

Summer Homework for Honors Biology

Being part of the Honors Biology class, students are required to research, develop, and carry out a research project. In order to achieve this goal, students will need to start the research portion of this project and find a topic for this project. Sometimes this is the most difficult part. Students need to select a topic that interests them. Curing cancer is probably out of the question, but preliminary aspects of cancer research is a possibility.

To help the student find a topic that they enjoy, we have developed a worksheet that the student will need to complete and bring to school the first day of class. Students will need to complete 10 of these worksheets. There is a sample one included. In your search of this project topic there are a few things to keep in mind.

1. You cannot use or harm a vertebrate animal. No cats, dogs, mice, people, ...
2. You need to be able to replicate your experiment many times.
3. Do not use a science fair topic website to just look up a topic. This will just frustrate you and me when it doesn't work.
4. A simple idea is usually a great one.
5. Pick a topic that you can relate to. Like diseases, habitats, sports, Indiana ecosystems,...
6. Looking through science magazines and newspapers is a good idea for finding ideas.
7. Research means to search and search again; many times.

If you have questions or need help please contact us through the school web site.

Sincerely,

Jeff Layden, Honors Biology Teacher

and

Linda Wilson, Science Research Coordinator

Great Lakes rife with plastic bits

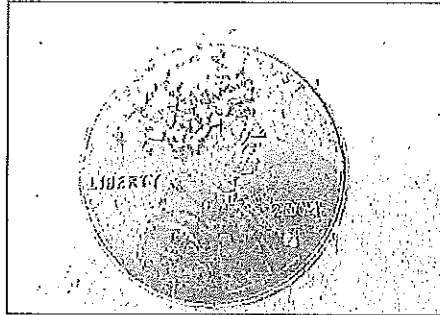
Microbeads in personal care products take much of blame

By John Flesher
Associated Press

TRAVERSE CITY, Mich. — Already ravaged by toxic algae, invasive mussels and industrial pollution, North America's Great Lakes now confront another potential threat that few had even imagined until recently: untold millions of plastic litter bits, some visible only through a microscope.

Scientists who have studied gigantic masses of floating plastic in the world's oceans are now reporting similar discoveries in the lakes that make up nearly one-fifth of the world's fresh water. They retrieved the particles from lakes Superior, Huron and Erie last year. This summer, they're widening the search to lakes Michigan and Ontario, skimming the surface with finely meshed netting dragged behind sailing vessels.

"If you're out boating in the Great Lakes, you're not going to see large islands of plastic," said Sherri Mason, a chemist with State University of New



A sample collected in eastern Lake Erie shows some of the tiny bits of plastic found in comparison to a penny. AP

York at Fredonia and one of the project leaders. "But all these bits of plastic are out there."

Experts say it's unclear how long "microplastic" pollution has been in the lakes or how it is affecting the environment. Studies are underway to determine whether fish are eating the particles.

Scientists have already made a couple of startling finds. The sheer number of plastic specks in some samples hauled from Lake Erie, the shallowest and smallest by volume, was higher

than in comparable samples taken in the oceans.

Also, though it's unknown where the ocean plastic came from, microscopic examination of Great Lakes samples has produced a smoking gun: Many particles are perfectly round pellets. The scientists suspect they are abrasive "microbeads" used in personal care products such as facial and body washes and toothpaste.

They're so minuscule that they flow through screens at waste treatment plants and wind up in the lakes, said Lorena Rios Mendoza, a chemist with the University of Wisconsin-Superior. At the urging of scientists and advocates, some big companies have agreed to phase them out.

During a meeting of the American Chemical Society in April, Rios reported the team had collected up to 1.7 million tiny particles last year in Lake Erie, which acts as something of a "sink" because it receives the outflow from the three lakes to the north: Superior, Michigan and Huron.

Mason said preliminary samples indicate that "Lake Ontario is as contaminated as Lake Erie, if not more so."

Science Fair Idea Sheet

Name _____

To aid in determining a topic for your science fair project, find an article in a magazine, book, computer, or newspaper. Make a copy of the article and attach it to this page. Complete the questions as completely as you can.

1. Name of Article or Title: _____

2. General Area of Science: _____

3. Source: _____

4. Author: _____

5. Where did you find the article: _____

6. Summarize the Article:
(Use at least 3 complete sentences)

7. How would you apply a project to the article?
(Use at least 3 complete sentences)

8. How do you feel about this idea?

- a. I like it a lot
- b. I like it some
- c. okay
- d. have doubts
- e. someone else may have it

9. Are there any hazards with this idea?

10. Other Comments:

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