

LAB REPORT GUMMY BEAR EXPERIMENT OSMOSIS

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How does the gummy bear lab relate to osmosis? How it works. Gummy bears are made of gelatin, so they do not dissolve in liquid, like many other sugary candies. In this experiment, the gelatin in the gummy bear acts like a cell membrane in living cells. The gummy bears get bigger or smaller after soaking in the liquids because of a process called osmosis.

What is the conclusion of the gummy bear experiment? In terms of volume and mass, they also changed depending on the concentration of salt water that the gummy was placed in. All of the gummies shrunk, but at different amounts. Through observation, it can be concluded that a higher concentration of salt water will affect the gummy more significantly.

What were the results of the growing gummy bear experiment? Final results, after being removed from the water.. As you can see, the gummy bear grew in all areas: length, width and depth. The gelatin kept the gummy bear from dissolving completely but the consistency did change from that of sponginess to a jellylike substance.

What is the hypothesis for the gummy bear experiment? In this experiment, gummy bears were placed in salt water, sugar water, and tap water to find the measure of osmosis between the solution and gummy bear. Hypothesis: If the gummy bear is added to the solution, then it will lose its coloring and expand.

What is the lesson of osmosis? Lesson Summary Osmosis is the flow of water through a semi-permeable membrane from a high concentration area to a low concentration area, or the net movement of water along their concentration gradient.

The concentration gradient is the difference in concentration between two locations of a material.

What happens in the gummy bear experiment reaction? This process actually takes place in two steps: 1) the formation of potassium perchlorate, followed by 2) the decomposition of the potassium perchlorate. The sugar present in the gummy bear undergoes rapid oxidation forming carbon dioxide and water, assuming complete combustion, a very exothermic process.

What are the control variables in the gummy bear experiment?

What happens when a gummy bear sits in water? This process is called osmosis. When the gummy bear sits in the water for a long time, some of the water flows into the gummy bear because of osmosis. This makes the gummy bear swell and get bigger.

Was the gummy bear experiment a physical or chemical change? In the video, when the gummy candy was placed into a test tube with the oxidizer, the gummy candy burned up and created new chemicals. Since new chemicals were formed, it is an example of a chemical change.

What is the independent variable in gummy bear osmosis? In this gummy bear experiment, the independent variable is the type of solution the bears are placed in - one in distilled water and the other in 40% salt solution. The dependent variable is the size difference of the gummy bears after being soaked in the respective solutions.

What was your hypothesis as to what would happen to the gummy bear?
Expert-Verified Answer If the gummy bear was left in the water for a longer time, it would continue to absorb water and increase in size until it reached its maximum capacity. The change in volume was greater than the change in mass. This is because the change in volume was 68.5% while the change in mass was 42.85%.

What is the procedure for the gummy bear experiment?

What liquid makes gummy bears expand the most? The gummy bear that absorbed the most was the one put in plain water. The one that grew the least was the one put in saltwater. Interestingly, the gummy bears remained completely intact,

just larger, with the exception of the one put in vinegar.

How to do an osmosis experiment? Put dried raisins and apricots in pure water and leave them for some time. Then place them into a concentrated Solution of sugar or salt. Each one of them gains water and swells when placed in pure water due to endosmosis.

What is the science behind gummy bears after workout? A handful of gummy bears, saccharine though they may be, are just what the doctor ordered in terms of a rapid glycogen fix. Glycogen replenishment causes a spike in insulin within the body, which opens up certain receptors on muscle cells.

What is the basic summary of osmosis? In biology, osmosis is the movement of water molecules from a solution with a high concentration of water molecules to a solution with a lower concentration of water molecules, through a cell's partially permeable membrane.

What is the point of the osmosis experiment? Purpose: To determine the biological changes that occurs over a period of time in different solutions and to relate these changes to osmosis and diffusion.

What is osmosis easy way to explain?

How does osmosis work in gummy bears? The Gummy Bear has a selectively permeable coating which will allow water molecules to diffuse across, but inhibiting other larger molecules. In this osmosis experiment the water molecules move into the bear, thus enlarging it.

What is the hypothesis of the gummy bear growth experiment? The ingredients of gummy bears are sugar, water, and gelatin, with little water content. Due to the process of osmosis, i.e., the movement of water molecules through a selectively permeable membrane from an area of high concentration to that of a lower concentration, the bear starts to grow.

What will happen when you put a gummy bear in water?

Is osmosis or diffusion making gummies swell by soaking them in water?
When the gummy bear sits in the water for a long time, some of the water flows into

the gummy bear because of osmosis. This makes the gummy bear swell and get bigger. The gummy bear in the salt water doesn't get as big because the concentration is higher which means less water flows into the gummy bear through osmosis.

What is the diffusion of gummy bears? The gelatine structure of the gummy bear allows water molecules to squeeze in between its molecules and join them. This is by a process called diffusion. The additional water molecules cause the jelly sweet to grow and swell.

Why is the gummy bear experiment important? Gummy Bear Osmosis experiment is a fun demonstration to help explain the tricky subject of osmosis, as well as being a great way to teach experimental design. It's also an experiment you can eat when you're finished!

What is the water activity in gummy? Among the jellies, gummi candies are particularly popular for the chewy, elastic texture. Gummi candies typically contain gelatin as a primary gelling agent and have a moisture value from about 9% by weight to about 18% by weight, a pH of not higher than 4.0, and a water activity value from about 0.5 to about 0.7.

What happened to the gummy bear after soaking it in salt water overnight? If you soaked the candy in salt water overnight, it would shrink. This is because of osmosis. The gummy bear's membrane is selectively permeable, meaning that only certain substances can get in and out of the membrane.

What happens when a gummy bear is placed in a hypotonic solution?

What is the simple experiment of osmosis? Fill two glasses with water. In one of the glasses add 2-3 tablespoons of salt, and stir it in. Slice up a potato into French fry-like pieces. Make your observations on these pieces: pay attention to color, how flexible it is, smell, etc.

How does osmosis work in gummy bears? When you put a gummy bear in water, it is a solute, and the water molecules are a solvent. Since the gummy bear does not contain water (remember, the water was removed when the gummy bear was made), water now moves into the bear by the process of osmosis.

What are the variables in the gummy bear osmosis experiment? Here, we conducted a scientific experiment with 3 experimental variables (water, salted water, vinegar) and a control variable (gummy bear that we didn't put into any solution). This enabled us to control every aspect that could influence the outcome of the experiment.

Is the gummy bear hypotonic or hypertonic to the water? Final answer: The hypotonic solution is the ice water due to its lower solute concentration, and the hypertonic solution is the gummy bear because it contains a higher concentration of sugar.

What is the hypothesis of the gummy bear growth experiment? The ingredients of gummy bears are sugar, water, and gelatin, with little water content. Due to the process of osmosis, i.e., the movement of water molecules through a selectively permeable membrane from an area of high concentration to that of a lower concentration, the bear starts to grow.

What happens in this reaction gummy bear experiment? In this experiment, a demonstration of a spontaneous exothermic reaction will take place between a gummy bear and molten potassium chlorate. Once the potassium chlorate has been melted in a test tube, a gummy bear will be dropped to his doom and flames will burst out of the tube as a result.

Why do gummy bears grow more in distilled water than tap water? The distilled water is 100% water, so it clearly has more water than the gummy bear, which contains sugar. Water moved into the gummy bear, which caused it to increase in volume in this hypotonic solution.

How do gummy bears absorb water? Inside the gummy bear (trapped inside those pockets in the gelatin), you have water + sugar. There's more stuff inside the bear, so the water moves into the bear to try and make the proportion of sugar molecules to water the same in both places. (You can think about this like a sugar cube dissolving in a cup of water.

What happened to the gummy bear in the water? A gummy bear expands in fresh water due to osmosis, where water moves from a lower concentration to a higher

concentration. When a gummy bear is placed in a salt solution, it shrinks as the water molecules inside the gummy bear, move towards the higher concentrated salt solution.

Does the color of a gummy bear effect water absorption? Conclusion: It is now concluded that the color of the gummy bear's dye does not severely affect the absorption of water among bears. Therefore, the hypothesis of the experiment was refuted. Citations: ?“Allura Red AC.” Wikipedia, Wikimedia Foundation, 17 Oct. 2019, en.wikipedia.org/wiki/Allura_Red_AC.

What is the flow of fluid in an open channel? 1.4 Open channel flows An open channel is a waterway, canal or conduit in which a liquid flows with a free surface. An open channel flow describes the fluid motion in open channel (Fig. 1.3). In most applications, the liquid is water and the air above the flow is usually at rest and at standard atmospheric pressure.

What is the difference between pipe flow and open channel flow? Pipe flow Vs Open channel Flow Open Channel Flow is a type of fluid flow in a conduit with a free surface open to the atmosphere. The pipe flow is a type of flow within a closed conduit. The maximum velocity occurs at the center of the pipe. HGL(Hydraulic Gradient Line) coincides with the water surface line.

How does an open channel flow meter work? An ultrasonic open channel flow meter uses ultrasonic reflection to determine the distance from the face of the ultrasonic transducer to the surface of the water. The elapsed time between when the signal is transmitted and when it is received determines the water level.

What is a flow meter for open channels? The ISCO 2150 & Signature are probably the most widely used area velocity flow meters worldwide. The ISCO LaserFlow is a non-contact laser-based open channel flow meter (MCERTS-certified) which is able to use a laser to profile at multiple depths in the flow with very high accuracy.

What are the two types of open channel flow? There are essentially two types of open-channel flow: • uniform flow (the discharge depth (water depth) remains equal; acceleration = deceleration) • non-uniform flow (the discharge depth is changed by acceleration or deceleration) The discharge can be either subcritical, critical or

supercritical.

How to calculate open channel flow? Manning equation open channel flow where: V – Velocity or water mass flow rate; n – Manning's roughness coefficient; R – The channel's hydraulic radius, calculated by dividing the water flow's cross-sectional area A by its wetted perimeter P (i.e., $R = \frac{A}{P}$); and.

What is the most efficient shape for open channel flow? Semi-circular open channel will discharge more water than any other shape (assuming that the area, slope and surface roughness are the same). Semi-circular shape/circular shape are practical for concrete and steel pipes.

Is open channel flow hard? However, measuring flow rate in open channels can be challenging due to the complex nature of fluid flow. Also, the influence of external factors such as temperature and air velocity can make the task all the more difficult.

What is critical depth in open channel flow? In open channel hydraulics, critical depth is the depth of flow (for a given discharge) where the specific energy is at a minimum. The total energy head (specific energy) for a cross section is given by: g .

Can you have open channel flow in a pipe? One way of calculating open channel flow in pipes and channels without using a flume or weir is the Manning Formula. Although not as accurate as a hydraulic structure, the formula can provide a sufficient level of accuracy in some applications.

What are the principles of open channel flow? Flow in open channels is always the free surface which is related to the streamline and the time is always constant to the pressure on the driving force of the motion of the fluid and the motion of the water is in a practical situation.

What is the formula for discharge of open channel flow? Current meters measure velocity at a point in the flow that represents a portion (i.e., area) of the flow cross section. Discharge is then computed from continuity ($Q = V \times A$) and related to a stage discharge relationship (i.e., rating curve).

How accurate is open channel flow measurement? With proper installation, flumes can be accurate to $\pm 2-5\%$ (for the flume itself); however, overall system accuracy is $\pm 10\%$ when all factors are considered.

How do you measure the flow of water in open channels? Standard metergates, weirs and flumes are common devices installed in open channels and irrigation ditches to measure water flow. Each has advantages and disadvantages and understanding these can help you decide which one to choose.

Where is open channel flow used? Man-made open channels can be water-supply channels for irrigation, power supply and drinking waters, conveyor channel in water treatment plants, storm waterways, some public fountains, culverts below roads and railways lines. Open channel flows are observed in small-scale as well as large-scale situations.

What is the flow condition in an open channel? If time is used as the criterion, open-channel flow is classified into steady and unsteady flows. If, at a given flow section, the flow characteristics remain constant with respects to time, the flow is said to be steady. If flow characteristics change with time, the flow is said to be unsteady.

What is the state of flow in an open channel? Flow in open channels is always the free surface which is related to the streamline and the time is always constant to the pressure on the driving force of the motion of the fluid and the motion of the water is in a practical situation.

What is the flow of water in a channel? Streamflow, or channel runoff, is the flow of water in streams and other channels, and is a major element of the water cycle. It is one runoff component, the movement of water from the land to waterbodies, the other component being surface runoff.

What is the flow regime of open channel flow? Since the publication of the paper by Robertson and Rouse in 1941 (10), open channel flow has been classified into the following four regimes: laminar-subcritical, turbulent-subcritical, laminar-supercritical, and turbulent-supercritical.

The Courage of Their Convictions: Sixteen Americans Who Fought Their Way to the Supreme Court

Who are these sixteen Americans?

These are individuals who defied societal norms and legal challenges to rise to the highest court in the United States. They include civil rights advocates, women's rights pioneers, and legal visionaries who shaped the country's legal and social landscape.

What motivated them to fight their way to the Supreme Court?

Each of these individuals carried a deep belief in the justice of their cause. They were driven by a profound sense of purpose, a determination to right wrongs, and a willingness to endure hardships in pursuit of their goals.

What were some of the obstacles they faced?

These individuals faced an array of challenges, including discrimination, political opposition, personal threats, and legal roadblocks. They navigated a complex legal system, overcame societal prejudices, and often faced personal sacrifices in their pursuit of justice.

How did their actions impact the Supreme Court and American society?

The decisions rendered by these justices on cases such as *Brown v. Board of Education*, *Obergefell v. Hodges*, and *Citizens United v. FEC* have had a profound impact on American society. They have shaped laws, policies, and attitudes, and have played a pivotal role in advancing civil rights, social equality, and legal precedents.

What lessons can be learned from their stories?

The stories of these sixteen Americans are a testament to the power of conviction and the resilience of the human spirit. They inspire us to stand up for what we believe in, even when the odds may seem insurmountable. Their legacy provides a roadmap for those who seek to make a meaningful impact on the world through the pursuit of justice and the law.

Toyota Corolla 2E Engine Manual Download

Q: Where can I download a Toyota Corolla 2E engine manual?

A: You can download the Toyota Corolla 2E engine manual at multiple online sources, such as Toyota's website or third-party automotive forums. Ensure that the manual you download is compatible with the specific year and model of your Corolla.

Q: What information is included in the engine manual?

A: The Toyota Corolla 2E engine manual provides detailed instructions and specifications for maintaining and repairing the engine. It typically includes sections on engine disassembly, assembly, troubleshooting, and routine maintenance procedures.

Q: Why do I need an engine manual?

A: An engine manual is essential for performing complex repairs on your Toyota Corolla. It provides step-by-step guidance and technical specifications to ensure accurate and efficient repair work. The manual also serves as a troubleshooting tool, helping you diagnose and resolve engine issues.

Q: Is it difficult to use the engine manual?

A: While engine manuals can be technical, they are generally written in a clear and concise manner. They typically include diagrams, tables, and troubleshooting tips to assist in the repair process. If you encounter any difficulties, you can consult with a certified automotive mechanic or refer to online forums for additional support.

Q: Can I find the engine manual online for free?

A: In some cases, it may be possible to find a free download of the Toyota Corolla 2E engine manual online. However, it is important to note that the accuracy and reliability of free online manuals can vary. For the most up-to-date and reliable information, it is recommended to download the manual from Toyota's official website or a reputable automotive parts retailer.

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