Expert Pack: Water Pollution

Submitted by: Carthage Central School District, Carthage Middle School
Grade: 6 Date: February 2016

Topic/Subject

Water Pollution:
What can we learn about water pollution and its effect on our world?
How can we positively impact change?

Texts/Resources

Book(s)

1. *Saving Animals From Oil Spills*
2. *Eyewitness Ocean*
3. *Going Blue*

Article(s)

4. "Living near the Ocean"
5. "Water Pollution"

Infographic(s)

6. "Coastal Pollution"

Other Media

7. "Polluted Ocean Photos"
8. "Water Pollution"

Video

9. "Pollution of the Food Chain"
10. "Water Pollution"

Each expert pack contains a variety of selections grouped to create as coherent and gradual a learning process for students as possible, generally beginning with lower levels as measured by quantitative and qualitative measures, and moving to more complex levels in the latter selections. This gradated approach helps support students' ability to read the next selection and to become 'experts' on the topic they are reading about.
Refer to annotated bibliography on the following pages for the suggested sequence of readings.

Rationale and suggested sequence for reading:

The first resource, "Polluted Ocean Photos," creates a visual of the pollution impacting our oceans around the world. The second resource, "Pollution of the Food Chain," offers a short video on how humans are contaminating the food chain by releasing pollutants into the water. Students will then read the article, "Living near the Ocean," which describes the fundamental principles of living near the world's water supply. Next, the "Coastal Pollution" infographic provides students with a visual depicting the severity of ocean pollution along the heavily populated coastal regions. Students will further their understanding of how water becomes polluted by watching the video, "Water Pollution." The next three resources, ("Water Pollution," *Saving Animals from Oil Spills,* and *Eyewitness Ocean*) continue to explore the types of water pollution and begin to pinpoint more specific problems. Students will read sections of *Going Blue*, a book discussing how teens are saving the oceans. Using the final resource from BrainPop, "Water Pollution," students will look at a cartoon and decide what they can do to address the problem of water pollution.

The Common Core Shifts for ELA/Literacy:

1. Regular practice with complex text and its academic language
2. Reading, writing and speaking grounded in evidence from text, both literary and informational
3. *Building knowledge through content-rich nonfiction*

Though use of these expert packs will enhance student proficiency with most or all of the Common Core Standards, they focus primarily on Shift 3, and the highlighted portions of the standards below.

College and Career Readiness Anchor Standards for Reading Literary and/or Informational Texts *(the darkened sections of the standards are the focus of the Expert Pack learning for students)***:**

1. ***Read closely to determine what the text says explicitly and to make logical inferences from it*;** cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. ***Determine central ideas or themes of a text*** *and analyze their development*; summarize the key supporting details and ideas.
10. **Read and comprehend complex literary and informational texts independently and proficiently**

Annotated Bibliography
and suggested sequence for reading

N/A **"Polluted Ocean Photos"**

Author: N/A

Genre: Photography, informational

Length: Thirteen photographs and captions

Synopsis: Thirteen photographs and corresponding captions depicting pollution in the world's oceans.

Citation:

Polluted Ocean Photos -- National Geographic. (n.d.). Retrieved November 19, 2015, from http://ocean.nationalgeographic.com/ocean/photos/ocean-pollution/#/alaska-dump_46_600x450.jpg

Cost/Access: $0.00

Recommended Students Activities: Wonderings

N/A **"Pollution of the Food Chain"**

Author: N/A

Genre: Informational Video

Length: 34 seconds

Synopsis: This video depicts the cycle of a polluted food chain whereby pollutants enter the environment and contaminate food chains.

Citation:

Pollution of the Food Chain. [Video file]. (n.d.). Retrieved November 17, 2015, from http://asp.tumblebooks.com/Result.aspx?m=All&lang=&sub=&level=&levelo=&key=pollution&pub=&ccss=&ccsso=,

Cost/Access: School subscription to TumbleBooks $799

Recommended Student Activities: Wonderings

790L **"Living near the Ocean"**

Author: N/A

Genre: Informational; includes subject headings, photographs, and glossary

Length: approximately 400 words (including glossary)

Synopsis: Students will learn that coastal areas are popular places to live, work and visit. However, the population damages the oceans and coasts in several ways.

Citation:

Living near the ocean. (n.d.). *PebbleGo*. Retrieved November 19, 2015, from https://www.pebblego.com/content/socialstudies/article.html?a=5167&previous=5005

Cost/Access: School subscription to PebbleGo $395

Recommended Student activities: A Picture of Knowledge

N/A **"Coastal Pollution**

Author: N/A

Genre: Infographic, informational

Length: One page/image and information

Synopsis: Depicts pollution along the coasts near industrial or heavily populated areas. The map includes captions and concentrates on three major areas of the world: Gulf of Mexico, the Mediterranean Sea, and Europe.

Citation:

Enteractive, Inc.(Publisher). (1995). Coastal Pollution [Photograph]. Retrieved from http://elibrary.bigchalk.com/k6

Cost/Access: School subscription to eLibrary elementary is free for the state of NY. School eLibrary Elementary subscription without going through an NY BOCES is $795

Recommended Student Activities: Wonderings

N/A **"Water Pollution"**

Author: N/A

Genre: Informational, cartoon video

Length: 3:16 minutes

Synopsis: This animated video explains the process of water pollution and who is responsible.

Citation:

BrainPOP - Water Pollution - Movie [Video file]. (n.d.). Retrieved November 19, 2015, from https://www.brainpop.com/science/ourfragileenvironment/waterpollution/

Cost/Access: School subscription to BrainPOP $1695

Recommended Student Activities: Students will complete the Brainstorming activity and the graphic organizer linked with the BrainPop video on Water Pollution.

Recommended Student Activities: Pop Quiz provided by BrainPop

790L **"Water Pollution"**

Author: N/A

Genre: Informational, encyclopedia entry; includes subject clear subject headings

Length: 963 words

Synopsis: The article further discusses the pollution of water and begins to discuss types of pollution and the effects.

Citation:

Water Pollution. (2015). The New Book of Knowledge. Retrieved December 15, 2015, from Grolier Online http://nbk.grolier.jl.orc.scoolaid.net/ncpage?tn=/encyc/article.html&id=10002748&type=0ta

Cost/Access: School Subscription to Grolier Online Encyclopedia $669

Recommended Student Activities: Quiz Maker

970L ***Saving the Animals from Oil Spills***

Author: S. Person

Genre: Informational, narrative non-fiction

Length: 32 pages

Synopsis: Describes the process of saving animals that have been affected by oil spills.

Citation:

Person, S. (2012). Saving animals from oil spills. New York, NY: Bearport Pub.

Cost/Access: $25.27 from Amazon

Recommended Student Activities: A Picture of Knowledge

1160L ***Eyewitness Ocean***

Author: Miranda MacQuitty

Genre: Informational text

Length: Pages 60-65

Synopsis: Oceans and ocean life are in danger from a variety of sources. Includes facts about the ocean, sea life, and oil spills.

Citation:

MacQuitty, M., & Greenaway, F. (2014). *Eyewitness ocean*. New York, NY: DK Pub.

Cost/Access: $9.13 from Amazon.com

Recommended Student Activities: Wonderings

1170L ***Going Blue***

Author: Cathryn Berger Kaye and Philippe Cousteau

Genre: Informational handbook, narrative non-fiction

Length: Story of Tar Creek, pages 18-19, 60, 102, 126, 132

Synopsis:

The book educates teens about the earth's water crisis and gives them tools and inspiration to transform their ideas into action. With lively photos and practical suggestions, the book helps teens plan and do a meaningful service project that benefits our planet's water system. Students will read the Tar Creek entries to help them understand ways they can combat the problems created by water pollution.

Citation:

Kaye, C. B., & Cousteau, P. (2010). *Going blue: A teen guide to saving our oceans & waterways*. Minneapolis, MN: Free Spirit Pub.

Cost/Access: $12.16 from Amazon.com

Recommended Student Activities: Picture of knowledge

N/A **"Water Pollution"**

Author: N/A

Genre: Informational/political cartoon

Length: one page

Synopsis:

The cartoon depicts two people on the coast looking at the trash on the beach. Students will analyze the cartoon and understand they should take an active role in reducing water pollution.

Citation:

BrainPOP - Water Pollution - Movie. (n.d.). Retrieved December 15, 2015, from https://www.brainpop.com/science/ourfragileenvironment/waterpollution/fyi/

Cost/Access: School subscription to BrainPOP $1695

Recommended Student Activities: Wonderings

Supports for Struggling Students

By design, the **gradation of complexity** within each Expert Pack is a technique that provides struggling readers the opportunity to read more complex texts. Listed below are other measures of support that can be used when necessary.

- Provide a brief **student-friendly glossary** of some of the academic vocabulary (tier 2) and domain vocabulary (tier 3) essential to understanding the text

- Download the Wordsmyth widget to classroom computers/tablets for students to access student-friendly definitions for unknown words. http://www.wordsmyth.net/?mode=widget

- Provide brief **student friendly explanations** of necessary background knowledge

- Include **pictures or videos** related to the topic within and in addition to the set of resources in the pack

- Select a small number of texts to **read aloud** with some discussion about vocabulary work and background knowledge

- Provide **audio recordings** of the texts being read by a strong reader (teacher, parent, etc.)

- **Chunk the text** and provide brief questions for each chunk of text to be answered *before* students go on to the next chunk of text

- Pre-reading activities that focus on the **structure and graphic elements** of the text

- Provide **volunteer helpers** from the school community during independent reading time.

Text Complexity Guide

Going Blue: a Teen Guide to Saving our Oceans, Lakes, Rivers, and Wetlands
by Catherine Berger Kaye and Phillippe Cousteau

1. Quantitative Measure

Go to http://www.lexile.com/ and enter the title of the text in the Quick Book Search in the upper right of home page. Most texts will have a Lexile measure in this database. You can also copy and paste a selection of text using the Lexile analyzer.

1170L

2-3 band	420 -820L
4-5 band	740 -1010L
6-8 band	925 - 1185L
9 -10 band	1050 – 1335L
11 – CCR	1185 - 1385

2. Qualitative Features

Consider the four dimensions of text complexity below. For each dimension*, note specific examples from the text that make it more or less complex.

The text is straightforward, leading the reader through a case study of a group of students doing action research to save a local body of water, illustrating the stages of investigation, preparation, action, reflection, and demonstration. A second purpose within the selection is advocating for readers to take action about another example of water pollution. **Meaning/Purpose**	The text is explicitly organized, chunking the text in a sequential manner which follows the stages of action research. Text features used include title and captions as well as page colors to assist with section differentiation. The use of graphics was minimal for the selection but used extensively in the book as a whole. There are also notes in the margin to assist the reader to navigate the Tar Creek story on non-sequential pages within the larger text. **Structure**
Language The selected text contains heavy use of domain-specific vocabulary (lead, zinc, residue, toxic, Superfund Site, contamination, lead poisoning); much of the vocabulary is supported within the text itself; students would benefit from a glossary of the other terms not supported in the text.	**Knowledge Demands** Students should have some prior knowledge to the information presented in the text via previous exposure to the other resources in the expert pack. Some concepts may be part of the everyday knowledge of pollution concepts. Ideas are reviewed and elaborated upon as they are exposed to this text.

3. Reader and Task Considerations

What will challenge students most in this text? What supports can be provided?

- Making text-to-self and text-to-text connections from previously read resources in the expert pack could help students deepen their understanding of the purpose of action research to combat pollution.
- Rereading, chunking, and discussion could support students with sentence length and vocabulary demands. Many of the words can be supported with discussion of the context.

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Learning Worth Remembering

Cumulative Activities - The following activities should be completed and updated after reading each resource in the set. The purpose of these activities is to capture knowledge building from one resource to the next, and to provide a holistic snapshot of central ideas of the content covered in the expert pack. *It is recommended that students are **required** to complete one off the Cumulative Activities (Rolling Knowledge Journal or Rolling Vocabulary) for this Expert Pack.*

Rolling Knowledge Journal

1. Read each selection in the set, one at a time
2. After you read each resource, stop and think what the big learning was. What did you learn that was new and important about the topic from this resource? Write, draw, or list what you learned from the text about (topic).
3. Then write, draw, or list how this new resource added to what you learned from the last resource(s).

Sample Student Response

Title	**Write, Draw, or List**	
	New and important learning about the topic	**How does this resource add to what I learned already?**
1. "Polluted Ocean Photos"	This video depicts the cycle of a polluted food chain whereby pollutants enter the environment and contaminate food chains.	
2. "Pollution of the Food Chain"	This video depicts the cycle of a polluted food chain whereby pollutants enter the environment and contaminate food chains.	Pollutants get into the water and can make it harmful to both people and animals.
3."Living near the Ocean"	Students will learn that coastal areas are popular places to live, work and visit. However, the population damages the oceans and coasts in several ways.	People and factories are harming the water supply.

4."Coastal Pollution" -info graphic	Depicts pollution along the coasts near industrial or heavily populated areas. The map includes captions and concentrates on three major areas of the world: Gulf of Mexico, the Mediterranean Sea, and Europe.	This maps shows where large populations are located and those areas have concentrated areas of pollution.
5. "Water Pollution"-video	This animated video explains the process of water pollution and who is responsible.	This video shows the steps involved in how pollutants get into the water and then how that water gets into our houses.
6. "Water Pollution" – article	The article further discusses the pollution of water and begins to discuss types of pollution and the effects.	Surface water, groundwater, and oceans get polluted from many sources including chemicals, metals, acid rain, oil spillage, and sewage.
7. Saving Animals From Oil Spills	Describes the process of saving animals that have been affected by oil spills.	Because animals live in or near water, pollution affects them, and people need to take steps to protect them.
8. Eyewitness Ocean	Oceans and ocean life are in danger from a variety of sources. Includes facts about the ocean, sea life, and oil spills.	This book gives details on how oil and gas pollutes our water.
9. Going Blue	Oceans and ocean life are in danger from a variety of sources. Includes facts about the ocean, sea life, and oil spills.	If we all work together as these students did, we can fight the various types of water pollution.
10. "Water Pollutions" – cartoon	One person can make a difference simply by picking up trash on a beach.	I can help clean up water by not littering and picking up trash when I see it.

Rolling Vocabulary: "Sensational Six"

- Read each resource then determine the 6 words from each text that most exemplify the central idea of the text.
- Next use your 6 words to write about the most important idea of the text. You should have as many sentences as you do words.
- Continue this activity with EACH selection in the Expert Pack.
- After reading all the selections in the Expert Pack, go back and review your words.

- Now select the “Sensational Six” words from ALL word lists.
- Use the “Sensational Six” words to summarize the most important learning from this Expert Pack.

Sample Student Response

Title	**Six Vocabulary Words and Sentences**
1. “Polluted Ocean Photos”	**toxic, marine, debris, decompose, sewage, accidental** **Sentences:** 1. Poisons are **toxic,** and can make you ill. 2. Coral reefs attract a variety of beautiful **marine** life. 3. Mrs. Bush looked through the **debris** in the recycling bin to find her glasses. 4. Over time a dead animal will **decompose**, leaving just bone behind. 5. When you flush a toilet the **sewage** ends up in a water treatment plant to be purified. 6. The oil spill was **accidental**, but the captain was ticketed anyway.
2. “Pollution of the Food Chain”	**products, contaminate, crustacean, irrigation, species, food chain** **Sentences:** 1. A **product** is something made by people. 2. Dumping sewage into the lake caused **contamination** of our drinking water. 3. A crayfish is a marine **crustacean**. 4. The farmer **irrigated** his tomato plants using water. 5. Some **species** are at risk for becoming extinct due to pollution. 6. A shark eating a small fish is an example of the **food chain**.
3.“Living near the Ocean”	**coast, wetland, tourism, cargo, port, goods** **Sentences:** 1. My home in Florida is on the **coast** right on the water. 2. The **wetland** is a protected marshy area where hunting is not allowed. 3. **Tourism** brings many visitors to our area. 4. He led her through the ship to the **cargo** area carrying hundreds of containers. 5. My cruise ship docked at the **port.** 6. My company buys most of its **goods** from China.
4. “Coastal Pollution” -info graphic	**scum, currents, enclosed, industrial, populated, discharge** **Sentences:** 1. The new soap left a film of **scum** in my bathtub. 2. The ocean **currents** affect the speed of the ship.

	3. The landfill was **enclosed** by a fence on all sides. 4. The **industrial** nations produce the majority of goods sold around the world. 5. **Populated** areas produce a larger amount of harmful waste. 6. The treatment plant **discharges** 291,000 gallons of water each day.
5. "Water Pollution" – video	**substances, organism, neutralized, eroded, disperse, nutrients, purify** **Sentences:** 1. The **substances** in the cleaning product caused a skin rash. 2. The small **organism** was moving under the microscope. 3. Chemical agents are sometimes added to **neutralize** an excess of acid or alkali. 4. The side of the mountain **eroded** after the heavy rain. 5. She coughed softly and waved a hand to **disperse** the fumes. 6. Water is an essential **nutrient** needed to sustain life. 7. The Brita water pitcher helps **purify** the water.
6. "Water Pollution" – article	**pollutant, purification, deforestation, microbe, hazardous, pesticide** **Sentences:** 1. Sewage is a water **pollutant.** 2. Before I can drink the water, it must go through a **purification**. 3. The Amazon rain forest is shrinking because of **deforestation**. 4. I could actually see the **microbe** under the microscope. 5. Large amounts of fluoride in drinking water can be **hazardous** to your health. 6. The gardener used **pesticides** in his garden to kill the insects on his plants.
7. *Saving Animals From Oil Spills*	**biologist, waterproof, hypothermia, veterinarian, algae, patrolled, delicate, insulate** **Sentences:** 1. A **biologist** studies how things grow and develop. 2. A duck's feathers are **waterproof,** keeping him dry when in the water.. 3. If you fall through the ice, you can suffer **hypothermia**. 4. A **veterinarian** is a doctor that takes care of animals. 5. Seaweed is a form of **algae**. 6. A coast guard **patrolled** the water determining the extent of the oil spill. 7. Glassware is **delicate**, so please be careful when you put it away. 8. His winter coat **insulated** him from the icy cold wind.
8. *Eyewitness Ocean*	**reservoir, extract, commercial, decay** **Sentences:** 1. The **reservoir** was recently stocked with more fish.

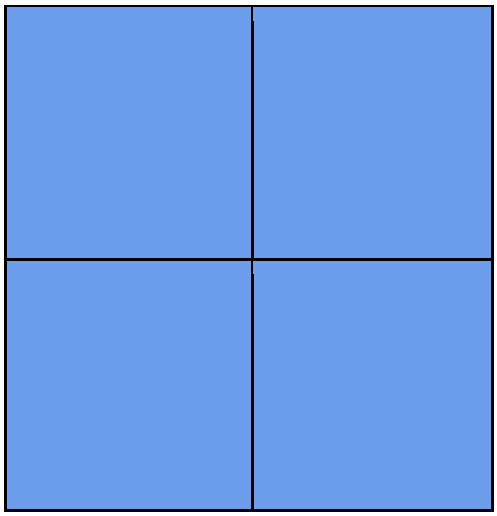
	2. Scientist use machines to **extract** oil from the water. 3. **Commercial** fishing drastically reduces the fish population. 4. When living things die, they will then **decay**.
9. *Going Blue*	**surroundings, documented, isolated, mountainous, access, sustainable, contamination** **Sentences:** 1. The children educated the community about their hazardous **surroundings**. 2. **Documenting** their cleanup steps was required for the students' cleanup project. 3. The chemical spill was contained to an **isolated** area. 4. Parts of the ocean floor can be **mountainous** and volcanic eruptions have been noted to occur. 5. The boats had **access** to the lake, causing additional environmental hazards. 6. Our ultimate goal is to create a **sustainable** world where nothing is wasted. 7. Dumping sewage into the lake caused **contamination** of our drinking water.
10. "Water Pollution" – cartoon	**N/A**
Sensational Six	**contaminate, pollutant, sustainable, purification, pesticide, debris**
Summary: Pesticides and other pollutants contaminate our water, soil, and life forms. These pollutants must be eliminated from our environment. Purification systems safely remove the unwanted toxins and debris, so that our world can become sustainable for all ecosystems.	

Learning Worth Remembering

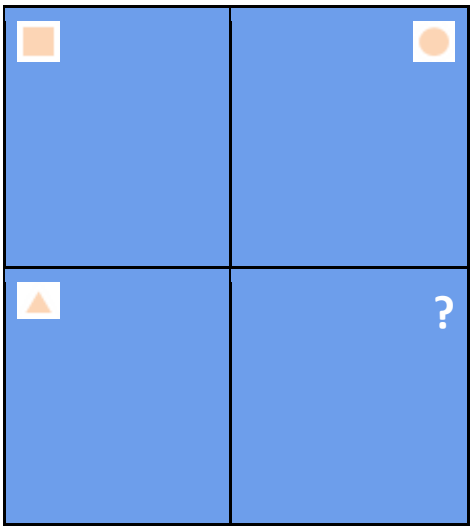
Singular Activities - The following activities can be assigned for each resource in the set. The purpose of these activities is to check for understanding, capture knowledge gained, and provide variety of ways for students to interact with each individual resource. Students may complete some or none of the suggested singular activities for each text. Singular activities should be assigned at the discretion of the teacher.

1. A Picture of Knowledge (Recommended for "Living near the Ocean", *Saving the Animals from Oil Spills, Going Blue*)

- Take a piece of paper and fold it two times: once across and once top to bottom so that it is divided into 4 quadrants.



- Draw these shapes in the corner of each quadrant.



1. Square
2. Triangle
3. Circle
4. Question Mark

- Write!

Square: What one thing did you read that was interesting to you?

Triangle: What one thing did you read that taught you something new?

Circle: What did you read that made you want to learn more?

Question Mark: What is still confusing to you? What do you still wonder about?

- Find at least one classmate who has read [selection] and talk to each other about what you put in each quadrant.

2. Quiz Maker (Recommended for "Water Pollution"-article)

· Make a list of # questions that would make sure another student understood the information.
· Your classmates should be able to find the answer to the question from the resource.
· Include answers for each question.
· Include where you can find the answer in the resource.

Question	**Answer**
1.	
2.	
3.	

3. Wonderings (Recommended for "Polluted Ocean Photos," "Pollution of the Food Chain," "Coastal Pollution," *Eyewitness Ocean*, "Water Pollution" - cartoon)

On the left, track things you don't understand from the article as you read.
On the right side, list some things you still wonder (or wonder now) about this *topic.*

I'm a little confused about:	This made me wonder:

4. **Pop Quiz** (Recommended for "Water Pollution" – video)

Answer the ten, pop quiz questions provided by BrainPop.

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Submitted by: Carthage Central School District, Carthage Middle School
Grade: 6 Date: February 2016

Expert Pack Glossary

"Polluted Ocean Photos"

Word	**Student-Friendly Definition**
Toxic	containing poison The water was **toxic** to the animals that drank it.
Marine	having to do with the sea; living in or caused by the sea Water pollution harms **marine** life.
Debris	scattered pieces left after something has been destroyed The hurricane left **debris** on the shoreline.
Decompose	to decay The trash left on the shoreline will **decompose** and leave toxins in our oceans.
Sewage	water and waste material that is carried away in sewers The break in the ship's plumbing line caused a **sewage** leak in the ocean.
Accidental	not planned or intended When the ship hit the iceberg, an **accidental** oil spill occurred.

"Pollution of the Food Chain"

Word	**Student-Friendly Definition**
Products	something that is made by humans, animals, or machines that did not exist before Many **products** on the market are harmful to the environment.
Contaminate	to ruin, infect, or make dirty by touching or adding something harmful The sewage leaks from the housing development will **contaminate** the rivers nearby.
Crustacean	an animal with a hard, jointed shell **Crustaceans** include shrimp, lobsters and crayfish.
Irrigation	the act of supplying of water to land or crops The **irrigation** system on the farm supplied water for the crops from the nearby lakes.
Species	a group of living things that are the same in many important ways

	Some **species** are at risk for becoming extinct due to pollution.
Food chain	a series of living beings in which each serves as food for the next. A shark eating a small fish is an example of how the **food chain** works.

"Living Near the Ocean"

Word	**Student-Friendly Definition**
Coast	the land next to the ocean The hurricane left debris from houses and buildings along the Florida **coast**.
Wetland	low-lying land saturated with moisture, such as a marsh or swamp Many animals thrive in the **wetlands**.
Tourism	the act of traveling, usually for sightseeing or relaxing Pollution has a huge impact on **tourism**.
Cargo	the goods carried by a ship, airplane, or other vehicle The ship's **cargo** consisted of fruits and vegetables grown in Mexico.
Port	a place where ships load The ship docked at the **port** to refuel.
Goods	things to buy and sell Small towns often have markets where the people can exchange **goods**.

"Coastal Pollution"

Word	**Student-Friendly Definition**
Scum	a layer of waste matter that forms on the surface of a liquid The **scum** on the water came from the rotting trash left on the shoreline.
Currents	mass of liquid or air that flows in one direction Strong **currents** carry garbage out to sea from the shorelines.
Enclosed	to put something around a thing to separate it from other things or people The landfill was **enclosed** by a fence on all sides.
Industrial	having to do with the production of goods and services by industry **Industrial** waste is very hazardous to the ozone layer.
Populated	the total number of people living in a country, city, or other area **Populated** areas produce a larger amount of harmful waste.
Discharge	to unload, empty, or release

	The **discharge** from engine, left an oily film on the water's surface.

"Water Pollution" [video]

Word	**Student Friendly Definition**
Substance	a particular kind of matter or material A foreign **substance** in the water supply can be harmful.
Organism	an individual living thing, such as a plant, an animal, or a bacteria **Organisms** are negatively impacted by pollutants in the water.
Neutralized	to cause to have no effect or become useless Chemical agents **neutralized** the excess of acid or alkali in the water.
Eroded	to wear away or eat into The shoreline was heavily **eroded** after the storm swept through.
Disperse	to drive away in all directions; scatter The crashing waves caused the birds on the beach to **disperse**.
Nutrients	something in food that helps people, animals, and plants live and grow Water is an essential **nutrient** for life.
Purify	to make clean or pure People can **purify** water to make it clean again.

"Water Pollution" [article]

Words	**Student-Friendly Definition**
Pollutant	a waste substance that makes air, water, or land impure or unhealthy; contaminant Sewage is a water **pollutant.**
Purification	to make clean or pure Before I can drink the water, it must go through a **purification**.
Deforestation	the act or process of cutting down the trees of a forest The Amazon rain forest is shrinking because of **deforestation**.
Microbe	a life form that can only be seen with a microscope. Many microbes are germs that cause disease. Using a microscope, I could actually see the **microbe** in the water**.**
Hazardous	full of danger; having great or many risks

	Polluting is **hazardous** to everyone's health.
Pesticide	a chemical substance used to kill insects that harm plants and crops The farmer sprayed **pesticide** on the crops to kill the beetles.

Saving Animals From Oil Spills

Word	**Student-Friendly Definition**
Biologist	a scientist who specializes in biology A **biologist** studies how things grow and develop.
Waterproof	able to keep water out of something You can **waterproof** your boots to keep them dry on the inside.
Hypothermia	a condition of very low body temperature If you fall through the ice, you can suffer **hypothermia**.
Veterinarian	a doctor for animals A **veterinarian** is a doctor that takes care of animals.
Algae	organisms that live mainly in the water and make their food through photosynthesis Seaweed is a form of **algae**.
Patrolled	to guard by making regular trips along or through A coast guard **patrolled** the water determining the extent of the oil spill.
Delicate	easy to break or hurt Glassware is **delicate**, so please be careful when you put it away.
Insulate	to cover with a material that reduces or stops the movement of heat, electricity, or sound His winter coat **insulated** him from the icy cold wind.

Eyewitness Ocean

Words	**Student-Friendly Definition**
Reservoir	a place where water is collected and stored The **reservoir** was recently stocked with more fish.
Extract	to take out by using force; remove Scientist use machines to **extract** oil from the water.
Commercial	having to do with trade or business **Commercial** fishing drastically reduces the fish population.

Decay	to rot or become rotted When living things die, they will then **decay**.

Going Blue

Words	**Student-Friendly Definition**
Surroundings	all the things around you; environment The children educated the community about their hazardous **surroundings**.
Documented	a written or printed paper that gives information or proof of something Using a notebook, the students **documented** the steps they followed in their clean up project.
Isolated	apart from other persons or things The chemical spill was contained to an **isolated** area.
Mountainous	having many mountains Parts of the ocean floor can be **mountainous**, and volcanic eruptions have been noted to occur.
Access	a way of approaching or coming to a place The boats had **access** to the lake, causing additional environmental hazards.
Sustainable	method of managing or using a resource so that the resource is not depleted or permanently damaged Our ultimate goal is to create a **sustainable** world where nothing is wasted.
Contamination	the act of contaminating Dumping sewage into the lake caused **contamination** of our drinking water.

"Water Pollution" [cartoon] - No significant words to include.