Trivia

- Biofuels can be a liquid, a gas, or even a solid.
- Coffee grounds can be used to produce biofuel.
- The elevators in The Statue of Liberty in New York Harbor, use soybean hydraulic fluid.
- Making plastic from chicken feathers is being researched.
- The inventor of the diesel engine (Rudolf Diesel) designed it to run on vegetable oil.

Did You Know…?

Oil spills into rivers, bays, and the ocean most often are caused by accidents involving tankers, barges, pipelines, refineries, drilling rigs, and storage facilities. Spills can be caused by:

- people making mistakes or being careless
- older equipment breaking down
- natural disasters such as hurricanes

Joke Time

1. What did the wind turbine say about renewable energy?
2. What did the scientist call the biofuel he made from a vegetable?

Joke Answer:

1. I'm a big fan!
2. AsparaGAS

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Oil Spills No More

Oil spills most often occur when there is an accident on oil rigs, tankers, or pipelines causing large amounts of oil to enter waterways, causing devastation to animals and the water habitats. These spills have a long-lasting impact on the environment. What steps are being taken to invent alternatives to crude oil so that spills don't occur? This is a question that agriculture research scientists are working to answer. Many agricultural products are taking the place of those that once were made with crude oil.

Biofuels are fuels made from organic material found in natural environments like the soil or water. Scientists are using plant matter, used cooking oil, byproducts of meat production, and even pond algae to make biofuels and lubricants. The fuels created can be used to power engines and heat homes. The lubricants manufactured are used to power elevators and other machines that use hydraulics to move. Imagine a farmer using plant based hydraulic fluid in machinery that will plant the very same crop from which the fluid was made!

Soybean plant

Bioplastics are plastics made from organic materials. Scientists are using renewable resources such as corn, soybeans, and potatoes to make bioplastics. The plastics are used in much the same way as traditional plastics made from crude oil. Corn-based plastics are found in food containers, some packing peanuts, and disposable flatware. Other bioplastics are used in products such as furniture, shoes, electronics, toys, and office supplies.

Alternative products such as biofuels and bioplastics lessen our dependence on crude oil, but there is a downside to agriculture-based alternatives. They are often more expensive than traditional products. There aren't a lot of manufacturers making the products which tend to be found only in some areas of the United States and not in others. As research continues, the availability and cost of the products will be improved.

The less oil we use, the fewer opportunities there will be to have an oil spill, but the **best** way to manage an oil spill, is not to have an accident like this in the first place!

How Well Did You Read?

1. What is the author's purpose for writing this article?

   _____

   _____

2. What are some of the organic materials being used to make biofuels and bioplastics?

   _____

   _____

3. What is the main advantage of using biofuels and bioplastics instead of oil-based fuels and plastics?

   _____

   _____

   _____

4. What are two disadvantages of using agricultural-based alternatives to crude oil?

   _____

   _____

   _____

   _____

Accidental oil spills are a serious problem which can cause long term damage to the environment. Scientists are always researching ways to prevent and clean up oil spills.

In this activity, you will observe how oil, water and air interact in a not-so-serious, but fun way!

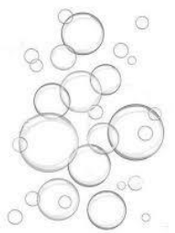
Do-It-Yourself Lava Lamp

Materials:

- vegetable oil
- water
- food coloring
- clear, tall container such as a water bottle or glass
- Alka-Seltzer or similar tablets

Directions:

1. Fill the container about one-fourth full with water.
2. Add 2-3 drops of food coloring. (Avoid using yellow so the water is a
3. different color from the oil.)
4. Fill the container the rest of the way with vegetable oil. Do not shake or stir.
5. Allow the oil to settle on top of the colored water.
6. Break one Alka-Seltzer tablet into 3 or 4 smaller pieces.
7. Drop one tablet piece into the container.



Observe:

When you drop a piece of Alka-Seltzer into the container, it falls to the bottom and mixes with the **water**. The tablet releases **air** (carbon dioxide) bubbles which float to the top of the **oil**, taking some of the colored water along. When the bubbles pop on the top, the colored water falls back to the bottom. You can keep adding pieces of tablet to keep the interaction going.