

# UNDER THE SEA

Hi, there! I'm Sue Ann. I'm a teeny, tiny sea animal. At least, I used to be. That was a long time ago—millions of years ago.

Meet my friend Zeke. He was once a sea plant. After all those years, I bet you're surprised we're still around.

We've seen dinosaurs come and go. And cave dwellers. We've seen ice ages and floods and earthquakes. We've watched the earth go through a lot of changes. Can you see us buried in the rocks under the water?

I guess you don't recognize us. We've gone through a lot of changes, too. I don't look like a sea animal any more. And Zeke isn't green.

When we died, we sank to the bottom of the sea. We got buried under the sand with other plants and animals. They all piled on top of us.

Do you know how it feels when you get stuck under a huge pile of covers? You get hot and squished, right? That's what happened to us. We were trapped under all that stuff.

After a few million years, the pile on top of us turned to rock. It got heavier and heavier and we got hotter and hotter.

Finally, I think we sort of melted. That's what it felt like anyway. We turned into a pool of sticky oil with a gas bubble on top. Can you see us yet? Look hard! We're trapped in a little pocket of rock.

One of these days, they'll send out a search party for us. They'll study maps and bounce sound waves off the rocks. They'll drill a hole down through the rocks and find us.

They'll pump us up to the surface—the oil and the gas. They'll clean us up and turn us into all kinds of things.

I can't wait to see what happens to me. Maybe I'll be natural gas and travel in a pipeline to your house. I'd keep you warm and cook your dinner.

Maybe I'll be a fancy plastic toy to make your baby brother laugh. Or the stuffing in your sleeping bag. Maybe I'll be the medicine that helps you feel better the next time you get sick.

Perhaps I'll be the crayons you use to color a picture. Or the ballpoint pen you use to write your name.

Maybe I'll be gasoline and take you to school. Or jet fuel and fly the President around.

Maybe I'll be propane and cook your hot dogs on the grill. There are so many things I might be. It's so exciting to think about!

I think Zeke will be the big red smile painted on a clown's face. He'd like that.

# THE TALE OF LITTLE BIG FUEL

My name is Little Big Fuel. It's a strange name, I know. Lots of people think I'm strange. I think I'm magical. This is my story.

I've been underground for millions of years. No one knew I was there. I'm invisible – you can't see me. You can't smell me. You can't feel me either; I'm a gas. I hide in rocks with petroleum and natural gas.

Ninety years ago, Dr. Snelling found me. He named me **propane**, but my friends call me Little Big Fuel. Here's the reason why. When everything is normal, I'm a gas. You can't see me, but I'm full of energy. You can burn me to make heat.

I can heat your house. I can cook your food. I can run lanterns and tractors. I can help make things you use everyday. I can run big machines inside buildings because I'm so clean. I can even take you for a ride in a hot air balloon.

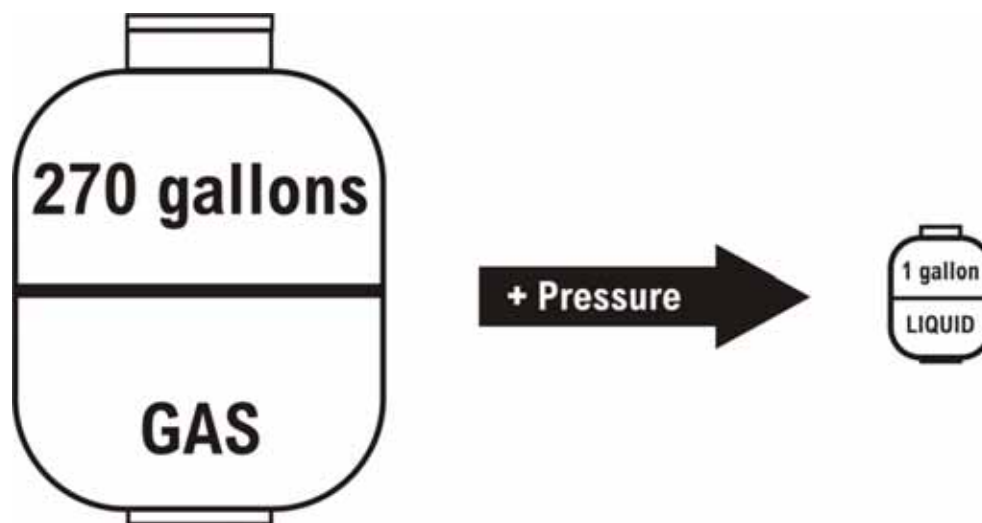
All these things I do are very good. But they aren't the thing that makes me special. This is my secret: you can turn me into a liquid and make me very, very small. If you squeeze me—**compress** me—I turn into a liquid.

See the big picture of me? That's my size as a gas. The little guy is my size as a liquid. I'm 270 times smaller! I still have the same number of molecules and the same amount of energy. I'm just squeezed together.

People squeeze me into small bottles so they can carry me with them. They take me camping to cook their food and light their lanterns. People put me into tanks on their barbecue grills.

Farmers fill big tanks with me as a liquid. I can heat their barns and houses for a long time. Big trucks take me to farms to fill the tanks. When I leave the tanks, I'm not under pressure anymore. I turn into a gas again and get big; I **expand**. Then I am burned to make heat.

That's why I'm called Little Big Fuel. I am amazing, don't you think?



# SUPPLEMENTAL ACTIVITIES

## UNDER THE SEA THE TALE OF LITTLE BIG FUEL

### LET'S DRILL FOR OIL AND GAS

---

#### Materials

One White Cake Mix

One Yellow Cake Mix

Blue Icing and Green Sprinkles

Cupcake Papers (one for each student)

One Chocolate Cake Mix

One Package of M&M Minis

Cupcake Pans

Clear Plastic Straws (one for each student)

#### Procedure

Make cupcakes in three or more layers, hiding one M&M between two of the layers. Bake the cupcakes and allow to cool. Decorate the cupcakes with blue icing (representing water) and green sprinkles (representing land/plants).

Give each student a cupcake and a clear plastic straw. Use the straw to drill for oil (M&M), slowly pushing the straw straight down into the cupcake. When the straw is removed, there will be a core sample of the layers. How many students struck oil? Compare core samples. Slice the cupcakes in half to compare core samples to layers. Eat and enjoy!

*OPTION: Make one multi-layer deep-dish cake with pockets of oil (M&Ms) scattered throughout. Have each student take one or two core samples to look for fuel.*

Discuss how the earth is formed in layers, how fossil fuels were formed, how they are found, etc. (See *Elementary Petroleum, Natural Gas, Propane, and Coal Infosheets.*)

### I'M MADE FROM OIL AND GAS

---

#### Materials

Grab Bag of 20-30 Objects Made From Oil and Gas (plastic objects, vinyl objects, cosmetics, clothes, etc.)

#### Procedure

Pour bag out onto table. Give students a few minutes to look at the objects. Put the objects away and discuss the many different things that are made from oil and gas. Have students look around the classroom and make a class list of all the things they see that are made from oil and gas. At the end of the discussion, have each student write down as many of the objects in the grab bag as he/she can remember.