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Are the Oceans in Trouble? (8th Grade)

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Are the Oceans in Trouble? [7th-9th grades]

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Abstract

The goal of this unit is to equip students to explore how environmental changes affect organisms in an ecosystem and use that skill to defend an argument for or against the crisis in the ocean ecosystems. Additionally, students will determine the consequences of the role they play in global ecosystems and ways they could modify their behavior for more favorable global conditions.

Students begin their exploration by manipulating kelp forest ecosystem food webs and creating stable ecosystems that can best withstand crisis. From there students explore how changes in single organisms (specifically ecosystem engineers) affect the entire system, as well as how changes in the environment affect an ocean's ecosystems. The final project focuses on how human activities specifically affect the ocean. Students must answer the question "Are the oceans in trouble?" and defend their conclusion in a class presentation. After the defense, students must reveal an ad campaign that advocates ways the average student could respond to their conclusions.

(Standards are derived from the Texas Essential Knowledge and Skills for 8th grade)

(UbD 2.0)

Stage 1 – Desired Results

Established Goals
TEKS 112.20
Science Grade 8

(2E) analyze data to formulate reasonable explanations

(3A) scientific investigation and reasoning; examine evidence

(11) Organisms and environments. The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student will be expected to

(11A) describe producer/consumer, predator/prey, and parasite/host relationships as they occur in food webs within Marine, freshwater, and terrestrial ecosystems

(11B) investigate how organisms and populations in an ecosystem depend on and may compete for biotic and abiotic factors: quantity of light, water range of temperature or soil composition

(11C) explore how short- and long-term environmental changes affect organisms and traits in subsequent populations

(11D) recognize human dependence on ocean systems and explain how human activities such as run off, artificial reefs, or use of resources have modified these systems

Transfer

Students will independently use their learning to…

· *evaluate the cause and effect of large and small changes within an ecosystem*

· *determine the consequences of the role they play in the global ecosystem and ways they could modify their behavior for more favorable global conditions.*

Meaning

Understandings

Students will understand that…

· All parts of a living system rely on the other parts of that system to survive.

· One change in an environment can affect change for the environment as a whole.

· Human activity affects natural environments.

Essential Questions

· What makes a stable ecosystem?

· How do changes in an organism affect the other parts of the ecosystem?

· How do changes in the environment affect an ocean ecosystem?

· How do human activities affect the ocean ecosystems?

<table>
<tr><td colspan="2"></td><td colspan="2">Acquisition</td></tr>
<tr><td colspan="2"></td><td>Knowledge
Students will know…
· The parts of a food web (abiotic components, producers, consumers, decomposers) and the basic relationship between or among each component.
· Environmental factors organisms need to survive.
· How organisms respond to environmental changes (adaption to extinction).
· Ways humans rely on ocean systems.
· How the ocean affects weather and global patterns (from previous unit).</td><td>Skills
Students will be able to…
· Describe relationships as they occur in food webs.
· Investigate how organisms depend on biotic and abiotic factors in an ecosystem.
· Explore how environmental changes affect organisms.
· Recognize human dependence on ocean systems.
· Explain how human activities have modified ocean systems.
· Defend their view of how human activity affects the ocean environments.
· Depict or envision ways to counter human destructiveness.
· Create an ad campaign to promote their views on ways the average student can approach the global environment</td></tr>
<tr><td colspan="4">Stage 2 – Evidence</td></tr>
<tr><td>CODE
(M or T)</td><td>Evaluative Criteria
(for rubric)</td><td colspan="2">See Rubrics for Essential Questions and Performance Task</td></tr>
</table>

M/T M M M M M M M/T M M M/T		Performance Task(s) ***Students will demonstrate meaning-making and transfer by…*** **creating a presentation with an ad campaign: Students will justify an argument about whether the oceans are in trouble and create an ad campaign to advocate for ways the average student could respond to their conclusions.** --- Other Evidence (e.g., formative) · Pre-Assessment and quizzes · Review times during each class and before test · Exit Tickets · Identifying connections (food webs) in an ocean ecosystem (coastal kelp forests) · Creating a stable food web · Journaling activities · Identifying connections (food webs) to another ocean ecosystem (coral reefs) · Playing “Coral Reef Race for Survival” game; determining cause and effect for a coral reef ecosystem · Socratic Seminar: Discussing how ecosystem engineers (specifically whales) affect an ecosystem and the benefits of an ecosystem in semi-flux · Test · Constructive Feedback Sessions · Debrief times/class discussions · Interaction with community members: Marine Biologist/Oceanographer · Practice times for performance task
Stage 3 – Learning Plan		
CODE (A, M, T)	Pre-Assessment *Informal: Think Pair Share (TPS)*	

A	**Learning Activities (Approximately 4 weeks)** **Day 1-3: EQ- "What Makes a Stable Ecosystem?"** · Pre-assess in partners—TPS "What do you know about ecosystems? What makes up an ecosystem? Describe an ocean ecosystem" Teacher writes ideas, clears up misconceptions · View "Exploring Ecosystems: Coastal Food Webs" https://www.youtube.com/watch?v=LVJ5BKcAhAg Journal questions: What factors contribute to a healthy ecosystem in this **ocean** environment? What are the main points this video wants to convey?	Progress Monitoring (e.g., formative data) Informal Think-Pair-Share (TPS) Open each day verbally reviewing what class observed/created the day before using vocabulary
A	· Loosely follow California Academy of Sciences Lesson plan "How Stable is your Food Web?" (organism cards from an **ocean** ecosystem and answer keys) · Review basic food web **terms and vocabulary** (see attachment)	
M	· Pass out organism cards; Take 5-6 minutes for students to fill out cards; Spend 15 minutes engaging by playing a variety of games with the cards: "find a partner who…", line up from smallest creature to largest; form groups of like roles within an ecosystem · Have students self-organize into different food chain scenarios; Each food chain should include 3 organisms and show the flow of energy from the sun through each organism.	Observe and guide organism card activities; watch for students to make observations and connections.
M	· Have students freeze and verbally review; call out producers, consumers, etc. and have students raise their hands. Ask students to make observations about size of creatures and size of population.	
M	· Students maintain the same organism cards, this time using pieces of yarn, students connect themselves to one another in the classroom to form an entire class web, showing how all organisms interact.	
M	· Ask questions: How can we model the flow of energy? Can we remove an organism from this web without leaving another creature without anything to eat at all?	
M	· Show Ecosystem and Ecological Networks tutorial video; journal these questions: "What are the main points from the video? What makes an ecosystem extra resilient to change/keeps it stable? Considering the kelp forest as an example of an ecosystem network, which of the organisms might play a more crucial role than others?" Share answers. · Create a Stable Food Web in the Kelp Forest Activity: Students create food webs on butcher paper;	Journaling activity based on videos "Create a Stable Food Web" project

M	· Teacher tests stability with different scenarios based on real life events (cause). Students discuss the potential effects of each scenario. The ecosystem models are ranked. · Students **Exit Ticket**: Answer the EQ based on what you know from the lesson. **Day 4-6: EQ- "How do changes in one organism affect the other parts of the ecosystem?"** · Briefly review and pass back exit tickets from previous day.	Exit Ticket: answering the EQ based on takeaways from the food web lesson.
A	· **Quiz**: How would you revise the most stable ecosystem from yesterday? What are the components of the food web system, and how do they interact with each other? Why does a healthy ecosystem need multiple species of different types to remain stable?	Quiz
A	· Listen to clip from Science Friday with Ira Flatow about how whales are Ecosystem Engineers: http://www.wnyc.org/story/scientists-call-whales-the-engineers-of-the-ocean-ecosystem/ Students jot down the main ideas of the clip and share their thoughts after listening.	Journaling main ideas
A	· Discuss as a class a new terminology (add to vocabulary): **Ecosystem Engineers-** any organism that creates, significantly modifies, maintains or destroys a habitat. These organisms can have a large impact on the species richness and landscape-level heterogeneity of an area.	
A	· Popcorn ideas on Ecosystem Engineers in the ocean other than whales and in other ecosystems. (Or if students do not have prior knowledge, call out other environmental engineers—beavers, earthworms, ect.—and ask students to describe how an ecosystem functions around such organisms.) Recall how the original video in the unit called attention to whale falls and how important those events are to the ocean ecosystem. Discuss why it is beneficial to facilitate the repopulation of whales and other endangered animals, especially an ecosystem engineer.	Popcorn class discussion to check for prior knowledge
M	· Have students read and annotate an article about Whales as Ecosystem Engineers (such as this one put out by the University of Vermont). · Students will come to class prepared for a Socratic Seminar the next day with annotated articles and answers to the following big picture questions: What led to the large decrease in whale populations around the world? Why do these scientists believe the commercial fishermen's fears of whales acting as competition for their fish is unfounded? How does this article help	Annotations and questions about an article ***ELA connection: Students can write elegy poems or haiku about endangered animals, exploring how these animals fit into the bigger ecosystem and how that ecosystem impacts people. (See p.10 of this poetry journal:***

M/T	answer our EQ: How do changes in an organism affect other parts of the ecosystem? What is our role in the conservation of whales here in Texas? (or How can we help?) · **Socratic Seminar**: video example here. (Takes whole class period: includes three 10 minute discussions or two 20 minute discussions, depending on skill of students, with reflection of progress toward goals in between discussion blocks. Utilize inner/outer circle for larger classes with hot seat for outer circle participation.)	***http://www.getcreativesanantonio.com/Portals/3/Files/St.Anthony-PoetryExchange-Journal_OFFICE%20COPY_Spreads.pdf?ver=2017-06-16-115049-807*** Socratic Seminar
A M	**Day 7-8: EQ- "How do changes in the environment affect an ocean ecosystem?"** · As a warm up activity, project the fun quiz "The Importance of the Coral Reef" from Toni Albert's book The Incredible Coral Reef on the board. (Also found on p.92 of the EPA Coral Reef Activities PDF.) Have students categorize themselves. Take data on which environmental personality dominates the class/all your classes	
A	· Discuss as a class a new terminology (add to vocabulary): **Coral Reef-** A mound or ridge of living coral, coral skeletons, and calcium carbonate deposits from other organisms such as calcareous algae, mollusks, and protozoans. Most coral reefs form in warm, shallow sea waters and rise to or near the surface, generally in the form of a barrier reef, fringing reef, or atoll. · To review food webs and introduce a new ocean ecosystem (Coral Reefs) have students use card pictures (see attachments for activity) to explore individually or with partners which organisms are producers and which organisms are consumers (tertiary, secondary, and primary). Then have students glue cards into their notebooks in a food web, using a pencil to label and connect each picture.	Interactive notebook activity
A/M	· Watch film "The Quest to Save the Coral Reefs" and have students list as many threats to coral reefs as they can from the film. Discuss afterward what natural and human phenomenon affect the reefs.	
M	· Review the threats with the worksheet, "Threats to the Coral Reef" from Toni Albert's book The Incredible Coral Reef. (Also found on p. 93 of the EPA Coral Reef Activities PDF.) Have the students check their answers against one another.	Coral reef threats worksheet
M/T	· Play a game like "Coral Reef Race for Survival" with your students, (See pp.101-103 in the EPA Coral Reef Activities PDF.) where you suggest various disasters or	

M/T	survival moments. The team with the surviving coral wins. · Debrief what happened in the game as a class. · Students will answer the EQ "How do changes in the environment affect ocean ecosystems?" as an **Exit Ticket**.	Exit Ticket: answering EQ based on takeaways from the coral reef activities
M	**Day 9-10: Review and Test** · Use dry erase boards and Flip Quiz to review first three essential questions, first three skills and first three knowledge statements (or i-pads and quizlet if technology is available) · Have students work on a review sheet and ask questions about areas of the unit that are a struggle · **Test** the students using an essay test with a rubric that covers the areas of review	Review Game Review page Test (Summative)
A M/A M/A	**Days 11-20: EQ- "How do Human Activities Affect the Ocean Ecosystems?"** **Days 11-17 will be research and organization days; Most of the work should be accomplished in class.** **Days 18-20 will be group presentation days** · Based on the information gathered in class up to this point, students should be able to formulate a basic answer to the EQ. Begin Day 11 by having students journal their thoughts and then pair and share. · Introduce project "Are the Oceans in Trouble?" and group the students into heterogeneous groups. Give students Expectations Packets and Rubrics. Review expectations outlining what are individual grades and what are group grades.	
M	· Students will first fill out a chart in their groups that lists what they "Already Know" that will help them do this project and what they "Need to Know" to best complete the project. Students can split the "Need to Know" list among the group members for research points. · Allow students time to brainstorm and create thought webs on how their project should go. · **Exit Ticket**: Each student will turn in a page declaring their three research questions that they personally will be researching for the group. Students will need access to books, libraries, computers and internet. If these are not readily available in the classroom, plan trips to the school or community libraries and computer labs during this	Observing "Know/Need to Know" lists and thought webs Exit Tickets: a list of three areas to research.

A A M M/T T	7-day period before the presentations. It will help the process to schedule a classroom visit or Nepris or Skype call from a professional in the field (Marine Biology, Oceanography, etc.) who is willing to answer student questions. The following checkpoints are an example of how the research days can be spent: · Refer to checkpoints, reminding students often about the timeline as you peruse, and act as a resource. · Day 12-Library visit · Day 13-Computer lab visit · Day 14-Nepris call with a Marine Biologist · Day 15-Research due (answers to questions from day 11). Do a quick constructive feedback session over research answers pairing students with homogeneous partners from other groups. Have students begin work on Poster or Powerpoint presentation and Ad Campaign. · Day 16-17-Have students practice their presentations with other groups. Students give constructive feedback. · Day 18-20-Students give **Presentations: Defend answer to the question "Is the Ocean in Trouble?" and display Ad Campaign that promotes their ideas**; Those observing write constructive feedback for the presentations.	Research Answers ***ELA connection: Students could write persuasive essays answering whether the oceans are in trouble and what human involvement means to the answer.*** Presentation Practice **Presentations (Summative Assessment)**

Other Resources:	PDF of Coral Reef Activities compiled by the EPA for teacher use in middle school classrooms	https://nepis.epa.gov/Exe/ZyPDF.cgi/400004AS.PDF?Dockey=400004AS.PDF
	Article on Marine food webs	https://www.sciencelearn.org.nz/resources/143-marine-food-webs
	Lesson Plan on "What is a Coral Reef?"	http://ocean.si.edu/sites/default/files/lesson_plans/Dana%20Plucinski/7th%20-%20Lesson%201%20-%20What%20is%20a%20Coral%20Reef.pdf
	Video of a Sea Turtle eating a Jellyfish	https://www.youtube.com/watch?v=qhAzyXNMZ_c

Essential Question Rubrics:

What makes a stable ecosystem?

Mastery	Partial Mastery	Progressing	Emerging
Views stability as what creates balance, clarifying that when disaster strikes, a stable ecosystem will bounce back relatively quickly. Understands that when things are in balance, organisms have what they need to survive. Might describe measures of redundancy (multiple acceptable food sources or habitats) and adaptability (switch food sources or habitats) that provide stability. **Example**: Stability means that all the animals have what they need and the ecosystem stays pretty much the same even in a time of crisis. If it is out of balance, things will die out and things can crash quickly.	Views stability as a population effect: For an ecosystem to be stable, the sizes of the populations of organisms must be just right for the populations of the things that they need to eat. **Example**: The numbers of each animal has to be in the right balance with the numbers of the animals that it feeds upon for there to be stability.	Views stability in terms of individual organisms and mutual causality: Animals must eat certain amounts or they will deplete their diet sources. **Example**: If an otter eats too many fish, then it will run out of fish to eat.	Has a concept of stable, but not as it pertains to the abstract concepts in an ecosystem: Describes stable in terms of a secure shelf, a balanced scale, not tipping over, etc. **Example**: If something is stable, like a bookshelf, then the things in it won't be hurt.

Essential Question Rubrics:

How do changes in an organism affect the other parts of the ecosystem?

Mastery	Partial Mastery	Progressing	Emerging
Views a food web as transfer of energy. Describes changes in population as change in the amount of potential energy. Understands that organisms in an ecosystem depend on one another for survival, or must adapt when changes occur. Understands that ecosystem engineers are super organisms that cultivate an environment where populations within an ecosystem thrive. **Example**: A change in one organism affects the parts of the population that depend on that organism for energy. If there were a decrease in one, the creatures that depend on it would have to adapt to survive. If there is a decrease in ecosystem engineers, like kelp, it could cause a collapse of the entire ecosystem because of their role as producers, protectors, habitats, and shelter.	Views a food web as transfer of energy. Describes changes in population as change in the amount of potential energy. Understands that organisms in an ecosystem depend on one another for survival, or must adapt when changes occur. **Example**: A change in one organism affects the parts of the population that depend on that organism for energy. If there were a decrease in sea urchins, it would affect the creatures that depend on them like sea stars and otters. Those secondary consumers would have to adapt to survive.	Views a food web as a transfer of energy. Describes changes in a population of producers as a change in the amount of potential energy. Understands that organisms in an ecosystem depend on one another for survival. Changes in one organism affect the organisms that depend on it. **Example**: Kelp provides food and cover for the organisms that live in the coastal ecosystems. Warming waters or pollution often reduce the amount of kelp. This results in loss of both the organisms that depend on kelp for energy and the organisms that depend on those primary consumers.	Understands that organisms in an ecosystem depend on one another for survival because of food chain dynamics. Changes in one organism affect the organisms that depend on it. **Example**: If one kind of organism in an ecosystem dies, then the organisms that eat it will also die.

Essential Question Rubrics:

How do changes in the environment affect an ocean ecosystem?

Mastery	Partial Mastery	Progressing	Emerging
Understands that anything (from storms to human activity) that would affect the basic abiotic and biotic components of an ecosystem will alter that ecosystem. Recognizes that in the case of disasters a healthy/stable ecosystem will find balance and survival because the organisms will adapt or recover. Subsequently, a less stable ecosystem moves to eventual demise as populations fail to recover a balance and healthy transfer of energy. Might describe drastic human measures to reverse such demise.	Understands that anything (from storms to human activity) that would affect the basic abiotic and biotic components of an ecosystem will alter that ecosystem. Recognizes that drastic measures sometimes are necessary to reverse the effects of a disaster on an ecosystem.	Understands that disasters can be natural or from human activity. Understands they could alter ocean ecosystems. Recognizes that drastic measures sometimes are necessary to reverse the effects of a disaster on an ecosystem.	Has a concept that disasters cause problems for an ecosystem and that some systems don't recover.
Example: Stable ecosystems have population levels that help weather disastrous changes in the environment. A healthy coral reef that is struck by a hurricane will recover over time even if part of the reef is destroyed as populations adapt and recover in numbers. Alternately, if a negative change is constant over years, for example pollution that affects the acidity of the ocean, it might continue to put a stress on the health of a coral reef leading to eventual disappearance, unless big efforts are made to reverse the human damage.	**Example**: Both natural disasters and human activity affect ocean habitats. A coral reef that is struck by a hurricane could be destroyed. Sewage pollution dumped into the ocean affects the acidity of the ocean, which kills the algae the coral relies on leading to eventual disappearance, unless big efforts are made to reverse the human damage.	**Example**: Coral is fragile and can be destroyed by both people or nature. Changes that happen in the ocean from things that hurt the coral affect the whole ecosystem that depends on the coral. A lot of scientists are trying to find ways to help the coral survive.	**Example**: If a hurricane hits a coral ecosystem, it could cause that ecosystem to break apart and it might not survive.

Essential Question Rubrics:

How do human activities affect the ocean ecosystems?

Mastery	Partial Mastery	Progressing	Emerging
Understands that all humans rely on the environment and local ecosystems, especially ocean ecosystems, to survive. Recognizes that humans have the capacity to create environmental changes. Understands that human activities have both ability to help care for ocean ecosystems and destroy them. Might give specific examples. Maintains a sense of responsibility to care for the environment as a whole. Might have some innovative ideas on how individuals can help ocean environments.	Understands that all humans rely on the environment and local ecosystems, especially ocean ecosystems, to survive. Recognizes that humans have the capacity to create environmental changes. Understands that human activities have both ability to help care for ocean ecosystems and destroy them. Might give specific examples.	Understands that all humans rely on the environment and local ecosystems, especially ocean ecosystems, to survive. Recognizes that humans have the capacity to create environmental changes. May not give specific examples.	Recognizes that humans have the capacity to create environmental changes. May not give examples.
Example: We need the ocean. We get food from the ocean. The ocean cleans our air. Because the ocean takes care of us, we should take care of the ocean. Many of the ways we dispose of chemicals and waste pollutes the air and land. Because of the water cycle, all of that pollutions ends up in the ocean. This affects everything from plastic particles being consumed by fish to coral reefs dying due to higher ocean acidity. If we do not make an effort to clean our sewage and recycle our waste, it could affect the systems we rely on to survive. Humans can find ways to heal and help. Being creative and finding ways to reduce the negative impact of human lives on the environment will go a long way for our future.	**Example**: The ocean is a source of human food and recreation. Our daily activities affect these things for good and bad. The way we dispose of our waste has a huge impact on the environment. Most of the waste and chemicals end up in the ocean through runoff. Humans also are looking for ways to help the ocean ecosystems get better, like passing laws to not kill whales so the ecosystem won't break down.	**Example**: The ocean is important to us because we eat fish. We do some good things for the ocean and a lot of bad things to the ocean, like throwing trash in the ocean.	**Example**: What we do everyday affects what happens in the ocean. We do a lot of things that kills fish in the ocean.

Marine Ecosystem Terminology

- **biodiversity:** the variety of life on Earth or some other specified geographic region of the planet
- **carnivore:** an animal that eats meat (i.e., other animals)
- **consumer:** an organism, such as a cow or a shark, that must eat other organisms to obtain energy-rich food molecules because they cannot make the molecules themselves; consumers are also called heterotrophs; consumers are sub-categorized into Tertiary (3rd), Secondary (2nd), and Primary (1st) based on their size and level in a food chain.
- **decomposer:** an organism that breaks down organic material over time
- **detritus:** dead and decaying matter, including animal waste
- **ecosystem:** the community of different species in a particular geographic area and all of their interactions with each other and the physical environment; ecosystems are also called ecological networks
- **energy:** the ability to do work or cause change
- **food chain:** a series of events in which one organism eats another and obtains energy
- **food web:** the pattern of overlapping food chains in an ecosystem
- **herbivore:** an animal that eats plants; also called a primary consumer
- **kelp forest:** marine ecosystem where large, brown algae called giant kelp grow
- **omnivore:** an animal that eats both plants and animals
- **organism:** a living or formerly living thing
- **plankton:** microscopic organisms that live in the ocean and other bodies of water; phytoplankton are plant-like and can photosynthesize; zooplankton are animal-like and cannot photosynthesize
- **producer:** an organism, such as a plant, that can make its own energy-rich food molecules from inorganic materials and an energy source such as sunlight; producers are also called autotrophs
- **stable:** resistant to change, or able to return to a steady condition when disturbed
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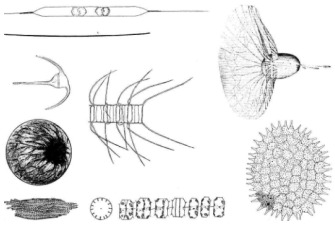
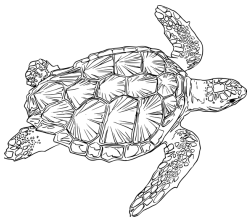
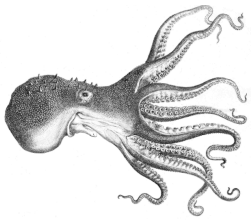
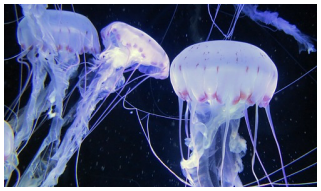
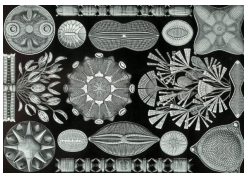
 **Butterflyfish**	 **Anemone**
 **Zooplankton**	 **Sun**
 **Sea Turtle**	 **Octopus**
 **Jellyfish**	 **Phytoplankton** photo on flickr by dodeckahedron
 **Parrot Fish**	 **Coral**
 **Crab**	 **Shark**

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Coral Reef Food Web Activity

Follow the directions below for this activity. ***DO NOT GLUE UNTIL STEP 6***:

1. Cut out the cards of the participants in the coral reef food web.

2. Lay each card out in categories: Original energy source, producers, and consumers.

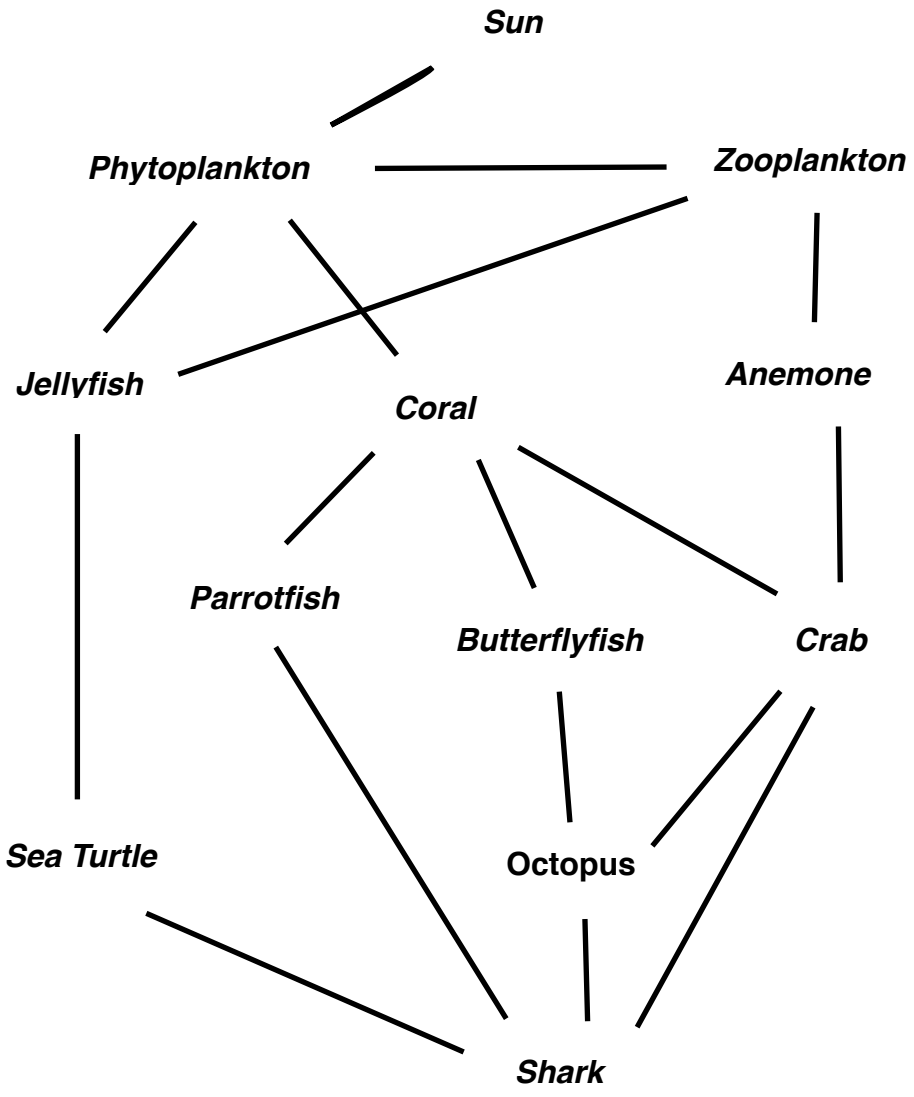
3. Raise your hand when you have these categories set, so the teacher can check.

4. Next arrange the organisms in a web on the blank part at the bottom of this page or on the back, connecting the organisms with pencil marks. Extension: Use arrows to show the transfer of energy.

5. Raise your hand when you are sure it is set, so the the teacher can check.

6. Once your teacher gives you the go ahead, glue the web into your interactive notebook. Again, connect the pictures with lines or arrows showing the transfer of energy.

KEY:



Are the Oceans in Trouble?

Affirmative: If so, what can the average person in San Antonio do to help?

Negative: If not what is the average person in San Antonio's responsibility in caring for the ocean and its habitats?

1. My Group:

Name	Role
	Chief Operations Officer: presentation process, timeline, liaison
	Ad Campaign Manager: Develops and directs ad campaign
	Powerpoint Manager: Develops Powerpoint/Poster

2. What do we KNOW? What do we NEED to KNOW to answer this big question? (You may use the chart on the back of this page or a piece of paper if you need more room.) **Due at the end of class (Day 1).**
3. Each person in the group should choose 3 areas in your "Need to Know" list. Develop those areas into 3 focused questions that will guide your research. **Questions due at the end of class (Day 1).**

   My three research questions are:

   A.

   B.

   C.

3. Utilize the library and the internet to begin research. **Research due on day 5.**
4. Discuss as a group your findings and decide if you are on the **Affirmative side** or the **Negative side. Due on day 5.**
5. **Make a poster or Power Point presentation** outlining your group findings, your answers to the big questions. **Due days 6 and 7.**
6. **Create an Ad Campaign** promoting your ideas. Use a flyer or poster to help the average person in San Antonio know what to do to be a good citizen! **Due days 6 and 7.**
7. On project days 6 and 7, your team will **prepare for a presentation** defending your point of view and revealing your Ad Campaign. Every group member must speak for 1-2 minutes during the presentation. **Each presentation will be 5-7 minutes. Presenters must spend an additional 3 minutes answering questions. Presentations will take place on days 8-10.**
8. Use the sites below as a starting place for internet research:

http://wwf.panda.org/what_we_do/how_we_work/our_global_goals/oceans/
http://nas-sites.org/oceans/
https://www.nrdc.org/issues/oceans
http://www.pbs.org/search/?q=oceans
http://oceanservice.noaa.gov/facts/
http://www.sciencefriday.com/?s=ocean
Search for other reputable sites on Google: Remember to cite your sources

Are the Oceans in Trouble?

KNOW	NEED TO KNOW

“Are the Oceans in Trouble” Project Rubric (2 pages)

Name:_____ Group Members:_____

Category	*G or I	Area	Exemplary 4	Accomplished 3	Developing 2	Beginning 1
Research	I	Questions	Student has 3 researchable questions about ocean health.	Student has 3 researchable topics about ocean health.	Student has 2 researchable questions/topics about ocean health.	Student has 1 researchable question/ topic about ocean health.
Research	I	Answers	Student has recorded 3 thorough answers to research questions.	Student has recorded 2 thorough answers to research questions.	Student has recorded 1 thorough answer to research questions.	Student has recorded vague answers or overly simple answers to research questions.
Poster/ Powerpoint	G	Structure	Project piece clearly includes all the following: Title; Member names; Position (affirmative or negative); No grammar errors; Neat appearance.	Project piece is missing 1 to 2 of the Exemplary project requirements.	Project piece is missing 3 of the Exemplary project requirements.	Project piece is missing 4 of the Exemplary project requirements.
Poster/ Powerpoint	G	Facts and Research	Project piece clearly includes an equal amount of facts and research contributed by each member; Research and facts strongly support position taken as a group.	Project piece displays a slightly heavier influence by one or two group members Research and facts strongly support position taken as a group.	Research and facts somewhat support position taken as a group; and project piece may or may not display a slightly heavier influence by one or two group members.	Research and facts do not support position taken as a group; and project piece may or may not display a heavier influence by one group member.
Poster/ Powerpoint	G	Creativity	Project piece displays a large variety of creative elements (e.g.: color, pictures/images, interest/appeal, music and/or other).	Project piece displays several creative elements (e.g.: color, pictures/ images, interest/appeal, music and/or other).	Project piece displays a few creative elements (e.g.: color, pictures/images, interest/appeal, music and/ or other).	Project piece displays one or two creative elements (e.g.: color, pictures/images, interest/appeal, music and/or other).

“Are the Oceans in Trouble” Project Rubric (2 pages)

Category	*G or I	Area	Exemplary 4	Accomplished 3	Developing 2	Beginning 1
Presentation	I	Prepared-ness	Presenter speaks clearly, is knowledgable about information presented, uses time to defend group position, presents between 1-2 minutes.	Presentation is missing 1 of the Exemplary project requirements	Presentation is missing 2 of the Exemplary project requirements	Presentation is missing 3 of the Exemplary project requirements
Presentation	G	Cohesive-ness	Presentation flows and builds on itself; presents clear argument; supports group position; encourages exploration of ideas; lasts a total of 3-6 minutes (incl. Ad Camp/not incl. questions).	Presentation is missing 1-2 of the Exemplary project requirements	Presentation is missing 3 of the Exemplary project requirements	Presentation is missing 4 of the Exemplary project requirements
Ad Campaign	G	Structure	Ad Campaign clearly includes all of the following: Slogan; Appropriate directive (something the average person can do); No grammar errors; Neat appearance.	Ad Campaign is missing 1 of the Exemplary project requirements.	Ad Campaign is missing 2 of the Exemplary project requirements.	Ad Campaign is missing 3 of the Exemplary project requirements.
Ad Campaign	G	Persua-siveness	Ad Campaign defines a problem and presents a reasonable solution; observers left with sense of power to make a difference.	Ad campaign defines a problem and presents a reasonable solution.	Ad campaign defines a problem and presents a solution.	Ad campaign either defines a problem OR presents a solution.
**Peer Scores	I	**Average**	_____			
		Sub scores	_____	_____	_____	_____
					Total Score	_____/40

*G or I refers to “Group Grade” or “Individual Grade”--The final score on this rubric will be different for each member of the group since the scoring is a mix of group and individual grades.

**Students rate each other 1-4 in the following categories: Equal Work, Cooperation, Participation, Support of others, and Communication