



HUMAN IMPACT UNIT

LESSON PLAN 3rd-5th grade

Topics

Earth Systems
Marine Debris
Microplastics
Run off
Remediation

Objectives

Students will be able to:

- Recognize components of the four earth systems
- Categorize types and sources of water
- Predict how runoff will affect different areas
- Differentiate different types of marine debris
- Explain how marine debris affects an ecosystem
- Evaluate methods of preventing pollution

Instructional Materials

Topic Video
Vocabulary Flash Cards

Assessment Materials

Video Reflection Worksheet
Video Quiz
Earth Systems Matching Worksheet (answer PDF available)
Land and Water Worksheet (answer PDF available)
Marine Debris Worksheet (answer PDF available)
Microplastics Worksheet (answer PDF available)
Remediation Worksheet (answer PDF available)
Clean-up Worksheet
Runoff Worksheet
PSA worksheet (microplastics)

Topic Articles

**Newsela allows you to adjust Lexile level*

<https://newsela.com/read/natgeo-freshwater-resources>

<https://newsela.com/read/plastics-artic-snow/id/55754/>

(more resources on 2nd page)



Related Materials

Links to videos and reading material that provides additional information on topics.

NOAA Resources

The National Oceanic and Atmospheric Administration (NOAA) is a partner of SoundWaters. These are additional resources you may use in addition to the other materials included above.

Marine Debris

<https://marinedebris.noaa.gov/understanding-marine-debris-games-and-activities-kids-all-ages>

<https://blog.marinedebris.noaa.gov/digital-debris-learn-about-marine-debris-online>

<https://oceantoday.noaa.gov/every-full-moon/full-moon-trashtalk.html>

<https://marinedebris.noaa.gov/curricula/marine-debris-monitoring-toolkit-educators>

<https://marinedebris.noaa.gov/discover-issue/trash-talk>

<https://marinedebris.noaa.gov/understanding-marine-debris-games-and-activities-kids-all-ages>

[https://marinedebris.noaa.gov/sites/default/files/publications-files/Be an Ocean Guardian Activity Book.pdf](https://marinedebris.noaa.gov/sites/default/files/publications-files/Be_an_Ocean_Guardian_Activity_Book.pdf)

Microplastics

https://marinedebris.noaa.gov/sites/default/files/MicroplasticsOnePager_0.pdf

Water movement

<https://coast.noaa.gov/estuaries/curriculum/watershed-in-a-box.html>

NGSS Standards

Earth's Systems: 2-ESS2-1; 2-ESS2-2; 2-ESS2-3

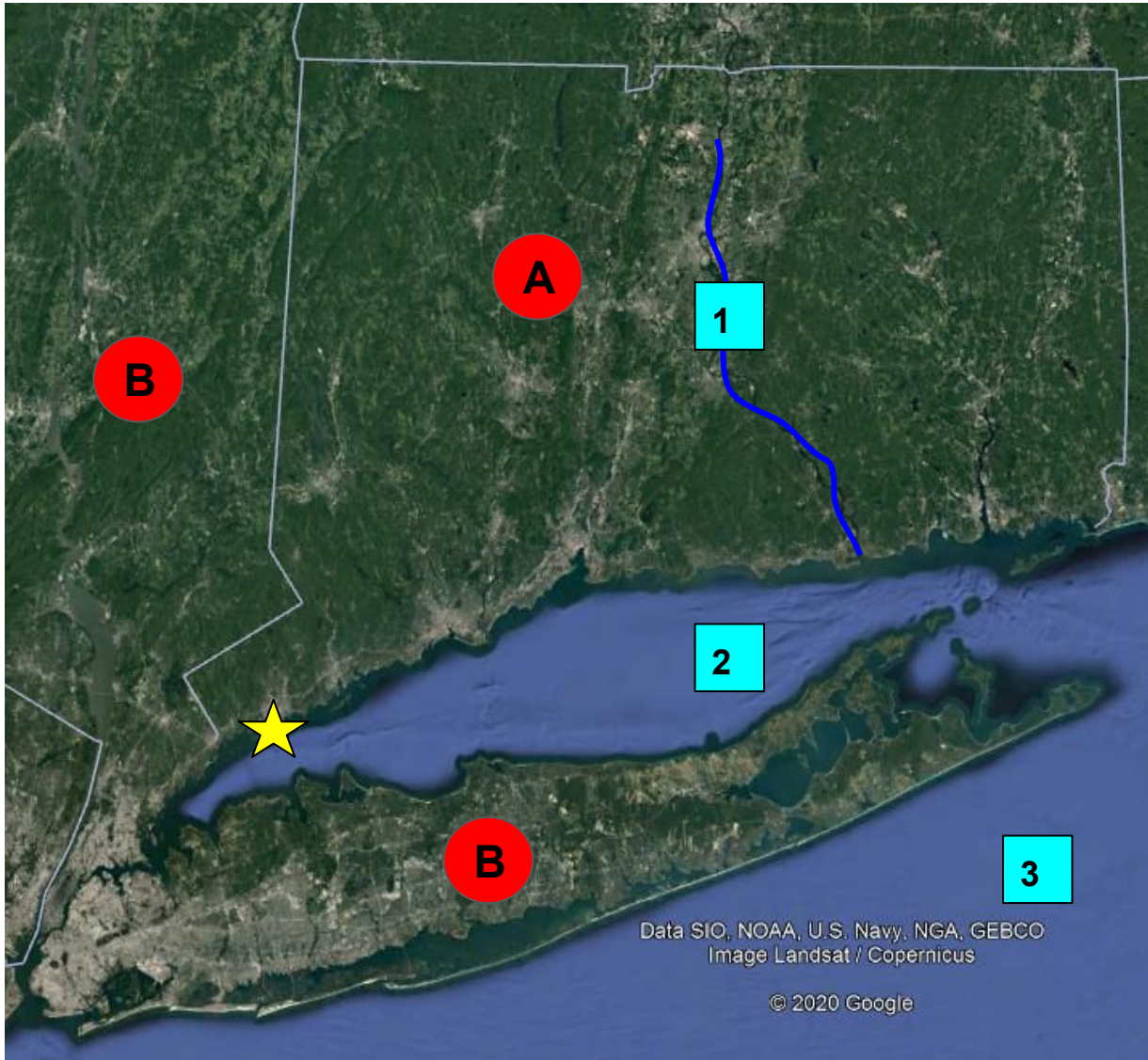
Weather and Climate: 3-ESS3-3

Energy: 4-ESS3-1

Earth's Systems: 4-ESS1-1; 4-ESS2-1; 4-ESS3-2

Earth's Systems: 5-ESS2-1, 5-ESS2-2; 5-ESS3-1

LAND AND WATER



This map is part of the United States.

Which states are indicated by the letters?

- A. Connecticut
- B. New York, including Long Island

Hint: SoundWaters in Stamford, is indicated by the Star.

Label the bodies of water and the type of water in each one

- 1) blue line River
- 2) Long Island Sound
- 3) Atlantic Ocean

What are some other ways water can get into #2 besides #1 and #3?

Other ways for freshwater to get to LIS is rainwater and snowmelt



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EARTH'S SYSTEMS ANSWERS

Earth is made up of four systems. Move the pictures into the correct earth sphere!

GEOSPHERE



Volcano



Mountains

HYDROSPHERE



Ice in the North Pole

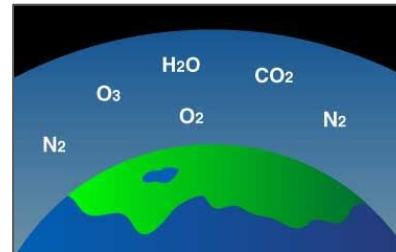


Ocean

ATMOSPHERE



Sun and the planets



Gases above the earth

BIOSPHERE



Trees in a rainforest



Fish in a coral reef

The different spheres interact or work together sometimes. Can you think of an example?

Lots of choices...one example

Clouds are found in the atmosphere, which is the area above the earth. Clouds are made up of water that comes from the hydrosphere. The clouds get water into them through the water cycle



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MARINE DEBRIS WORD SCRAMBLE ANSWERS

Below are common items that might end up as marine debris. Unscramble the words and solve the mystery!

1. HIFGSIN RULE: **FISHING LURE**

Hint: you won't catch anything if you don't have this on your line.

2. OBHUOTHTRS **TOOTHBRUSH**

Hint: you should use this every night before bed.

3. OYBU **BUOY**

Hint: These are used to mark a swimming area on a beach.

4. EGTDRENET TLETBO **DETERGENT BOTTLE**

Hint: You can't get clothes clean without this.

5. TAWER TTOLBE_ **WATER BOTTLE**

Hint: Reusable ones are best.

6. ADRORCDBA **CARDBOARD**

Hint: This might come in the mail with something inside

7. SASGL RJA **GLASS JAR**

Hint: You might have these in your refrigerator

8. LEOBTT PAC **BOTTLE CAP**

Hint: These don't recycle as what they connect to.

9. LAPSCIT GAB_ **PLASTIC BAG**

Hint: If you put too much in these, they will break



Which material takes the shortest time to break down?

Cardboard - 8 weeks

Which material takes the longest time to break down?

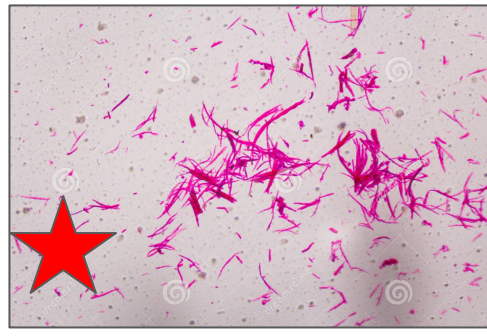
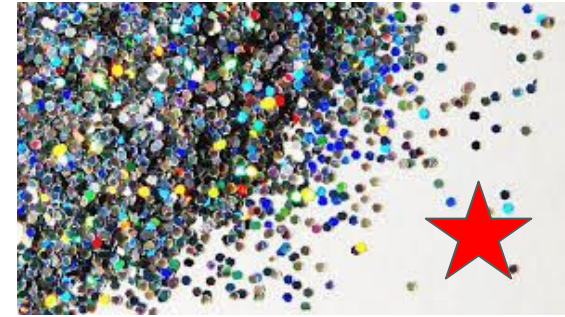
Glass jar - undetermined



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MICROPLASTICS

Put a star in the pictures that represent types of microplastics:



What is one thing you can do to help reduce the amount of microplastics going into Long Island Sound?

Avoid using single use plastics that could end up in the environment. One they are in the water, they just get smaller and smaller and become microplastics.

Make sure to recycle so additional materials won't be in the environment.

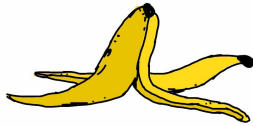
Avoid any cosmetic products that use microbeads.



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Sort the items into the proper bin!

REMEDIATION



Compost

Recycle

Trash

Why is composting and recycling so important to the environment? What would happen if we stopped recycling and composting?

It prevents some of the waste we produce from entering landfills. Landfills will be overflowing. More marine debris will enter the waterways. Less organic, nutritious soil will be given the gardens and farmlands.



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