

Next Generation Science and
Common Core State Standards Aligned
Discussion & Activity Guide for



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Discussion Questions

When scientists see something they don't understand they have some huge urge to answer questions and discover new things. It's just one of those scientist personality traits.

~Biology4Kids.com

Were the following questions listed on page 7 answered in the course of reading this book? If so, prove your answer by citing the pages where the answers are printed.

-  How much plastic was in the Great Pacific Garbage Patch?
-  Were fish eating the plastic?
-  If so, were they dying because of it?
-  Were the chemicals used to make plastic poisoning the water?
-  Did plastic affect the food chain?
-  Were any animals and plants living on the floating plastic?






Just a generation ago, we packaged our products in reusable or recyclable materials – glass, metals, and paper, and designed products that would last. Today, our landfills and beaches are awash in plastic packaging, and expendable products that have no value at the end of their short lifecycle.

~5 Gyres Institute



Click on the links below to watch videos and access great websites dedicated to the study of the Great Pacific Garbage Patch and then answer the following questions.

Websites and videos:





-  [Inside the Plastic Vortex](#) – a video about the groundbreaking Scripps voyage led by students helps define a rising environmental threat.
-  [Digging into The Great Pacific Garbage Patch](#) – A look inside a gyre and the over 7 million tons of plastic destroying our oceans and harming our food chains.
-  [A video](#) about artist Aurora Robson who makes a practice to use discarded plastic as art.
-  [A video](#) about artist Sayaka Ganz who believes that no object is without value.
-  [The 5 Gyres Institute](#) has created an informative, interactive website in which they define the problem and offer solutions to help stop the devastating effects of the Great Pacific Garbage Patch.

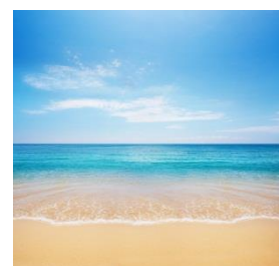
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What do you think?

-  Look closely at the pictures printed on page 21.
- Describe the contents of the jar Miriam is holding.
 - Do you think the plankton and the *Velella velella* jellies have been affected by plastic? If so, how?
 - Explain why the mussels, crabs, and sea anemones are living on a piece of discarded rope.
 - Miriam wonders how the floating ocean plastic affects *Halobates*. Make a prediction. How do you think the floating plastic affects them and other ocean creatures?
-  Look closely at the picture printed on page 25.
- Darcy is studying the carbon levels in the water, which helps her measure the number of valuable phytoplankton in the water. Notice the bits of plastic that were caught in the filter.
 - Phytoplankton are the foundation of the food chain. Scientists continue to wonder how plastic in the gyre affects phytoplankton. What are your thoughts?
 - If phytoplankton are affected, describe what might happen to the rest of the creatures in the ocean.
-  Look closely at the picture printed on page 37.
- Observe the tiny fish and plastic pieces captured together in the clear dish.
 - Tell how this picture makes you feel.
 - Do you think the tiny fish have been affected by the plastic? Explain how.
 - Darcy wonders if animals that eat phytoplankton might find plastic to be tastier, like junk food. Do you think this could be possible? How so?
 - Chelsea discovered that fish receive a double dose of plastic poison from the water and the plastic that they eat.
 - What about the fish that people eat? Does it have a double dose of plastic in it, as well?
 - Predict the trouble that this double dose of plastic might have on human beings.
-  Look closely at the picture printed on page 40.
- Compare the picture of the littered beach with the one featured on the left. In what ways are the two the same?
 - Contrast the pictures. List the ways that the two are different.
 - What can be done to solve the problem of the Great Pacific Garbage Patch? Chelsea says that “...people need to change their habits (41).” What sorts of habits is she referring to?



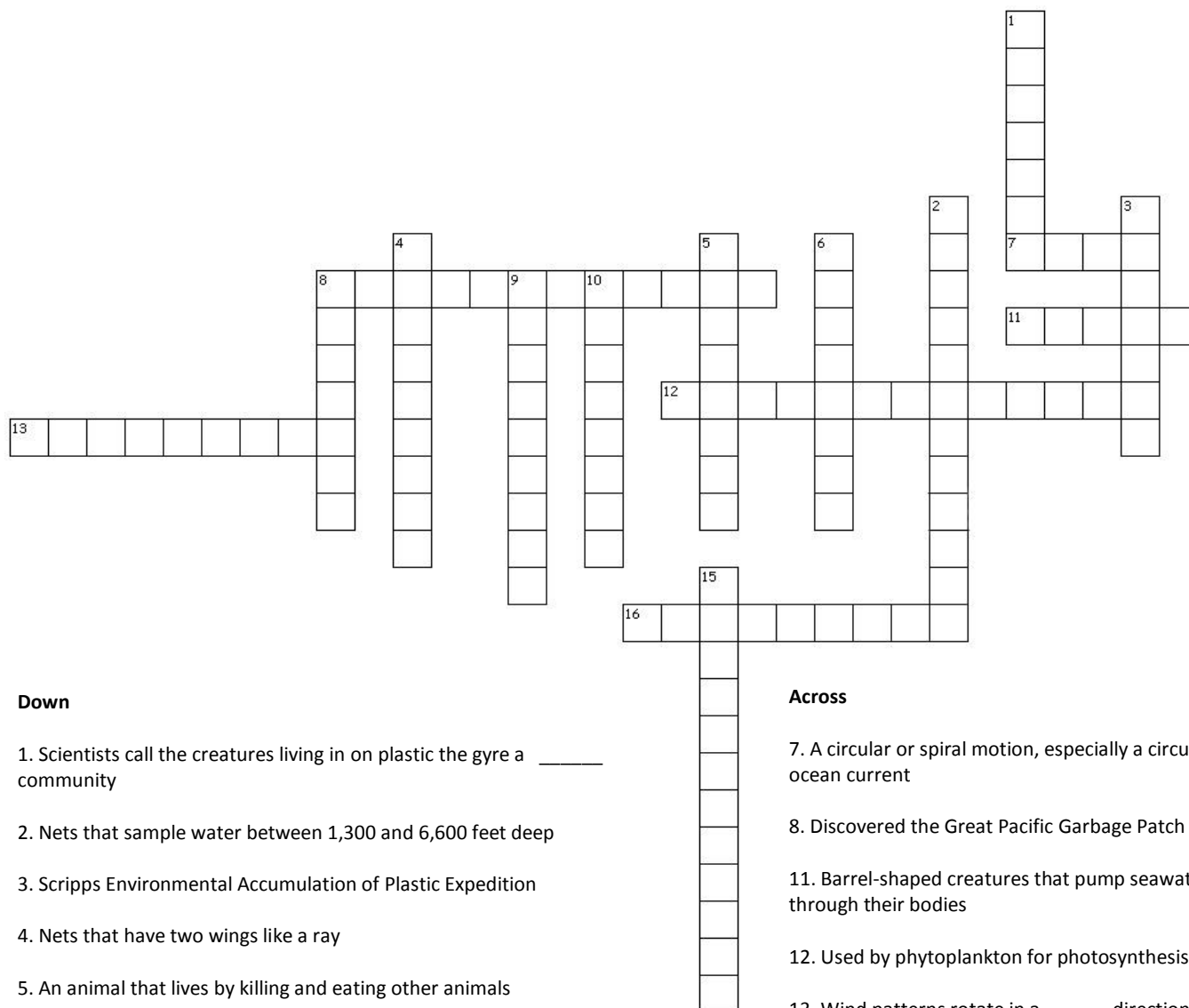
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Understanding Gyres Crossword Puzzle

Miriam called the gyre a liquid desert. On the surface, it appears almost lifeless. Upon closer inspection, several kinds of animals call it home (15).



Down

1. Scientists call the creatures living in on plastic the gyre a _____ community
2. Nets that sample water between 1,300 and 6,600 feet deep
3. Scripps Environmental Accumulation of Plastic Expedition
4. Nets that have two wings like a ray
5. An animal that lives by killing and eating other animals
6. Colorful sea animals that look like flowers
8. A stream of water that flows in one direction
9. A group of living things that interact with their environment
10. One-celled microscopic organisms
15. The North Pacific Central Gyre is three times bigger than the _____

Across

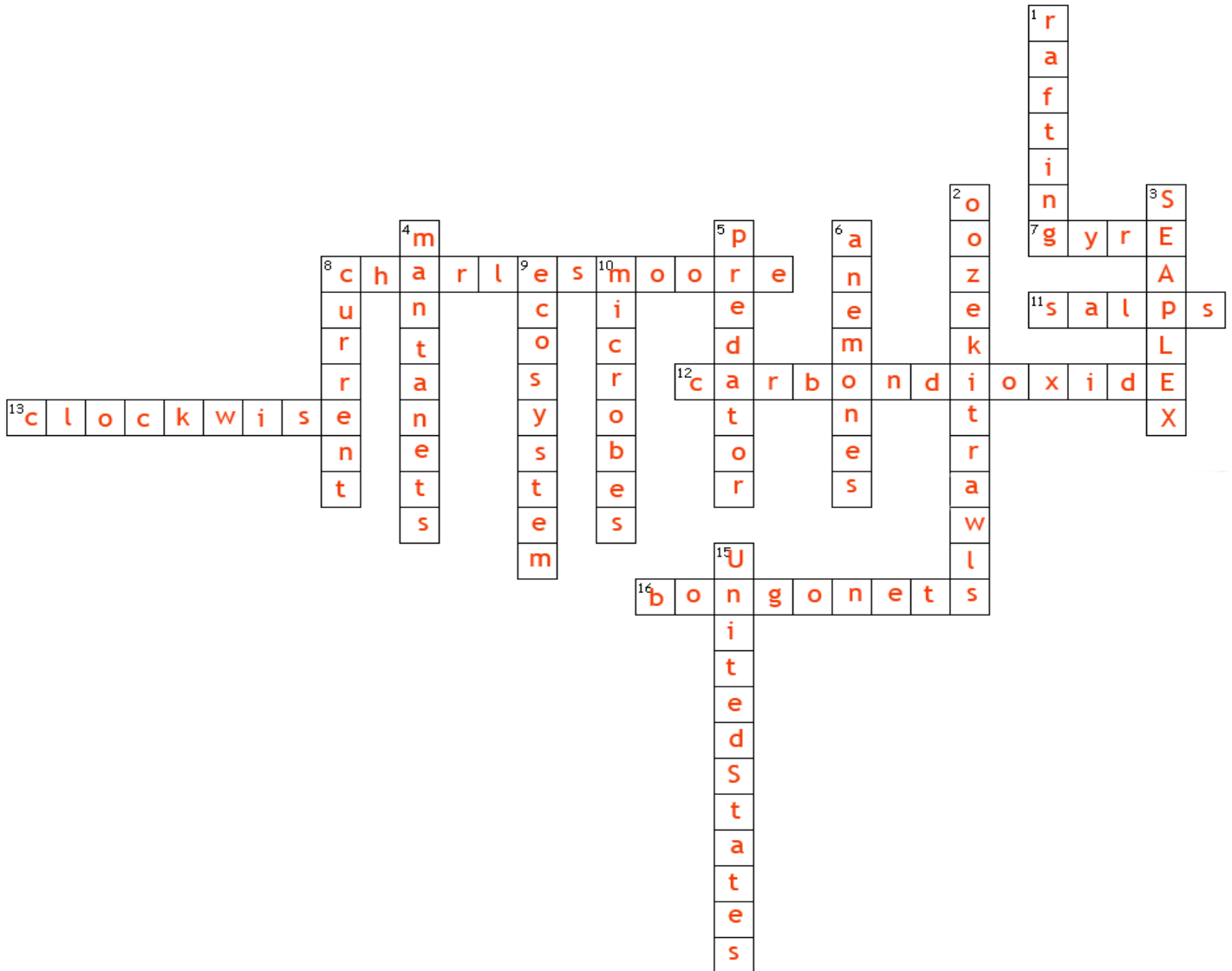
7. A circular or spiral motion, especially a circular ocean current
8. Discovered the Great Pacific Garbage Patch in 1997
11. Barrel-shaped creatures that pump seawater through their bodies
12. Used by phytoplankton for photosynthesis
13. Wind patterns rotate in a _____ direction
16. Looks like a set of drums

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Understanding Gyres Crossword Puzzle Answers



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Ocean Food Web Dropped Phrase Puzzle

As a result, the desert like gyre seemed to have become a major metropolis of rafters. What would all of this new life mean for the gyre (20)?

- 📄 Unscramble each of the clue words below.
- 📄 Copy the letters in the numbered cells to other cells with the same number.
- 📄 Clue words can be found in the chapter entitled "Miriam's Hitchhikers" (18-23).
- 📄 Answers to the Ocean Food Web Dropped Phrase Puzzle can be found on page 8.

NUS	8
HSIYRODD	2 25 20
NORZYABSO	4 27
NEALACSRB	23 5 26
YGRE	3
TYKHNLPNOOPT	29 1 17 22 14
NNZLPOAKOTO	19 7 28
PODSECO	15 16 24 9
IHSF	18
NIMPOTSOCIODE	6
SHLAOTAEB	11 12 10 13 21

1 2 3

4 5 6 7 8

9

10 11 12 13 14 15 16

17 18

19 20 21 22

23 24

25 26 27 28 29

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Ocean Food Web Dropped Phrase Puzzle Answers

NUS

sun
8

HSIYRODD

hydroids
2 25 20

NORZYABSO

bryozoans
4 27

NEALACSRB

barnacles
23 5 26

YGRE

gyre
3

TYKHNLAPNOOPT

phytoplankton
29 1 17 22 14

NNZLPOAKOTO

zooplankton
19 7 28

PODSECO

copepods
15 16 24 9

IHSF

fish
18

NIMPOTSOCIODE

decomposition
6

SHLAOTAEB

halobates
11 12 10 13 21

The ocean's balance of life and death.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29



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The Food Web


However, the connection between plastic and phytoplankton remains an important part of the plastic mystery for scientists. “The next time you cup seawater in your hands,” Darcy said, “realize that you hold within your grasp organisms which are crucial for sustaining life (28).”


Objective: To illustrate the sequential phases of photosynthesis and the ocean’s life cycle in a concrete, manipulative manner.

Materials:

-  Cardstock
-  Scissors
-  Glue stick or tape
-  The Food Web Matrix (pg. 10)
-  The Food Web Picture Cards (pg. 11)
-  The Food Web Answer Guide (pg. 12)
-  *Plastic, Ahoy! Investigating the Great Pacific Garbage Patch*

Procedure:

-  Study the sequential phases of energy transfer by matching the picture cards to the Photosynthesis Energy Transfer Matrix.
 - Print matrix and picture cards on cardstock.
 - Using scissors, trim around the edges of the picture cards.
 - Place the picture cards in the correct place on the Food Web Matrix.
 - Check your work using the Food Web Matrix Answer Guide.

-  Discuss the possible detrimental effects of plastic on the various stages of the ocean’s life cycle.

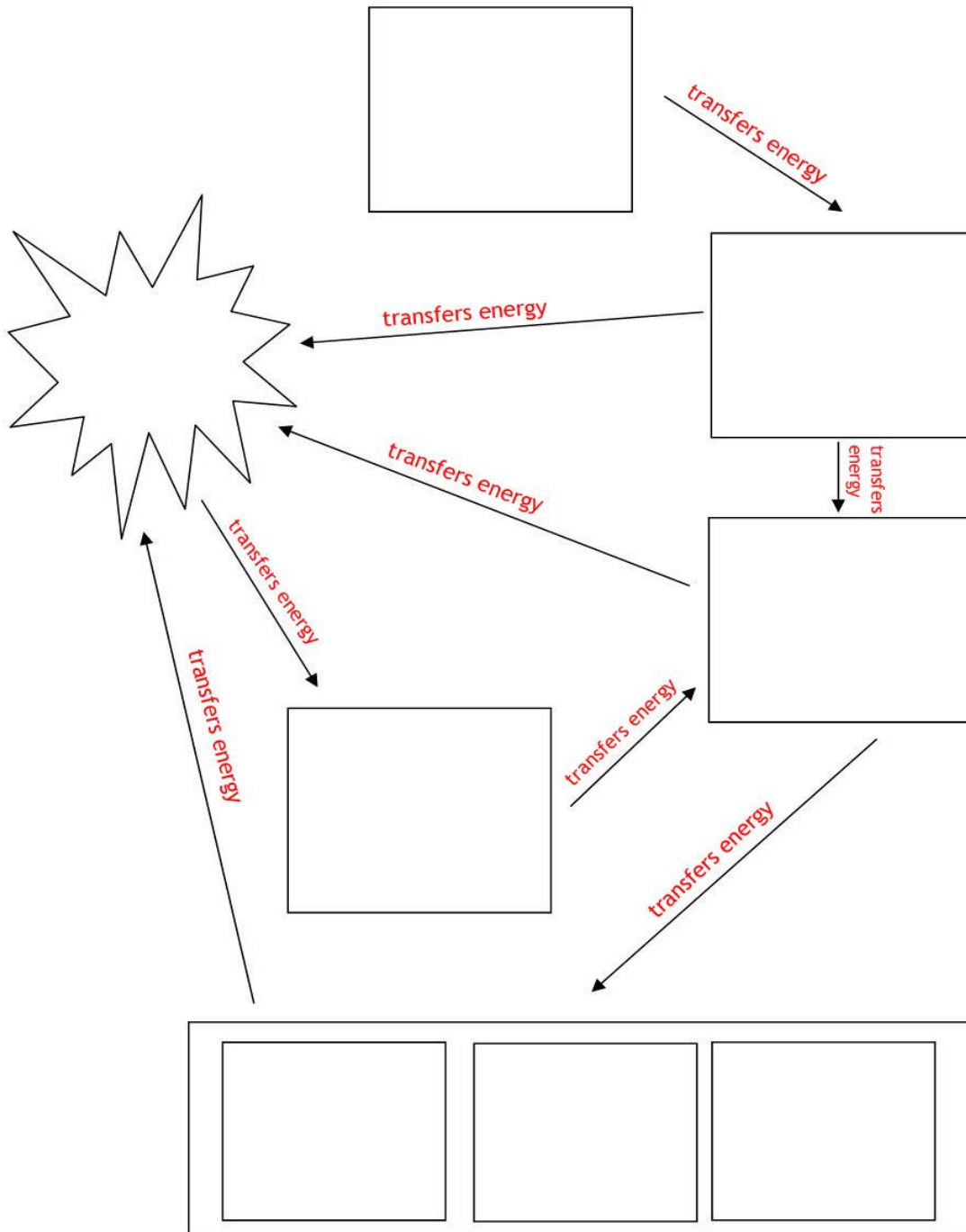


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Food Web Matrix



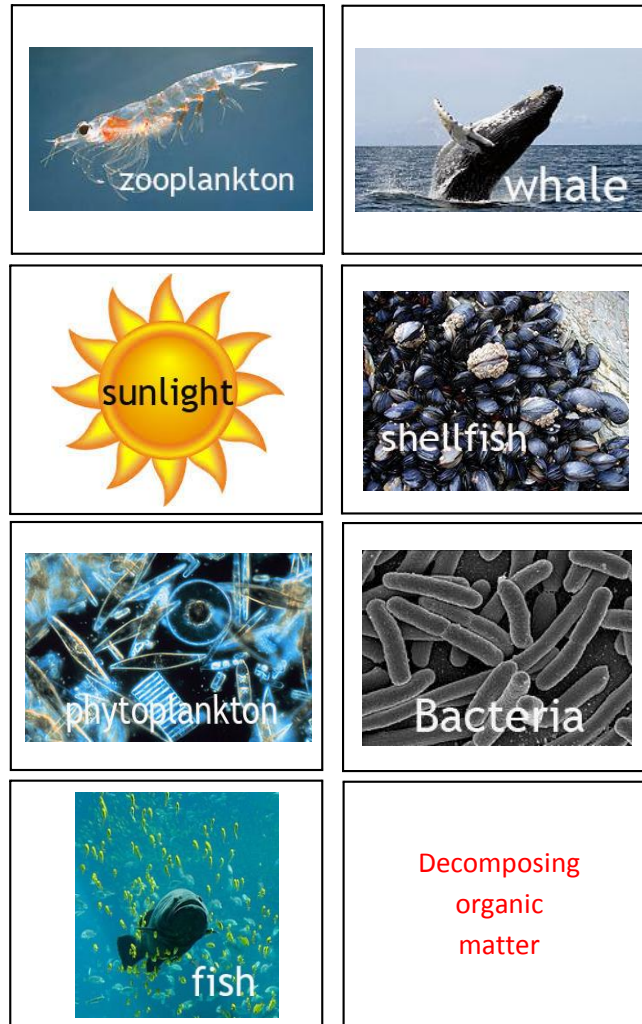
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Food Web Picture Cards

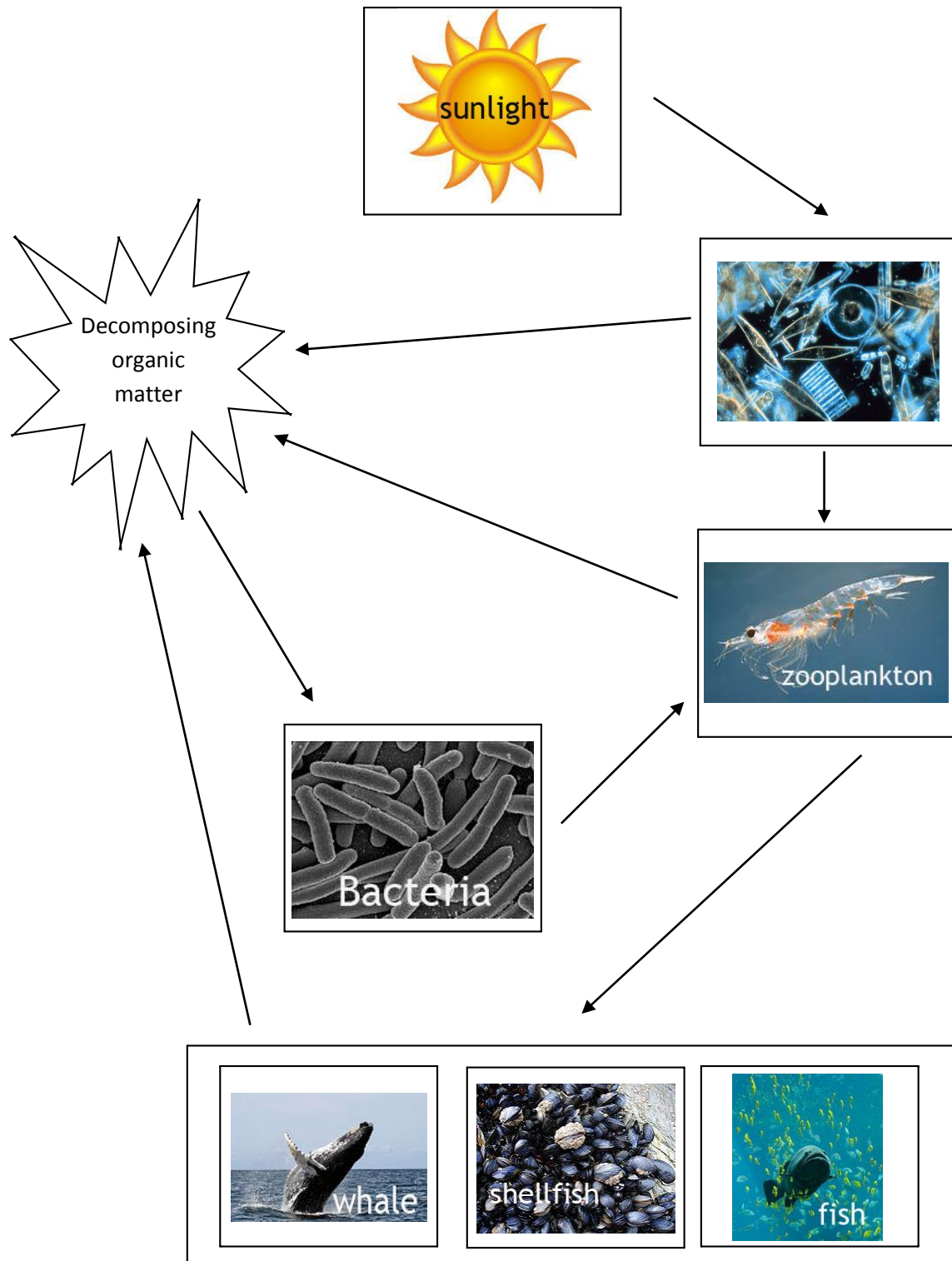


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Food Web Answer Guide



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A Summary of the Scientific Method






Many of Darcy's questions went unanswered. Her experience is common in research. New questions and hypotheses pop up that send scientists in new directions (28).

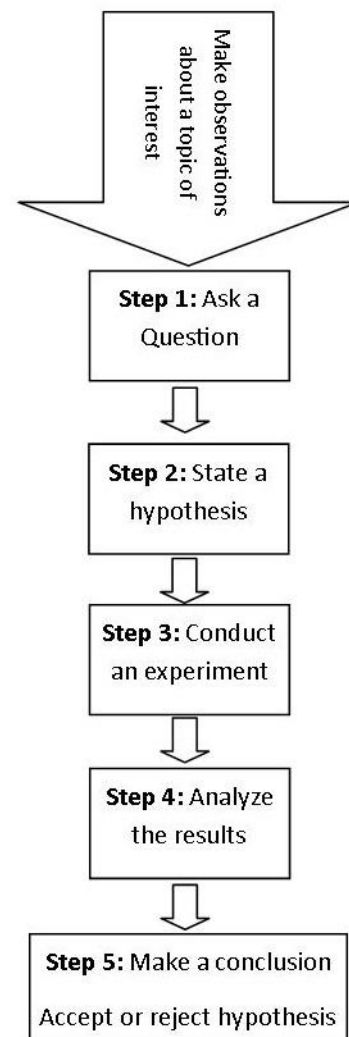
Objective: To review terminology associated with the Scientific Method.

Materials:

-  The Scientific Method graphic featured on the right.
-  The Scientific Method Word Search Puzzle (pg. 14)
-  The Scientific Method Word Search Puzzle answers (pg. 15)

Procedure:

-  State that the Scientific Method is a way to ask and answer scientific questions, similar to those posed by the SEAPLEX team.
-  Review the graphic to the right by discussing the terminology and intent of each step.
 - **Make observations** about something scientifically interesting. Think about it, deeply. Consider it. Do a little background research to inform your hypothesis.
 - **Ask a question** such as how did something come about? What caused it? Why? When did it happen? Which one?
 - Answer the question with a **hypothesis**, an educated guess.
 - Test your hypothesis through **experimentation**, a step-by-step scientific recipe that can be repeated to assure that the first results weren't accidental.
 - Once experimentation is complete, **analyze** your measurements, observations, charts and graphs.
 - Form a **conclusion** based on whether your findings support or reject your hypothesis.
-  Brainstorm types of experiments of interest to the students. How would they like to scientifically investigate the Great Pacific Garbage Patch? How would they structure their scientific research?
-  Review terminology by solving The Scientific Method Word Search Puzzle (pg. 14).
-  Check answers for The Scientific Method Word Search Puzzle (pg. 15).



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The Scientific Method Word Search Puzzle

C A S O A Y Q R W S M D W S H
 M O T E X P E R I M E N T C C
 D W N R S D V S Y Q A G P I R
 O O A C I G E Z U L S R E E A
 Y H H S L H N E G P U A C N E
 O H N T T U S I R U R P C T S
 L O W O E T S O D I E H A I E
 C R P Q I M V I P N S S Z F R
 A Y E O Z E P D O E I L S I B
 H N N S I S Y L A N A F F C Z
 C O N D U C T P E V R E S B O
 N E H W O L L R E J E C T T L
 T A J Y R E T L X H V H I Z C
 Z G N U X D I S G A K Y F T P
 I G N Y N J I K Z M L R I G D

Accept	Guess	Reject
Analysis	How	Research
Conclusion	Hypothesis	Results
Conduct	Measure	Scientific
Consider	Method	SEAPLEX
Experiment	Observe	When
Findings	Prove	Why
Graph	Question	

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The Scientific Method Word Search Puzzle Answer Sheet

C	A	S	O	A	Y	Q	R	W	S	M	D	W	S	H
M	O	T	E	X	P	E	R	I	M	E	N	T	C	C
D	W	N	R	S	D	V	S	Y	Q	A	G	P	I	R
O	O	A	C	I	G	E	Z	U	L	S	R	E	E	A
Y	H	H	S	L	H	N	E	G	P	U	A	C	N	E
O	H	N	T	T	U	S	I	R	U	R	P	C	T	S
L	O	W	O	E	T	S	O	D	I	E	H	A	I	E
C	R	P	Q	I	M	V	I	P	N	S	S	Z	F	R
A	Y	E	O	Z	E	P	D	O	E	I	L	S	I	B
H	N	N	S	I	S	Y	L	A	N	A	F	F	C	Z
C	O	N	D	U	C	T	F	E	V	R	E	S	B	O
N	E	H	W	O	L	L	R	E	J	E	C	T	T	L
T	A	J	Y	R	E	T	L	X	H	V	H	I	Z	C
Z	G	N	U	X	D	I	S	G	A	K	Y	F	T	P
I	G	N	Y	N	J	I	K	Z	M	L	R	I	G	D

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What Do You Think? Hypothesis Formulation







The trash detectives gathered samples of water and marine life. They studied these samples for patterns. They developed hypotheses, or predictions of what they would find (8).

Objective: To construct a hypothesis based on information presented in the text and inductive reasoning.

Materials:

-  Pencil
-  Hypothesis Formulation Worksheet (pg. 17)
-  *Plastic, Ahoy! Investigating the Great Pacific Garbage Patch*

Procedure (students may work in groups or independently):

-  Discuss the definition of the word hypothesis as being a proposed answer to a question, an educated guess, and/or an explanation made on the basis of limited evidence. Point out that a hypothesis is a statement, rather than a question. The statement is the foundation for research to prove the validity of one's hypothesis.
-  In the chapter entitled "Braving the Gyre" (12-15), Miriam spots a huge, rotting squid floating in the water. She states, "It's unlikely its death was related to plastic (14)." Ask the students to question this comment. Based on the information gleaned from reading *Plastic, Ahoy! Investigating the Great Pacific Garbage Patch* and working through the Discussion and Activity Guide, encourage the students to think about the squid as a scientific specimen by asking the question "Is it possible that the rotted squid's death could have been caused by the plastic contaminated gyres, the ocean's Garbage Patch?"
-  Ask students to defend their position on the above question by using the Hypothesis Formulation Worksheet as a guide. Read through *Plastic, Ahoy! Investigating the Great Pacific Garbage Patch* to find three places in the book that support the student's position. Cite the page numbers where the information is located and paraphrase information.
-  Draw correlating conclusions based on the citations in the space provided by interpreting the citation on the basis of one's own experience or observation.
-  A hypothesis is a statement that can scientifically be proven. In this case, students are to suggest ways that the squid's death could/could not be related to the effects of the Great Pacific Garbage Patch by creating a hypothesis and suggesting methods of experimentation they would use to support it.
-  Students present findings to the class either orally, or in a video/audio format.

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Hypothesis Formulation Worksheet

Question?

Is it possible that the rotted squid's death (15) could have been caused by the plastic contaminating the North Pacific Central Gyre?

Cite direct quotes and statements from the text.

1. _____ page number

2. _____ page number

3. _____ page number

Conclusions drawn from experience or observations.

1.

2.

3.

Hypothesis:

How would you go about proving your hypothesis? Describe your proposed methods of experimentation.



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Be a Part of the Solution: A Waste Audit Analysis







Unfortunately, scientists cannot solve the plastic problem through research alone. They need help from kids and adults everywhere (41-2).

Objective: To examine the amount of trash an individual creates in a set period of time.

Materials:

-  Pencil
-  Waste Audit Worksheet (pg. 19)
-  Bar graph template (pg. 20)

Procedure:

-  Define the term ‘audit’ as being an examination of one’s account, a study of the effects of a person’s actions, habits, and behaviors.
-  Ask the student to think through the sequencing of a regular day and predict the amount of waste that they generate.
-  Explain that they will use the Waste Audit Worksheet to keep a record of the amount of trash they and their family generate over the period of one day, one week, and one month. They will be asked to assess the following topics:
 - List the number of people living in their family.
 - Count the number of plastic shopping bags they acquire.
 - Count the number of plastic bottles used (water, soda, juice, and milk).
 - Count the number of soda pop cans used.
 - Count the number of glass bottles used.
 - Count the number of metal food cans used.
 - Count the number of cardboard boxes used (including boxes of food, such as cereal, pasta, rice, etc.).
 - Count the number of bags of trash generated.
 - Count the number of magazines received.
 - List the number of newspapers received.
-  Upon completion of the Waste Audit Worksheet, encourage the student to transfer the information to the bar graph template provided.
-  Tell whether the household recycles. If so, what does it recycle?
-  Encourage the student to assess their data and consider ways that they can be part of the solution to minimize the detrimental effects of plastic trash on the environment.



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Waste Audit Worksheet

List the number of people in your family _____

Questions	In One Day	In One Week	In One Month
How many plastic shopping bags does your family acquire?			
How many plastic bottles of water does your family use (water, soda, juice, milk, etc.)?			
How many cans of soda pop does your family use?			
How many glass bottles does your family use?			
How many metal cans (food cans) does your family use?			
How many cardboard boxes (including boxes of food) does your family use?			
How many bags of trash does your family generate?			
How many magazines does your family acquire?			
How many newspapers does your family receive?			



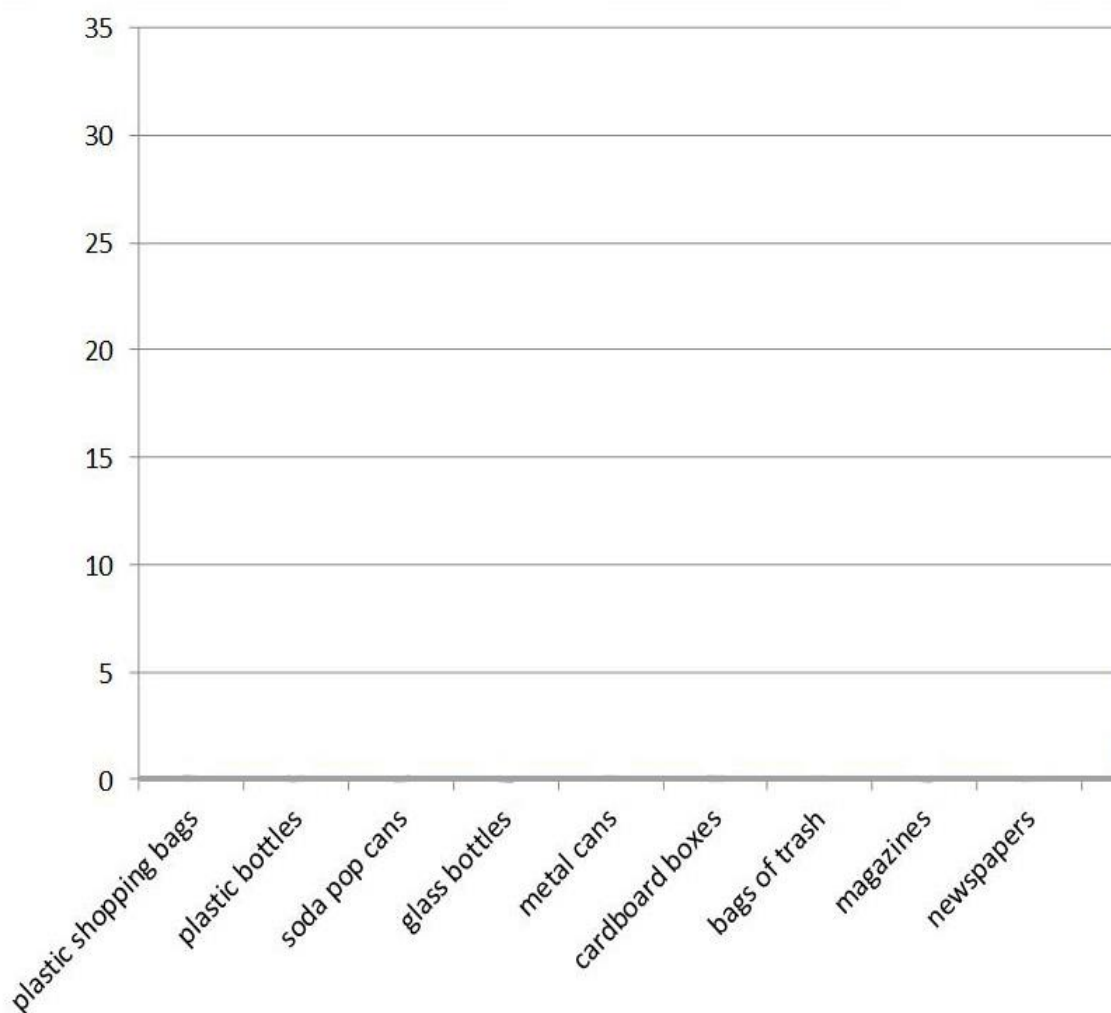
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Waste Audit Bar Graph Template

Number of Members of the Household _____



Legend: Choose a color to represent each bar graph category. Color the corresponding spaces beside the categories accordingly. →

	one day
	one week
	one month

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Academic Standards Alignment

Next Generation Science Standards

		Discussion Questions	Crossword	Dropped Phrase	The Food Web	Summary of the Scientific Method	Hypothesis Formulation	Waste Audit
3-LS2-1	Construct an argument that some animals form groups that help members survive.	✓					✓	✓
3-LS2-1	<u>Science and Engineering Practices:</u> Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).	✓					✓	✓
3-LS2-D	<u>Disciplinary Core Ideas:</u> Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size .	✓			✓		✓	
3-LS2-1	<u>Crosscutting Concepts:</u> Cause and effect relationships are routinely identified and used to explain change.	✓					✓	✓
3-LS4-4	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.	✓					✓	
3-LS2-C	<u>Disciplinary Core Ideas:</u> When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.	✓			✓		✓	
3-LS4-3	Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all	✓			✓		✓	
3-LS4-D	<u>Disciplinary Core Ideas:</u> Populations live in a variety of habitats, and change in those habitats affects the organisms living there.	✓			✓			
4-ESS2-1	<u>Crosscutting Concepts:</u> Cause and effect relationships are routinely identified, tested, and used to explain change.	✓			✓	✓	✓	✓

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		Discussion Questions	Crossword	Dropped Phrase	The Food Web	Summary of the Scientific Method	Hypothesis Formulation	Waste Audit
5-LS1-1	<u>Science and Engineering Practices:</u> Support an argument with evidence, data, or a model.	✓					✓	✓
5-PS3-1, 5-PS3-D,	<u>Disciplinary Core Ideas:</u> The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water).	✓	✓	✓	✓		✓	
5-LS2-A, 5-LS2-1	<u>Disciplinary Core Ideas:</u> The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem.	✓	✓	✓	✓		✓	
5-LS2-B, 5-LS2-1	<u>Disciplinary Core Ideas:</u> Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gases, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment.	✓	✓	✓	✓		✓	
5-LS2-1	<u>Crosscutting Concepts:</u> A system can be described in terms of its components and their interactions.	✓	✓	✓	✓		✓	✓
5-LS1-1	<u>Crosscutting Concepts:</u> Matter is transported into, out of, and within systems.	✓	✓	✓	✓		✓	✓
MS-ESS3.C, (MS-ESS3-3)	<u>Disciplinary Core Ideas:</u> Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth’s environments can have different impacts (negative and positive) for different living things.	✓	✓	✓	✓		✓	✓
MS-ESS3-4	<u>Crosscutting Concepts:</u> Cause and effect relationships may be used to predict phenomena in natural or designed systems.	✓	✓	✓	✓	✓	✓	✓

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Core Curriculum State Standards

English Language Arts Standards » Reading: Informational Text

		Discussion Questions	Crossword	Dropped Phrase	The Food Web	Summary of the Scientific Method	Hypothesis Formulation	Waste Audit
RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	✓	✓	✓	✓	✓	✓	
RI.3.3	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.	✓			✓	✓	✓	✓
RI.3.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).	✓			✓	✓		
RI.3.10	By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently.	✓	✓	✓	✓	✓	✓	✓
RI.4.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	✓	✓	✓	✓		✓	✓
RI.4.2	Determine the main idea of a text and explain how it is supported by key details; summarize the text.	✓					✓	✓
RI.4.3	Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.	✓				✓	✓	✓
RI.4.7	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.	✓	✓	✓	✓	✓		✓
RI.4.10	By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as needed.	✓	✓	✓	✓	✓	✓	✓

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		Discussion Questions	Crossword	Dropped Phrase	The Food Web	Summary of the Scientific Method	Hypothesis Formulation	Waste Audit
RI.5.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.						✓	
RI.5.10	By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4–5 text complexity band independently and proficiently.	✓	✓	✓	✓	✓	✓	✓
RI.6.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	✓					✓	
RI.6.7	Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.	✓					✓	

English Language Arts Standards » Writing

W.3.1	Write opinion pieces on topics or texts, supporting a point of view with reasons.						✓	
W.3.8	Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories					✓	✓	
W.4.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.						✓	
W.4.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.						✓	
W.5.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.						✓	
W.5.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.						✓	
W.6.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.						✓	

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English Language Arts Standards » Speaking & Listening

		Discussion Questions	Crossword	Dropped Phrase	The Food Web	Summary of the Scientific Method	Hypothesis Formulation	Waste Audit
SL.3.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 3 topics and texts</i> , building on others' ideas and expressing their own clearly.	✓					✓	
SL.3.2	Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	✓	✓	✓	✓	✓	✓	✓
SL.3.4	Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.	✓					✓	✓
SL.4.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 4 topics and texts</i> , building on others' ideas and expressing their own clearly.	✓					✓	
SL.4.4	Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.						✓	✓
SL.5.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 5 topics and texts</i> , building on others' ideas and expressing their own clearly.	✓	✓	✓	✓	✓	✓	✓
SL.5.4	Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.						✓	✓
SL.6.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 6 topics, texts, and issues</i> , building on others' ideas and expressing their own clearly.	✓					✓	
SL.6.4	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.						✓	✓

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CCSS Mathematics

		Discussion Questions	Crossword	Dropped Phrase	The Food Web	Summary of the Scientific Method	Hypothesis Formulation	Waste Audit
3.NBTA.1	Use place value understanding to round whole numbers to the nearest 10 or 100.							✓
3. MCB.3	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. <i>For example, draw a bar graph in which each square in the bar graph might represent 5 pets</i>							✓

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