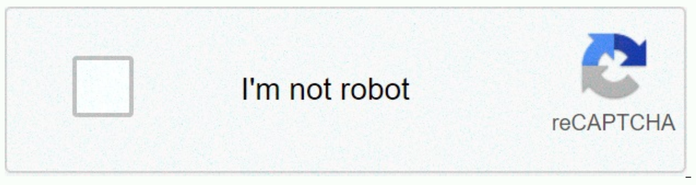

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Drawing polymers worksheet

FreeReport problem This resource is intended for teachers in the UK. Check out the US version. In order to continue to enjoy our website, feel free to confirm your identity as a human being. Thank you very much for your cooperation. FreeReport problem This resource is intended for U.S. teachers. Check out the UK version . In order to continue to enjoy our website, feel free to confirm your identity as a human being. Thank you very much for your cooperation. Polymers and properties of polymers are a powerful theme in GCSE chemistry. You need to know about the use of polymers and their chemical structures. From monomers to polymers in the polymerisation process, this theme usually begins before other aspects such as thermosoftening and thermostatic polymers are captured. Below you will find revised materials for GCSE chemistry and combined sciences. (240 Reviews) €8.99 All major GCSE math topics included Questions and Answers on each topic Higher and Basic Cards available All exam boards, e.g. Check out the product Have you ever wondered why some things fizz, bubble, foam, or change shapes or colors when you mix them together? Here you will learn the science for some very cool reactions – and you can even try them at home (start with this Basic Chemistry Set)! Crazy chemistry projects up, up and down! In this experiment, your balloon may not just fly away, but you can inflate it by creating a reaction in the bottle. What you need: 1 packet (or 2 teaspoons) of active dry yeast 1 tablespoon sugar 1 cup of hot water Clean, empty plastic bottle (type of soda or water) Paper sheet Balloon Notepad Pencil What you do: Stretch the balloon with blown air and blow out the air three times. Put the hot water in the bottle. To make a funnel, twist a piece of paper into the shape of a ending, then place a piece in the mouth of the bottle. Lye sugar through your lilo. Put on the cap and shake the bottle until most of the sugar has dissolved. Take off the cap. Put your funnel in the mouth of the bottle and put the yeast to float on top of the fresh water. Fasten the balloon to the mouth of the bottle. Set the bottle to a place where it won't be disturbed and write in the notebook what time it is. Go back and check the bottle after two minutes and write down the changes you see in the liquid in the bottle or balloon. Check again in five minutes and write down any changes. If there doesn't seem to be a lot going on, leave it for about 15 minutes and then take another look at it. Check the bottle and balloon every 15 minutes. The reaction may continue for up to a few hours. Watch carefully and write down any changes you notice! What happened: The warm water caused the yeast to 'wake up' and immediately began chemical reaction with sugar. Two substances, yeast and sugar, responded to each other and together they made a new substance – a gas called carbon dioxide. Carbon dioxide is the same gas that makes soda pop fizzy, and one of the many gases in the air we breathe and exhale. The carbon dioxide from the reaction filled the entire room in the bottle and lifted to fill the balloon. At first, the yeast should look puffy or bubble on the surface of the water as it began to react with the heat of the water. Then you've probably noticed that the balloon is standing straight up, instead of crossing it over the mouth of the bottle! It was the first sign that the yeast was reacting with sugar and that the carbon dioxide gas was made. Soon after, the balloon should start inflating. Because the balloon was made of a stretcher tire (and helped you stretch it), it continued to expand to hold carbon dioxide, just as it would if it had been blown up with its mouth. When you exhale (or exhale), your lungs exsue carbon dioxide, along with a few other gases, which is how you are able to blow up a balloon. Now that you know how it works, you may want to try an experiment with other types of sugar blends. What do you think would happen if we used a favorite juice or juice instead of fresh water? So if yeast and sugar react like that in a bottle, what happens when you bake with them? Well, the same thing happens, it just looks a little different. Bread and many other baked goods are made from yeast. The yeast reacts with sugar in the yeast, releasing carbon dioxide, which creates tiny air bubbles that distort and leave air pockets as the tivo is baked into the bread. You can take a closer look at the air pockets left in the slice of bread. Slime Time What You Need: White Glue Water Food Coloring Borax Powder Glass or ceramic bowl Small mixed bowl or cup Measuring cup Measuring spoon Mixing spoons or ice cream sticks Square chocolate What you're doing: Measure 1 cup of water in a small bowl or cup and add Borax powder. Mix well and set aside. You just made borax a way. Rinse the mixed spoon to extract all borax solution. Measure 1/2 cup of water and 1/2 cup of white glue in a larger bowl. Mix well until it's mixed together. If you want colored mucus, add 2-3 drops of food color to the glue mixture now. Pour the Borax solution in the first step into the glue mixture and start mixing. You should see a great clump shape in the color glue right away, just keep stirring, though until the clump has picked up as much liquid around it as possible. Now comes the fun part – put the spoon aside and pick up the mucus with your hands. Hold it over a bowl and soften it as money, work it between your fingers. As you are With it, mucus will dry on your hands and will become less slimy and more like a tendon. Keep the mucus in a plastic zip-lock bag in the fridge when you are not playing with it. What happened: The mucus you just made is called polymer (say: PAUL-UH-MER). The word polymer means many parts. White glue is one type of polymer. When you were mixing water with white glue, the glue formed long chains of thousands of small molecules that you couldn't see until you added borax solution. Borax had a glue reaction – it connected all those chains together, making the whole mixture thicker and turned it into a blob of mucus, a different type of polymer! There are many different types of polymers, including plastic, rubber, jelly, glue, camera film, materials such as nylon, and even natural fibers made of wood and cotton. This polymer has the properties of solids and liquids at the same time. Compare the polymer to the hard object – a piece of chocolate. Put the chocolate in half. Try to quickly break the slime belt in half. Did you get a clean break, similar to the way the chocolate broke? To see how it is even as liquid, try to slowly stretch the blob out between your hands. You can't do that with a solid piece of chocolate! The polymer shows its liquid properties when you slowly stretch it. Now put the mucus back in the bowl where you came in and watch what happens. It would have to flatten to fill the bottom of the container, similar to the liquid as the pancake batter would do. Mucus science lesson chemical reactions There are all sorts of reactions going on around us every day. A chemical reaction is something that happens when two or more substances come into contact with each other. One substance merges with another and even creates an ew substance that was not there when the reaction began. Different types of reactions may occur depending on the substances being assembled. Sometimes there will be few original ingredients left after the reaction, but sometimes more than one new substance will be in the reaction. Up, up and away! the yeast reacted with warm sugar-water and produced carbon dioxide that you could see filling the balloon. There are also many other types of chemical reactions that occur around us and even within us every day! Can you sit down for a case? Here are some to start: Digestion – whenever you eat, your body uses many different and very complex chemical reactions to break down food and convert it into energy and other

things your body needs! (You can find out more about digestion on this page.) Combustion – fire is another type of chemical reaction called combustion. It needs oxygen, fuel and heat to exist, and the reaction creates light, heat and smoke. Oxidation – rust is a chemical reaction that you can see that is happening around you. Sometimes there will be a reddish-colored layer on iron or steel (a type of metal) when the metal reacts with oxygen in the air. Most of the iron and steel is treated to prevent rust, though, so you usually only find rust on old metal pieces that have been in contact with a lot of water and have gradually rusted for years. When an apple turns brown after a bite, it's also oxidation. The enzyme in the meat part of the apple reacts with oxygen from the air and turns the apple brown. Polymers In the slime experiment above, you learn what a polymer is – a long chain of hundreds or thousands of tiny molecules. The mucus you made is an interesting type of polymer that can behave like a solid or liquid, depending on how it is handled. There are many and many polymers in our world. Some are natural, some are human, or synthetic. Here are some examples of polymers: Plastics are one of the most common polymers. There are many different types of plastic that have very different properties – some plastics are flexible and can bend (like a plastic bag or toothpaste tube) and some are very solid and would split or crack if they tried to bend them (like a plastic plate or CD). Fabrics such as rayon, nylon, and polyester are used to make clothes such as shirts, turtlenecks, and socks. Natural polymers – one of the most important natural polymers is the DNA, the protein in your cells that makes you who you are! Some other things that come from natural polymers are cotton, silk, rubber, paper and leather. The rubber comes from a natural source – plants! It needs to be processed before it can be used. For more information and project ideas for teaching children about polymers, see our Polymer and Slime Experiments page. Scientific words Chemical reaction– when two or more substances come into contact and form a new substance. Carbon dioxide, a gas that is in the air on the ground, but in very small quantities. Plants need it for life; used for hidden sunlight into food. People exhale carbon dioxide when we exhale. Chemistry is short of CO2, which means it has one carbon atom and two oxygen atoms. Oxygen – a gas that is very abundant on earth and which people and most animals breathe to stay alive. It has no color, no smell or taste. Polymer – the word poly means a lot, so the polymer is a long chain of molecules that gives the substance the ability to stretch and be very flexible. Printable worksheet use this worksheet as a fun activity to strengthen basic chemical concepts of chemical reactions and polymers. Children can paint the page and then determine whether each image is a polymer, a reaction or not. Nor.