bottom Feeders

Fishing Cod is what drove people to populate the area

Young live in bottom environment, that can be destroyed by trawl nets

Industrial Fisherman



Have lots of funding to have large boats

Can stay out for weeks at a time

Use trawl nets to get a lot of fish

Trawl nets can have a lot of by catch, and ruin the sea floor

PARTS OF THE SYSTEM

Sport Fish



Popular white meat fish.

Chartered fishing trips.

Recreational fishing.

Ex. Stripped Bass
Swordfish
Blue Fish

Small Fish



Small Fish that large fish pray on

Small commercial value

Important step in the food chain

Plankton



Zooplankton -animals

Phytoplankton -plants

Base of the food chain

PARTS OF THE SYSTEM

Marine Mammal Protection Act



1972 Federal Act

"landmark conservation law that prohibits activities that harass, hunt, capture, collect, or kill marine mammals, such as whales, dolphins, seals, and manatees. In order to pursue activities that may incidentally (unintentionally but not unexpectedly) harm marine mammals' -NPCA.org

Tourist



Very important to the local economy.

Come to see the natural beauty of The Cape.

Eat local fish.

Ocean Conservation



Groups work to bring education to the masses.

Different groups work to conserve different aspects.

Many want sustainable practices when it comes to the ocean to protect the natural habitats within the ocean.

PARTS OF THE SYSTEM

Systems Thinking



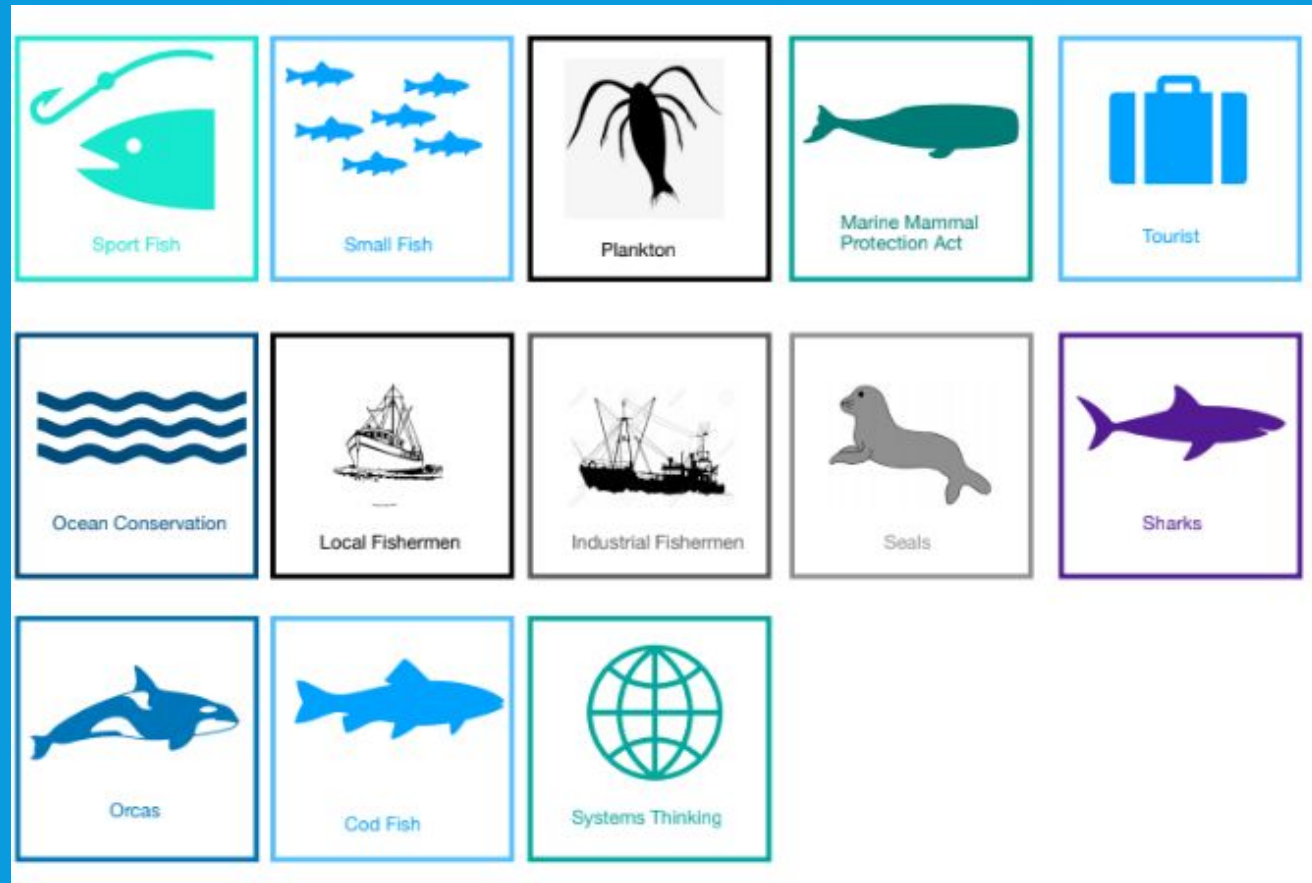
A way of thinking that accounts for the consequences of actions.

Looks at the connections of the system.

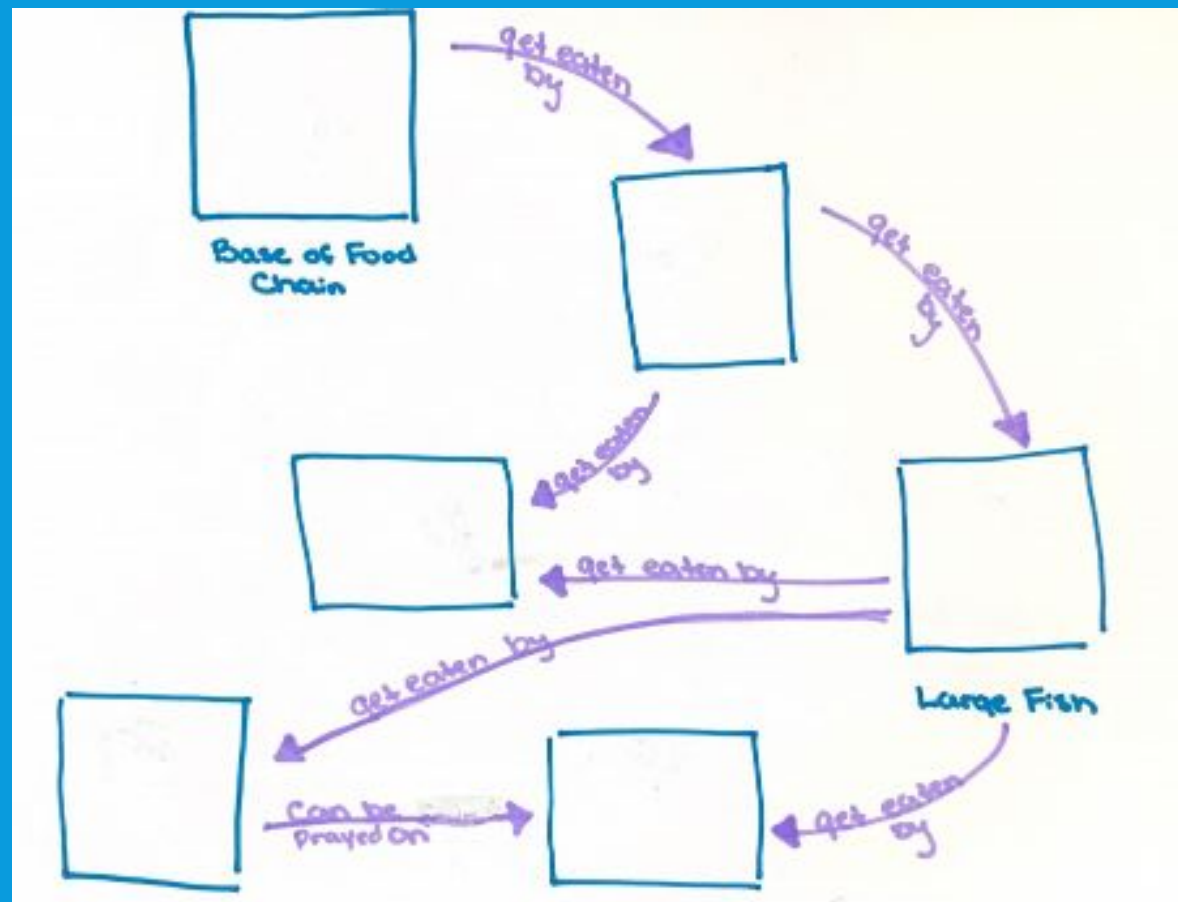
WHY DO WE CARE?



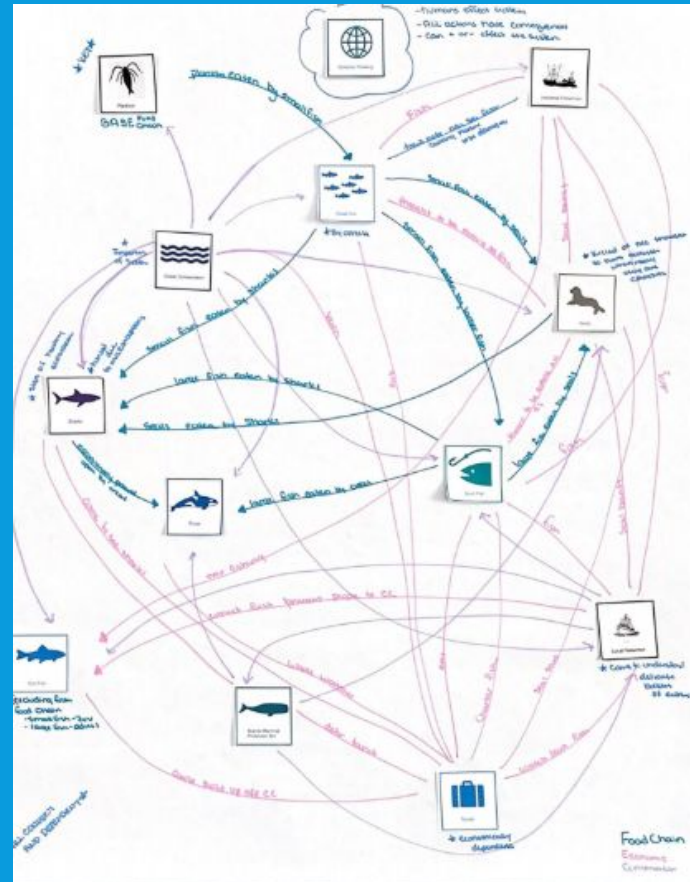
TIME TO TRY IT OUT



PUZZLE



SYSTEMS MAP



TIME TO PRACTICE