

ENTIRE WATER UNIT

Preview is a compressed file



3 Parts 27 Lessons

WATER ON EARTH



The Earth's surface is covered with water. What percentage of water?

- A) 3%
- B) 29%
- C) 40%
- D) 71%

20

Aquifer: An underground layer of water-bearing permeable rock.

8

Aquifer

What are the three main types of aquifers?

1. Unconfined aquifer (water table)
2. Confined aquifer (artesian)
3. Perched aquifer

Called the Cryosphere

8 Lessons

Clouds

71% of Earth is covered in water.

Hydrosphere

Atmosphere

Interactive Slideshows



What does the term "water cycle" mean?

1. The process by which water moves from the ground to the air and back to the ground.
2. The process by which water moves from the air to the ground and back to the air.
3. The process by which water moves from the ground to the air and back to the ground.
4. The process by which water moves from the air to the ground and back to the air.

Activity! Love Canal Article

Photos and the article about the Love Canal disaster.

Groundwater Availability Sheet

Activity! Making the article about the Love Canal disaster into a comic book.

Activity! Danger under the sand worksheet

Photos and the worksheet for a project.

Due at the end of class.

Activity! Making the article about the Love Canal disaster into a comic book.

Photos and the article about the Love Canal disaster.

Activity! Making the article about the Love Canal disaster into a comic book.

Photos and the article about the Love Canal disaster.

Readings, Video Links, Activities, Assessments, all Built-in



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Follow Along Bundle



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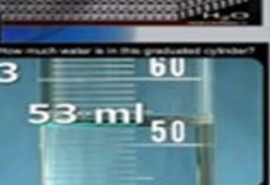
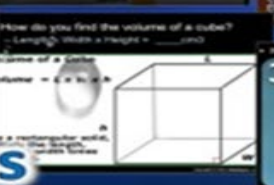
Photos and the article about the Love Canal disaster.

8 Lessons

Volume and Density Unit

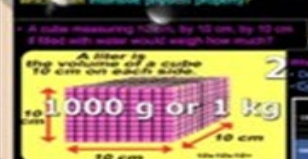
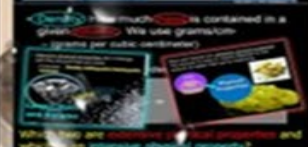


Answer: 500 ml



6 Lessons

Interactive Slideshows



6 Lessons

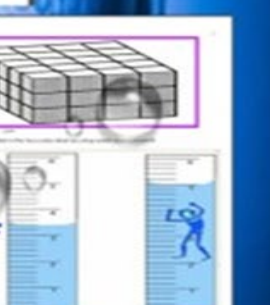
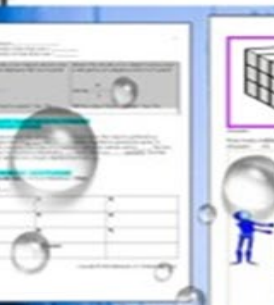
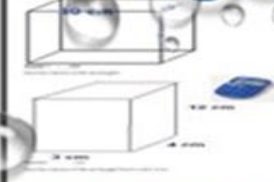


6 Lessons



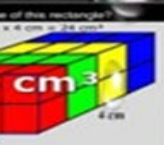
6 Lessons

Follow Along Bundle



6 Pages

Activities, Assessments, Keys, and more all built-in!



6 Lessons

The collage features 15 educational slides about water, arranged around a central image of a water splash. The slides cover various topics related to water's properties and the water cycle.

- Slide 1 (Top Left):** "Water's Unique Properties" - Discusses how water's unique properties make it a unique substance.
- Slide 2 (Top Right):** "Polar molecules" - Explains that one end of the water molecule tends to have a positive charge while the other has a negative charge, leading to the effect of hydrogen bonding between molecules.
- Slide 3 (Middle Left):** "Which is water and which is rubbing alcohol?" - Compares the molecular structures of water (H₂O) and rubbing alcohol (C₂H₅OH).
- Slide 4 (Middle Right):** "Video Link! The World of the Water Spider" - Provides a link to a video about the water spider: <http://www.youtube.com/watch?v=8v8v8v8v8v8>.
- Slide 5 (Bottom Left):** "Water Cycle" - Illustrates the water cycle with labels for evaporation, condensation, precipitation, and collection.
- Slide 6 (Bottom Center):** "Water" - A simple diagram showing the chemical structure of water (H₂O).
- Slide 7 (Bottom Right):** "Activity! Building our own Lava Lamp" - Shows a hands-on activity for building a lava lamp using oil, water, and food coloring.

15 Lessons

Chronologically follows entire unit with built-in assessments

Full of hands-on activities

[illegible]

Answer Keys, Games, Editable, Everything you need is included

SlideSpark Science

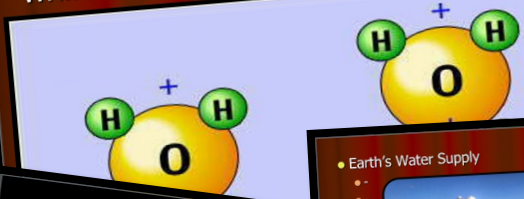


MIDDLE-LEVEL EDUCATIONAL RESOURCES

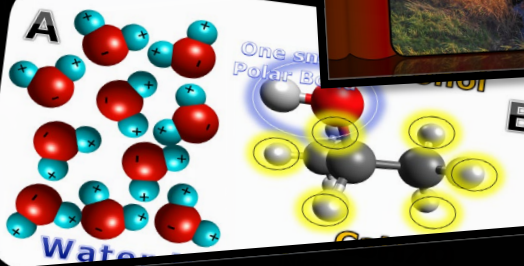
Interactive slideshows provide the roadmap for an amazing learning experience for students in grades 5-9. A Detailed set of work bundles chronologically follow the digital learning, providing a clear and intuitive roadmap to understanding. As the teacher or student advances through a slideshow, exciting hands-on activities, fantastic visuals, fill-in notes, review opportunities, video links, assessments, and much more are strategically placed throughout. Interactive learning unfolds step by step and supported by the work bundle to reach all types of learners. Everything you need to run to an amazing learning experience is provided in this one-of-a-kind science curriculum.

Each unit in the curriculum is designed to help teachers deliver the best possible learning experience for their students. Our interactive science slideshows are filled with questions and answers, important fill-in notes, hands-on activities, projects, games, built-in quizzes, and end of the unit assessment pieces. Students follow along with a work bundle that documents the entire learning experience for a fantastic review and assessment piece.

- Polar Molecule: One end of the water molecule tends to have positive charge while the other has a negative charge.



- Which is water and which is oil?



- Earth's Water Supply



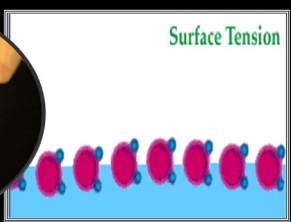
- Extension Lava Lamp.
 - Break one Alka-Seltzer into a few pieces and add them. What happens?



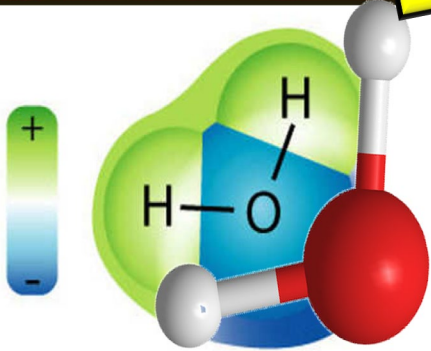
- Activity!
 - Try to float a paperclip on water.
 - Use one paperclip (bent to create a flat surface) and lower into the water.



Surface Tension



- Water is H_2O . Two hydrogen atoms, one oxygen.

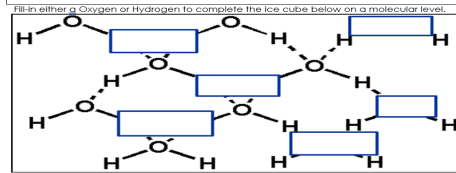
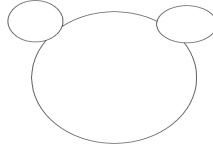


Part 3 Properties of Water

Name: _____

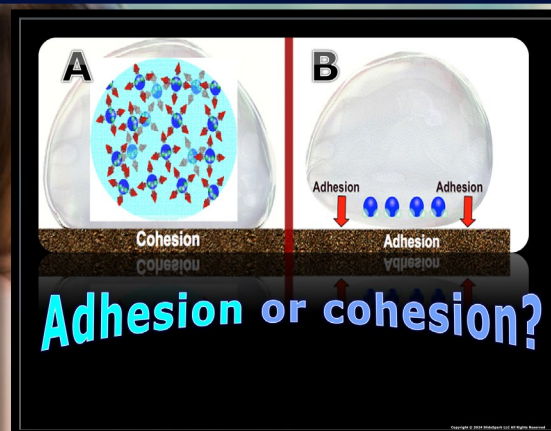
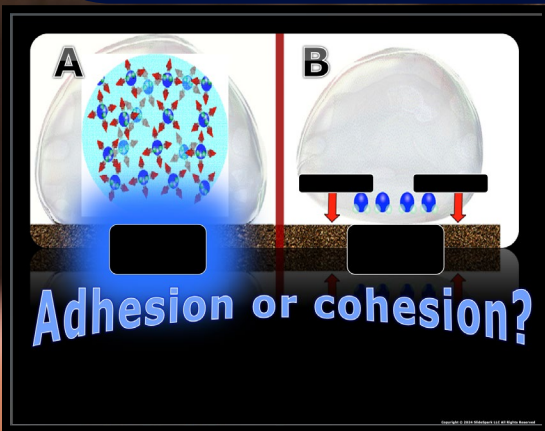
Water is _____ Two _____ atoms, one _____ with each hydrogen atom.

Please draw and label the most accurate molecule of H_2O possible in the box on the right. Please include two atoms of hydrogen, and one of oxygen. A strong answer will also include both + and - charge.



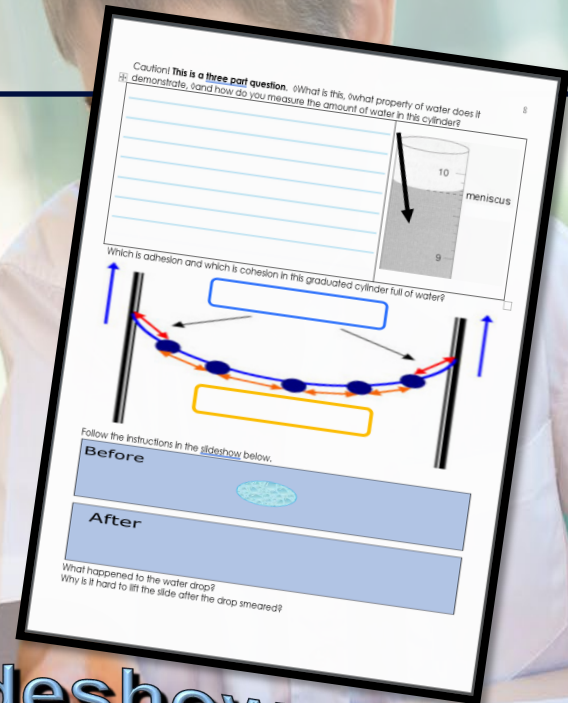
Red Slide Notes: Help students record important information in a fun and easy-to-understand way. Designed red-colored slides contain a few pieces of crucial information that students must record into their work bundle to complete the notes. Students will use these important notes throughout the work bundle.

The set-up of the slideshows are designed to make learning fun and interactive for students. With a mix of questions and answers, teachers can use these slides to get their students thinking and actively participating in their education. Plus, the answers are always revealed on the next slide, providing students with immediate feedback and helping teachers assess their understanding.



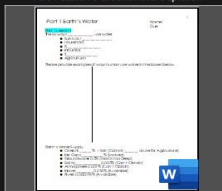
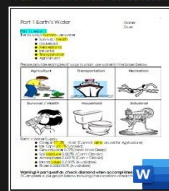
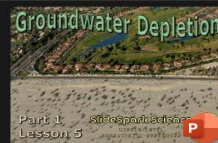
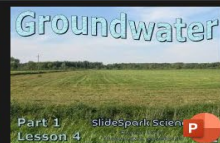
Next Slide

slideshow supports
Work Bundle



Lesson Planning

Daily lessons space exciting hands-on activities, red slide notes, video and academic links, projects, simulations, readings, built-in quizzes, and review opportunities throughout the slideshows. A typical day may have many different learning styles being targeted. Daily lesson planning becomes advancing through the slideshow roadmap the night before. Each lesson is roughly 50 minutes, but sometimes things can speed up or slow down. The best strategy is just to go at your classes own pace. The work bundle chronologically follows the interactive slideshow and you can always spend extra time assessing the quality of the writing within. If you don't quite finish a lesson, you can always pick it up the next day where you left off. The only real trick in timing is not starting a larger activity if you don't have the available time to complete. The slideshows have been designed to be a low stress, go at your classes own pace experience. Most activities are designed to be cost effective, using general materials that can be gathered from your local stores.



One clear, organized bundle guides students through notes, review, and assessments with ease.

Follow Along Work Bundle

Each science unit comes with several work bundles. The bundles should be printed before the unit begins and distributed to the students on the first day of the unit. The work bundles will be due shortly after the completion of the unit. The work bundle will become a resource for the review games, crossword puzzles, and will be collected for assessment. The work bundle follows the entire learning experience and will be used every day. They are chronological to the lessons and provide places to record fill-in notes, answer questions, collect data, graph and much more. An answer version is provided that can be distributed to your support professionals. A digital version of the work bundle and some writable .pdf versions are provided if you want to go paperless. These work bundles are perfect for students looking for an easy and organized way to track their progress and stay on top of their studies.

Part 1

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

Page 3 Lesson 1
Three six words _____ use water

- Survival / _____
- Household _____
- R _____
- Industrial _____
- I _____
- Agricultural _____

Please provide examples of ways humans use water in the boxes below.

examined, weighted frequency

- **Options** _____ % - Sell (cannot _____ of _____)
- **Ice Cap** _____ % (locked)
- **Groundwater** 0.3% (what is too deep)
- **Soil M** _____ % - 0.005% (Can't Obtain)
- **Atmosphere** 0.001% (Can't Obtain)
- **Island** _____ % - 0.005% (Available)
- **Waves** 0.00000005% (Available)

Graphing Groundwater Usage

Groundwater Usage

Date	Location	Amount	Remarks
1/1/19	1000	1000	
2/1/19	1000	1000	
3/1/19	1000	1000	
4/1/19	1000	1000	
5/1/19	1000	1000	
6/1/19	1000	1000	
7/1/19	1000	1000	
8/1/19	1000	1000	
9/1/19	1000	1000	
10/1/19	1000	1000	
11/1/19	1000	1000	
12/1/19	1000	1000	

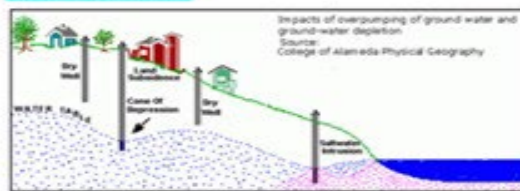
Water Level Below Ground

Year	Water Level Below Ground	Remarks
1960	1000	
1965	1000	
1970	1000	
1975	1000	
1980	1000	
1985	1000	
1990	1000	
1995	1000	
2000	1000	
2005	1000	
2010	1000	
2015	1000	
2020	1000	



Part 1 Lesson 4 Groundwater

Impacts of overpumping of ground water and ground-water depletion
Source:
College of Alameda Physical Geography



Start with...	2nd Month	3rd Month	4th Month	End with...
\$4,000				

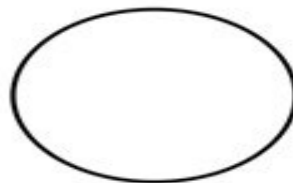
Groundwater Recharge and Discharge. How much money did you end up spending?

What eventually happened to the groundwater over time?

What happens when recharge occurs slower than discharge?

Warning! 4-part question, check diamond when accomplished.

- Write a 4-part question, check answers when accomplished.
- Complete a pie graph below showing the locations of earth's water.
 - Make sure that your graph includes all the places where water is located on earth.
 - Include % in the margin and
 - provide a brief statement about whether humans can use it for drinking and agriculture.



Part 1 Lesson 2 Master the Resource

Please answer 3 of the 7 questions below about The War Over the Well.

- 1) Where is all this fighting occurring? What are they fighting over?
- 2) What happened at the well near Kibadoze?
- 3) How many people are being affected by the drought in Somalia? What is happening to them?
- 4) Does Somalia have a government that can help? Explain?
- 5) What is a warlord? Are they good or bad? What do they do?
- 6) Describe one person from the article. What is their life like?
- 7) How would your life be different if we did not have any water or food?



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, 1997, 76, 10, 100.

Please use your knowledge of groundwater and groundwater depletion to discuss the photos taken above. Why is this concerning?

[illegible]

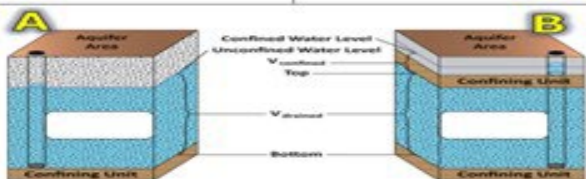
Part 1 Lesson 3 Groundwater and Water Conservation

Groundwater: Water stored in the _____

Aquifer: An underground layer of water-bearing porous rock.

Which letter is a confined aquifer, and which is an unconfined aquifer?

10



Dying for Water in Somalia's Drought

Friday, April 14, 2000

RABDORE, Somalia — Villagers call it the "War of the Well," a battle that erupted between two clans over control of a watering hole in this dusty, drought-stricken southern zone.

By the time it ended two years later, 240 men were dead. Now there are well widows, well warlords and well warriors.

"We call them the 'warlords of water,'" Fatima Ali Mahamoud, 15, said in a response about the armed men who control access to water sources.

One day last year, Mahmood's boyfriend went out in search of water. Two days later he was found dead, she said as an infant on her back [grind](#) and nine other children huddled at her feet down. He was shot when an angry crowd began fighting over the well, she said.

"His body was bloodied, swollen and just lying there with the other dead by the well, left in disgrace. The shame. World never seen conflict at this level of violence," she explained, shivering her eyes from a hot steam that was swirling in the heat under a blue sky. "Three lives men to this hour of war."

In Somalia, a well is as precious as a town bank, controlled by warlords and guarded with weapons. During the region's relentless three-year drought, water has become a resource worth fighting and dying over.

The drought has affected an estimated 11 million people across East Africa and killed large numbers of livestock, leaving carcasses of cows, goats and even honeybees rotting in the sun. The governments of Kenya and Ethiopia have mediated dozens of conflicts over water in their countries, even sending in police and the army.

The effects of the drought are most pronounced in Somalia, where an effective government and control of the land is lacking.

John Allen Blumstein, 34, whose husband was killed in the War of the Week in
Rafidain, walked more than 100 miles to reach his home. She and her husband once
had a farm and spacious barn for their 10 children. Now she lives in a shabby mud-
brick house.

She described her life as "monotonic" and said she preferred the comforts of a warm bed in the slightly cooler mornings and evenings, the coffee, the radio, the television and the fact that the temperature rises to 117 degrees during the day, so she spends most of it, "sweating in her sheets."

"I just sit in there, I pray to God and wait for Him. My children are going to be studying under a clock made of you. I will be in. My children are going to be studying under a clock made of you. They will be reading the very same stories," she said. "The most important is that they won't have faith. Our hearts will always be with you. We'll think in peace."

Please answer 3 of the 5 questions below.

- 5) What is all this fighting about? Why are they fighting now?
- 6) What happened at the wall near Washington?
- 7) How many people were being allowed by the Chinese to travel? What is happening in there?
- 8) How has China been a communist state for so long? Why?
- 9) What is it like there? Are they good or bad? What do they do?
- 10) Describe one person from the article. What is their life like?
- 11) How would you like to live different? How do the lives you want or need?

Amid the anar-
scratch out a l

The U.N. Women's Fund is a fund that they pick up women to give

"Even when I just take it over worms and dirt who works with the start of the

Before I go anywhere, I have to make sure someone is thirsty, they can shoot you for a glass of water," said a police officer. "There is no police to come and no government to say anything," said Sheikh Ibrahim Khalil, 53, who operates a transport company for the World Food Program. "In other places they may just want to rob the driver or take the food and sell it. But here they want the water, too."

Long-term solutions to fighting drought include collecting what little rainwater that does fall, building modern irrigation systems and using new water exploration techniques, water experts said. But that kind of effort typically requires the coordination and enforcement of a central government, said Zlatan Milisic, the World Food Program's country director for Somalia.

"Somalia at heart is a water crisis that has turned into a food crisis," Milojkovic said. "The effects here are worse than anywhere else because there's no government, there's no stability. To me, this is the most unstable place in the world that is currently suffering a drought."

Fights over water break out even in places with a healthy supply.

In one such place, the town of Wajid, a 36-year-old man was executed after he killed a man in a fight over a well last month, according to town authorities.

Somalis who fled the drought and are living in makeshift shelters on the edge of town said the story of the death terrified them. They had come to Wajid to find water and hoped they could do so without being subjected to violence.

Properties of Water

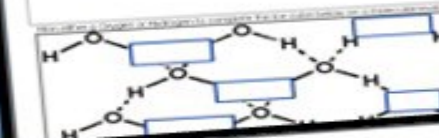
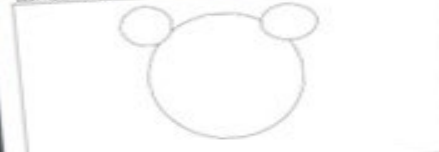
Work Bundle



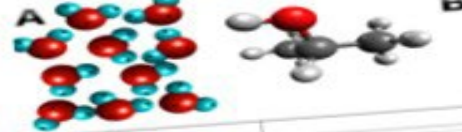
Part 3

Part 3 Properties of Water

Water is a _____ molecule, one _____ with each hydrogen atom.
 Water is a _____ molecule, one _____ with each hydrogen atom.
 Water is a _____ molecule, one _____ with each hydrogen atom.



Which is water and which is rubbing alcohol? Which one will evaporate faster?



What? How does this show water's high specific heat?

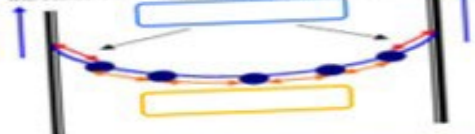


Part 3 Lesson 4: Adhesion and Cohesion

Name each state of matter on a molecular level. (Solid, liquid, gas)



Which is adhesion and which is cohesion in this graduated cylinder full of water?



What happened to the water droplet?
 Why is it hard to lift the dish when the droplet is released?

Polar molecule: One end of the water molecule tends to have a _____ charge while the other has a _____ charge.
 It's really comes from an uneven distribution of electrons _____ between Oxygen and hydrogen atoms.
 • The positive end of one water molecule is _____ the negative end of another water molecule. Hydrogen is Oxygen.
 • The strong attractions between water molecules cause all of water's "sticky" properties.



Activity! What evaporates faster / more volatile? Water or Rubbing Alcohol?

- Place a sheet of brown paper towel on your table.
- Place 20 drops of water on the paper towel near the 20 drops of rubbing alcohol.
- If you can do it at the same time that would create a great lab test.
- Record the time it takes for the wet mark made by the drops to disappear on the towel.



Part 3 Lesson 4: Adhesion and Cohesion

Cohesion: When _____ bonds hold water molecules together.

How many drops of water can you get on a penny?
 - Make pictures of 1, 10, and your last drop.

	1 drop	10 drops	Last drop
Does the side of the penny make a difference? Heads vs. tails.			
Average Heads =			
Average Tails =			
Trial	1	2	3
Heads			
Tails			

Adhesion: When water molecules _____ to _____
 A _____ is the curved surface of the top of a column of liquid caused by adhesion to the glass.

Caution! This is a three part question, what is this, what property of water does it demonstrate, and how do you measure the amount of water in this cylinder?



Plan of group + roles of each group member:

Cost Analysis Sheet

Top Scientist and Technician	Cost	Amount Used / Materials Used	Total Cost
Senior Scientist (Assistant)	10,000 dollars a day		
Junior Scientist (Assistant)	5,000 dollars a day		
Student Scientist	1,000 dollars a day		
Researcher	1,000 dollars a day		
Other	1,000 dollars a day		

1) What was the total cost of the clean-up effort?

Questions to be answered in team group

2) How do the oil behave on the water?

Show how oil, and ground how much, goes to enter the aquatic environment (2000-2005 percentages)



Surface tension: Water molecules tend to...
The surface of water is like a thin skin.
What do you really think about this?



Oil is one of the world's main sources of energy, but because it is heavily distributed it must be transported by ship, down rivers and by pipeline across land. The result is accidents, when transporting oil by vessel, when transporting oil, and when pipelines break, as well as when spillage occurs. Oil spills from tankers on the ocean contribute about 20 million gallons of oil to the marine environment each year.

While massive and catastrophic oil spills receive most of the attention, smaller and smaller oil spills and leaks occur regularly. Small industrial spills, automobiles, boats, and unattended oil about 100 million gallons of oil per year to the environment. As of the oil spill, environmental costs and damages, from cost millions and millions of dollars in clean-up and they continue human health problems. Oil spills are also very dangerous for marine mammals, birds, and other life organisms. Cleanup efforts are very costly and involve containing and collecting the floating oils. One technique involves skimming the surface (skimming) or on top of water, emulsifying the oil (skimming) into droplets, and cleaning the number with detergent. Oil skimming methods are also used for long-term clean-up.

Purpose: You and your future group are going to manage a clean-up team on a recent oil spill. You are required to clean up all of the oil in the environment and keep track of cost. The agency that hired you wants you to be able to account for every dollar spent, and wants to see every drop of oil that you removed.

Procedure: Teacher asks you to help group observe the oil slick for 5 minutes, group then divides on day and uses equipment to observe which simulates the beach. Then create a plan to get rid of the oil with your group. Implement plan, keep data clean, dispose of materials safely at end of class, calculate costs and record questions on the sheet.

Materials: Simulated (sandpaper), Clean-up tool for spilled oil (oil), String (contaminated water), coffee beans to clean coast, detergent to use in cleaning (oil), soap (for disposal of coffee beans).

Observations and detailed sketch of oil slick

Observations and detailed sketch of oil slick

What other group methods can be used to clean up the spill? your group is cleaning up the oil spill.

1. SK
2. SK
3. SK
4. SK
5. SK
6. SK
7. SK
8. SK
9. SK
10. SK
11. SK
12. SK
13. SK
14. SK
15. SK
16. SK
17. SK
18. SK
19. SK
20. SK

What property of water can be seen in the photograph below?
Please show another example of the property in the space below.

Why does this property occur?



For 2 weeks a high specific heat of water

High specific heat hydrogen bonds... held when they break, and... held when they form.
The high specific heat of water means that water won't freeze or heat up suddenly.
The gives aquatic organisms a chance to adjust to temperature changes slowly.

It takes significant... to change the state of water.

Which ones were frozen, and which were unfrozen after 15 minutes?



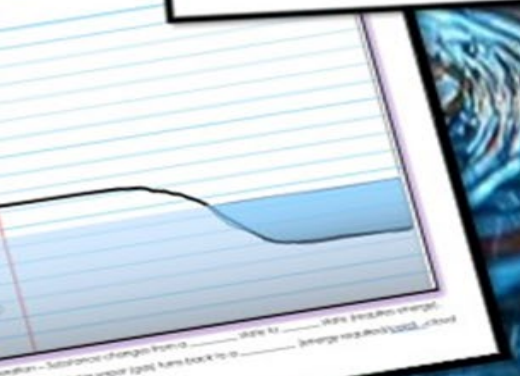
Students will be asked to...
The water cycle diagram below shows the water in the environment at all times. It is a cycle, and the water is always moving.



How does water move through the water in the environment at all times? It is a cycle, and the water is always moving.

Get water to the top of the atmosphere...
Get water to the bottom of the atmosphere...
Get water to the surface of the earth...
Get water to the bottom of the earth...
Get water to the surface of the earth...
Get water to the bottom of the earth...

Please complete the diagram below on the water cycle



Evaporation - substance changes from a... state to... state, results in energy...
Condensation - water vapor (gas) turns back to a... state, results in energy...
Precipitation - water falls from the sky as rain or snow.

precipitation: water that is falling from clouds as rain or snow.
 Sublimation: water that turns directly to a gas without passing through the liquid phase.
 Evaporation: water molecules escape from the liquid phase and enter the atmosphere.
 Surface runoff: the water that flows over the land's surface and into the oceans or a body of water.
 Percolation: the slow movement of water through the soil and rocks into the ground.
 Condensation: the process by which water vapor turns into liquid water.
 Precipitation: the process by which water falls from the sky as rain or snow.



8.) Which term is not shown.

Part 3 Review Game

Acids are hydrogen-containing substances that are capable of donating hydrogen ions to another substance.
 Acids are usually identified by their taste. Acids are known to turn litmus paper red.



Part 3 Review Game

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Part 3 Review Game

Question	Answer
1. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.
2. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.
3. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.
4. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.
5. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.
6. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.
7. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.
8. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.
9. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.
10. What is the difference between mass and weight?	Mass is a measure of the amount of matter in an object. Weight is a measure of the force of gravity on an object.



Acids are hydrogen-containing substances that are capable of donating hydrogen ions to another substance.
 Acids are usually identified by their taste. Acids are known to turn litmus paper red.



Answer Version

The collage consists of 20 hand-drawn study cards, each with a different background and layout. The topics covered include:

- Properties of Water:** A card titled "Top 3 properties of water" listing cohesion, adhesion, and surface tension, with diagrams of water molecules and a water droplet.
- Hydrogen and Oxygen:** A card showing the chemical structures of hydrogen (H₂) and oxygen (O₂) molecules.
- Water and Solvents:** A card titled "Water" and "Solvents" with a diagram of a water molecule and a list of solvents.
- Water Cycle:** A card titled "Water Cycle" with a diagram showing the cycle of water in nature.
- Acids and Bases:** A card titled "Acids and Bases" with a diagram of a pH scale and a list of acids and bases.
- Periodic Table:** A card showing a simplified periodic table with elements grouped by color.
- Cell Structures:** A card titled "Cell Structures" with a diagram of a cell and a list of organelles.
- Photosynthesis:** A card titled "Photosynthesis" with a diagram of a plant and a list of reactants and products.
- Respiration:** A card titled "Respiration" with a diagram of a person running and a list of reactants and products.
- Enzymes:** A card titled "Enzymes" with a diagram of an enzyme and a list of factors affecting enzyme activity.
- Genetics:** A card titled "Genetics" with a diagram of a DNA molecule and a list of genetic disorders.
- Evolution:** A card titled "Evolution" with a diagram of a tree and a list of evolutionary mechanisms.
- Ecology:** A card titled "Ecology" with a diagram of a food chain and a list of ecological concepts.
- Human Health:** A card titled "Human Health" with a diagram of a human body and a list of health issues.
- Environmental Science:** A card titled "Environmental Science" with a diagram of a globe and a list of environmental problems.
- Chemical Reactions:** A card titled "Chemical Reactions" with a diagram of a reaction and a list of reaction types.
- Atomic Structure:** A card titled "Atomic Structure" with a diagram of an atom and a list of atomic properties.
- Molecular Structure:** A card titled "Molecular Structure" with a diagram of a molecule and a list of molecular properties.
- Crystallography:** A card titled "Crystallography" with a diagram of a crystal and a list of crystal types.
- Thermodynamics:** A card titled "Thermodynamics" with a diagram of a heat engine and a list of thermodynamic laws.
- Fluid Mechanics:** A card titled "Fluid Mechanics" with a diagram of a fluid and a list of fluid properties.
- Optics:** A card titled "Optics" with a diagram of light rays and a list of optical phenomena.
- Acoustics:** A card titled "Acoustics" with a diagram of sound waves and a list of acoustic properties.

Built-in Questions

Many slides will have relevant terms covered with a box. When advancing through the slideshow an outline around the box will glow with a bright color. The next slide will make the box disappear. These slides allow the teacher to call upon students or table groups / check for understanding before advancing. The team at SlideSpark has found that using this technique helps to keep the students focused. Constantly recalling and reviewing information learned is necessary when moving through a large unit. The slideshows don't just give everything away for free. Students should be able to demonstrate knowledge before moving on. Some slides have full questions instead of just covered terms. In these slides, the teacher should encourage small group work. The teacher can then call upon one or two groups to share before advancing the slide. The next slide will always reveal the correct answer.

• Which of the following pictures will freeze first, second, third, fourth, fifth, and last?

A 	B 	C
D 	E 	F

• Which of the following pictures will freeze first, second, third, fourth, fifth, and last?

A 3 	B 1 	C 4
D 2 	E 5 	F 6

Why? How does this show water's high specific heat?

Which of the following pictures will freeze first, second, third, fourth, fifth, and last?

A 	B 	C
D 	E 	F

Part 3: Lesson 2 The Water Cycle

Name each state of matter on a molecular level. (Solid, Liquid, Gas)

 Solid: Ordered <input type="text"/>	 Liquid: Called a liquid <input type="text"/>	 Gas: Moving fast <input type="text"/>
--	---	--

True or False? On earth water exists in all three states of matter.

True or False? The lower density of ice causes it to float.

True or False? The oceans and atmosphere move heat around the planet.

Review Game / Assessments

Each of the 11 Units concludes with a review quiz. Answers are provided in slideshow form so students can self assess. A blank template sheet is provided in the work bundle. Students can benefit from working together in small table groups with quiet communication. You can decide if you want to allow the use of work bundles or not. These are a nice review opportunity and get the students looking through their work bundles for the answers.



Part 3 Review Game
1:20 = 5 pt. **Part 3 Lesson 14**
*20*25* = Bonus + 1 pt.
(Secretly write owl in correct space +1 pt)
Final Question = 5 pt wager

Name: _____
Due: Today
Score ____ / 100

PROPPED UP	THIRSTY CHARLIE	HOT WATER	MIXED UP	FAMOUS FISH
1) C.) Two hydrogen atoms bonded to one Oxygen atom	6) Cohesion	11) Surface Tension	16) A=Condensation B=Precipitation C=Surface Run off D=Evaporation	*21) Martin And Nemo
2) A=Hydrogen B=Oxygen	7) Adhesion	12) Hydroplaning	17) LOWER DENSITY OF ICE IT FLOATS	*22) Big Mouth Billy Bass
3) Water is Polar Hydrogen & Oxygen	8) Meniscus A=Adhesion B= Cohesion	13) HEAT HEAT	18) Acid N Base	*23) Boulder
4) A=Hydrogen Bonds	9) E=Capillary Action	14) GULF STREAM	19) SOLUTE SOLVENT	*24) STARKIST
5) Water is Polar Oil = Non-polar	10) Chromatography Bottom colors are the most dense	15) SOLID LIQUID GAS	20) WATER is the Universal Solvent	*25) "P. Sherman, 42 Wallaby Way, Sydney"

Final Question Wager ____ /5. Answer: _____

Final Question Wager ____ /5. Answer: Heterogeneous, Oil=Non-polar, Water=Polar, Oil is less dense, Water is more dense

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WATER ON EARTH

Quiz Game

Part 1

- The oceans make up this % of all the water on planet earth?
- A.) .097%
- B.) .97%
- C.) 9.7%
- D.) 97%

6



- Earth is known as the blue planet as it has this glow from space.
- This blue is from all the water on our planet.

1

Atmosphere
and the Hydrosphere

This is the name for an underground layer of water-bearing permeable rock.

8

Aquifer

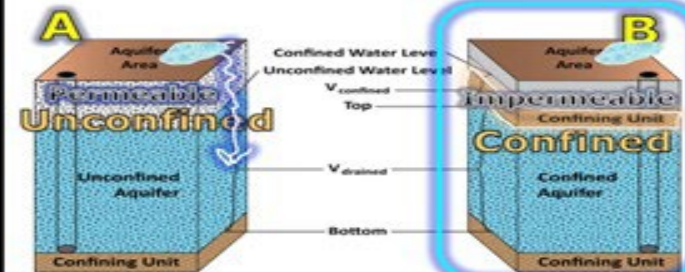
- Name some sources of usable and obtainable freshwater on planet earth? Two Points each
- Rivers, Inland Lakes, Groundwater

7



Which one is **confined**?

9



- Name this sea in Kazakhstan that has vanished as a result of poor water planning.

Today

13

- Which is not a negative effects of groundwater depletion

- A.) Drying up of wells
- B.) Reduction of water in streams and lakes
- C.) Deterioration of water quality
- D.) Increased pumping costs
- E.) Land use decreases in quality

12

What years saw the most discharge from the aquifer in Georgia?



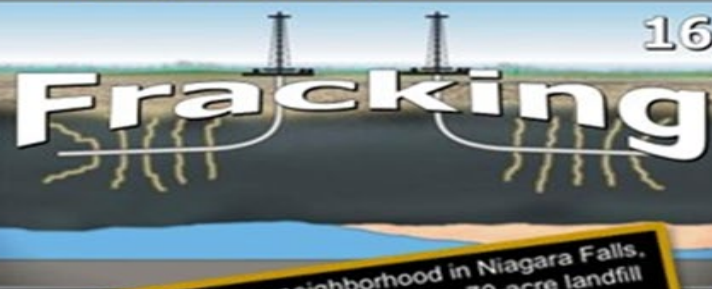
11

Name 3 sources of groundwater contamination?



14

- This is the slang term for hydraulic fracturing.
 - It's a procedure of creating fractures in rocks and injecting fluid into cracks to force them further open to extract fossil fuels.



16

This was the name for a neighborhood in Niagara Falls, New York, infamous as the location of a 70-acre landfill that became the site of an enormous environmental disaster in the 1970s.



15



• Which is recharge and which is discharge to the aquifer?



2

Survival / Health

4

Agricultural

Transportation 5

What is the name of this
source of freshwater?

The Great Lakes

Does anyone know
the names?

18

- Name 5 ways to conserve water? Keep it simple and short. (1 point each)

**WATER
CONSERVATION
AROUND THE HOUSE**

Let's Share!

17

The Earth surface is covered with roughly this
percentage of water?

20

- A.) 3%
- B.) 25%
- C.) 40%
- D.) 71%**
- E.) 100%



- Which is not a source of the water on
planet Earth?

19



- Which are the only two below that are
obtainable Freshwater?




VOLUME & DENSITY

QUIZ GAME



Part 2

• Science uses water as a part of the metric system.
– 1 cubic centimeter of water weighs 1 gram.
• Example 1,000 ml weighs 1,000 grams (1 liter) = (1 kilogram)




1 gram

10 points each



Question	Answer	Points

• Volume and Density
– 10 Points each, bonus +5 points.



Part 4

• A cube measuring 10 cm, by 10 cm, by 10 cm if filled with water would weigh how much?

A liter is the volume of a cube 10 cm on each side.

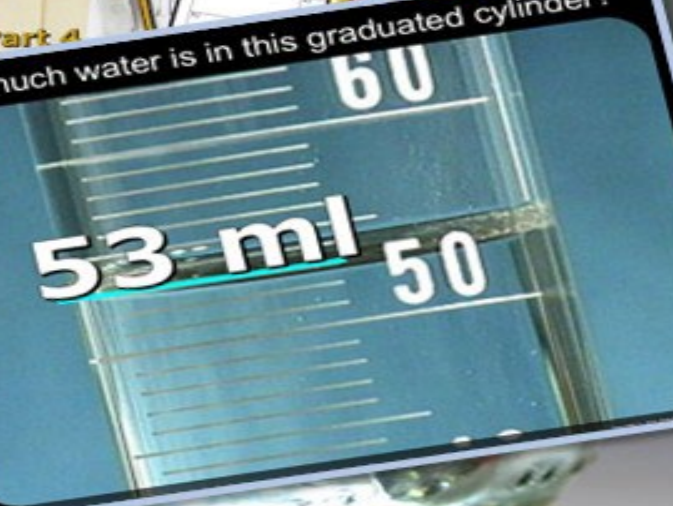


1000 g or 1 kg

10 cm 10 cm 10 cm

$10 \times 10 \times 10 = 1000$

• How much water is in this graduated cylinder?

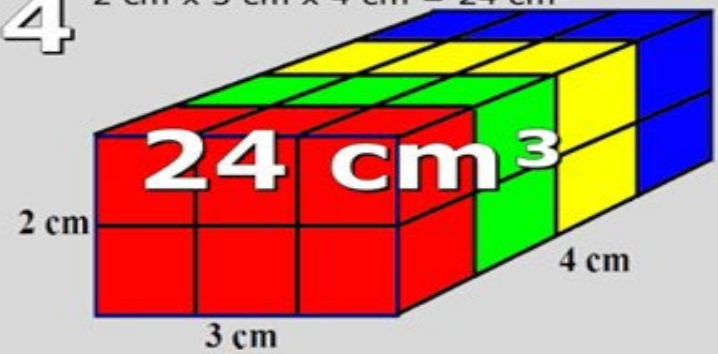


3 53 ml 50 60

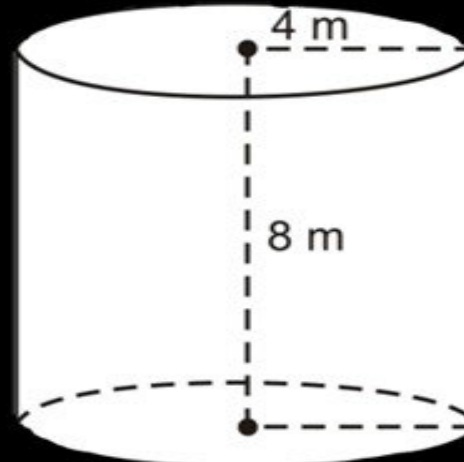
- What's the volume of this rectangle?

4

$$2 \text{ cm} \times 3 \text{ cm} \times 4 \text{ cm} = 24 \text{ cm}^3$$



- What's the volume of this cylinder?



$$\text{Volume} = \pi \times r^2 \times h$$

- PEMDAS – Must do exponents first

- Volume to be...

$$3.14 (4^2) \times 8 =$$

$$3.14 (16) \times 8 =$$

$$3.14 (16) \times 8 = 401.92 \text{ cm}^3$$

5

- The wooden block has density less than...

8

Less than 1 g/cm^3
(It floats in water)

- Name one liquid **more dense than water**, and one liquid **less dense than water**?

10

Edible oil

Water

Dishwashing liquid

Sugar Syrup

Honey

- What is the density of this cube?

9

5 cm

$$D = m/v$$

$$145 \text{ g} / 125 \text{ cm}^3 = 1.16 \text{ g/cm}^3$$

1.16 g/cm^3

Weights 145 g

50

- Density: Is how much mass is contained in a given volume. We use grams/cm³
– (grams per cubic centimeter)

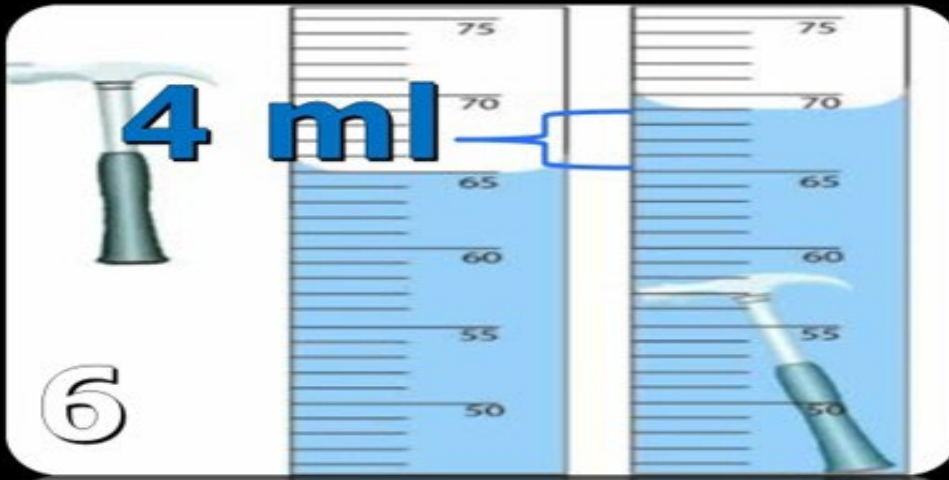
What is the formula for finding density?

7



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- What's the volume of the toy hammer?



- Density: Is how much mass is contained in a given volume. We use grams/cm³
– (grams per cubic centimeter)
What is the formula for finding density?
– Density = Mass divided by volume

7

$$D = \frac{\text{mass}}{\text{volume}} = \text{grams/cm}^3$$

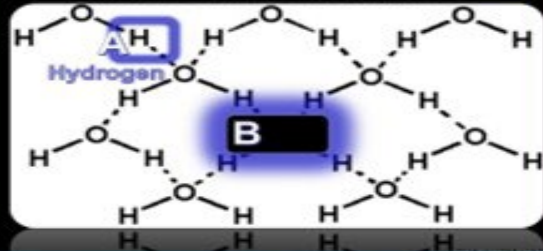
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Properties of Water

QUIZ GAME

Part 3

- 2
- What atom is beneath the boxes?
 - Note: This is water in its solid state (ice)

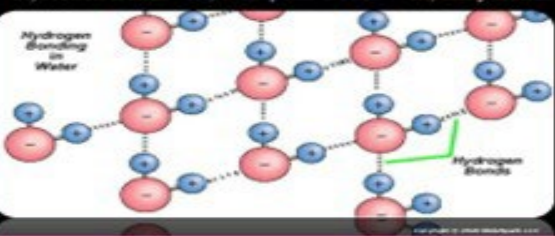


- 6
- What property of water can be seen below?
 - When hydrogen bonds hold water molecules together.

Cohesion

Water is a social molecule and forms these types of bonds?

- 4
- A.) Hydrogen Bonds B.) Triple Bonds
C.) Action Bonds D.) Non-polar Bonds E.) Lazy Bonds



Water is a **polar** molecule. One end tends to have a positive charge and other a negative charge. Which is + and which is -?



- 1
- Which below best describes the water molecule.
 - A.) One atom of hydrogen and two atoms of oxygen
 - B.) Three hydrogen atoms
 - C.) Two hydrogen atoms bound to one Oxygen atom
 - D.) Three covalently bonded oxygen
 - E.) Trihydrogen Dioxide



5

Oil and water don't mix.
Why in less than 8 words?

Water is polar and
oil is non-polar

- 7
- Why aren't these droplets falling to the ground? (One word)

Adhesion

Part 3 Review Game

Question	Answer
1	
2	
3	
4	
5	
6	
7	

Part 3 Review Game

Question	Answer
1	
2	
3	
4	
5	
6	
7	

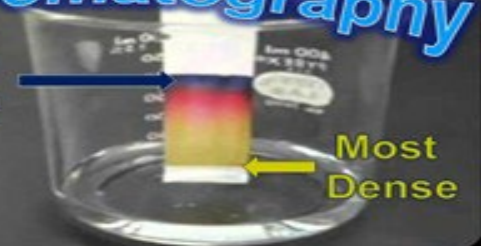


- Name this method to used to separate a complex mixture?
 – Which color is the least dense?

10

Chromatography

Blue / Purple



- Name this property of water?

11

Surface Tension

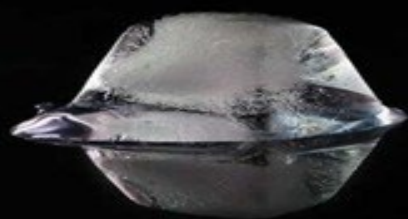


- These images best represent the term...
 A.) Osmosis B.) Surface Tension C.) Neutral pH
 D.) High Specific Heat E.) Capillary Action

9



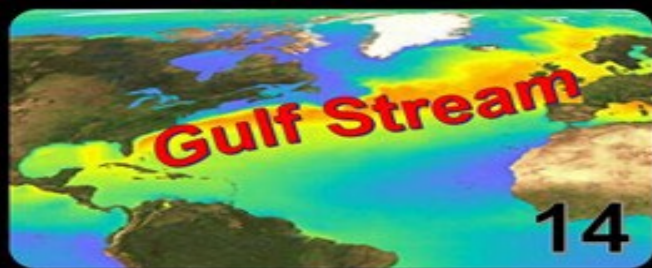
- Hydrogen bonds absorb when they break, and release when they form.



13

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- What is the name of this warm water current that travels NE along the United States toward Europe.



14

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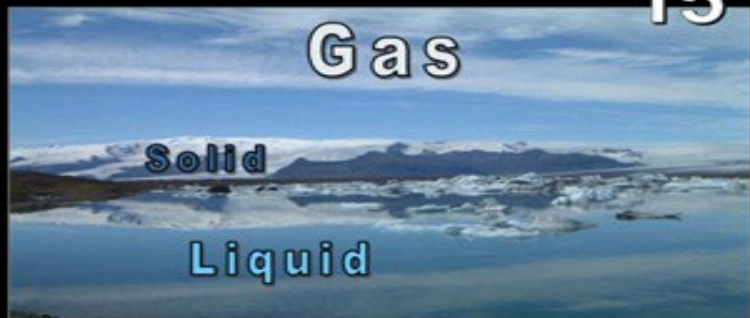
- Waters exists in these states of matter on planet earth?

15

Gas

Solid

Liquid



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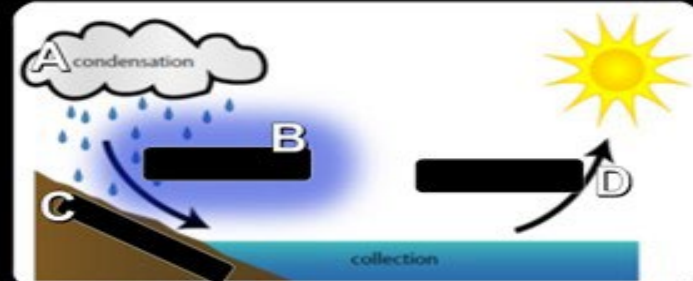
- What's the name for when a car loses control of the road as it rides on top of the water?

Hydroplaning
Hydroplaning

12

- Name the parts of the hydrologic cycle below?

16



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Water Cycle

- Homogeneous or Heterogenous?
- Which is polar and which in non-polar?
- Which is less dense?

Heterogeneous

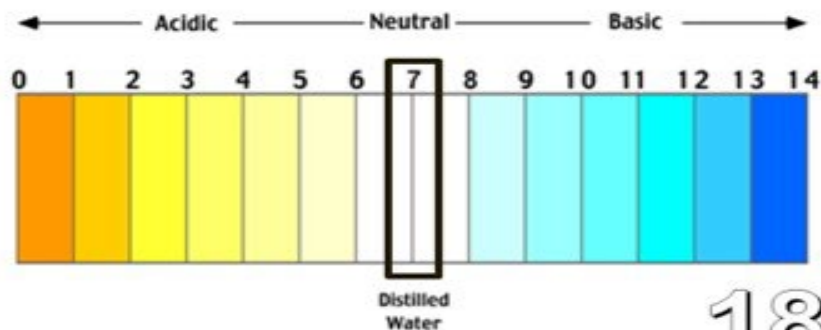
Oil Non-polar

Polar Water

Solvents

pH

- Where does water fall on the pH scale?
- **Acidic** **-Neutral** **-Basic**



18

- The polarity of water pulls in other molecules and surrounds them with water molecules.

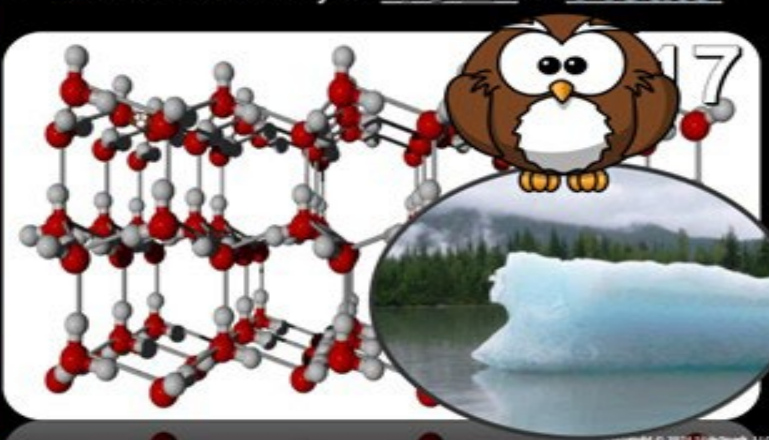
This makes water the...



- Solution: A liquid mixture in which the minor component (the solute) is uniformly distributed within the major component (the solvent).



- The Lower Density of **ICE**. It **Floats**!



Activities / Labs

Our science activities are designed to help students explore and understand complex scientific concepts in an engaging and interactive way. Each science unit includes several hands-on activities that encourage students to collect data and think critically about the world around them. Our easy-to-follow slideshow provides detailed visuals, simple materials, and clear directions, making it easy for both students and teachers to navigate the activities.

- Activity! Soda Store

A new soda

for Sc

Group Roles

Marketer

Graphic Designer

President

Taste Chemist

Solute
1/4 cup of sugar
(flavored?)
(Colored?)
(What else?)

On the bac

(Water)
Solutes
Sugar / Flavo
Colors)

Goal Lab

- Presentation:

After the BIG Opening!

- **President** introduces the name of the soda and the team members / roles.
- **Taste Chemist** describes...
 - The Solvent (Water)
 - The Solutes (How much? Sugar, Types of Flavors, Colors)
- **Marketer** may mention the bottle label / jingle.
- **Graphic Designer** can discuss the bottle and digital background / logo

carbonated water use an extra large funnel (half of a soda bottle) when adding the sugar / solutes.

- Activity! Soda Store Available Sheet.

[illegible]

Solute Chef: You work with the rest of the team but the taste of the sodas is up to you. Bring the soda (dry ingredients) to class tomorrow to be mixed with the water.

President: You need to work closely with the marketing agent, graphic designer, and solute chef. The success of all three is up to you.

The best below is your soda wrapper. Make it cool, include the name of the soda, slogan, and must include the ingredient list of solutes.

Taste Chemist: See teacher when available to add flavors. Small cups are provided to try tiny sample for president. Work on color and flavor. 200 grams of sugar max.

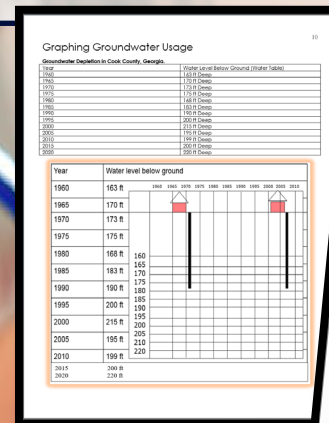
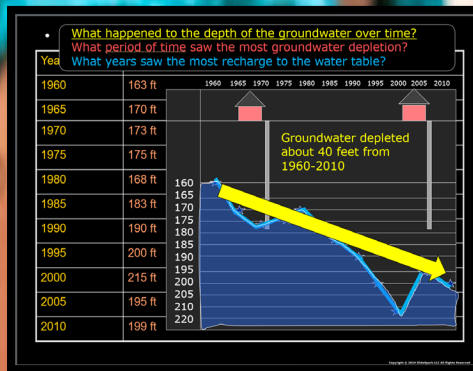
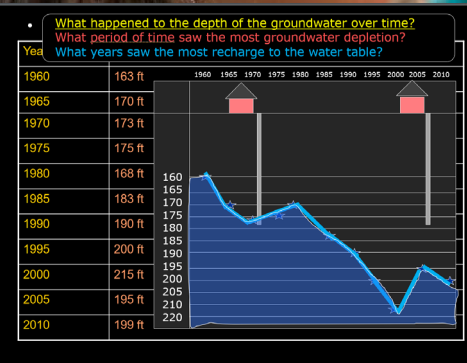
Graphic Designer: Create label for the soda bottle.

Marketer: Create one slide digital background for presentation. Work with graphic designer.

President: Coordinate all of the above into one vision. Motivate and Inspire. Make changes that you feel are necessary.

Built-in Questions

Each unit contains several built-in assessment questions that students answer in their work bundle. With the question revealed before the answer, the teacher can easily call on individual students or table groups to respond. These provide an effective and efficient way for teachers to assess student learning.



What happened to the depth of the groundwater over time?

What period of time saw the most groundwater depletion?

What years saw the most recharge to the water table?

Part 1 Lesson 3 Groundwater Depletion

Negative

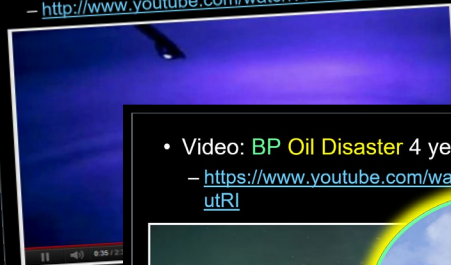
- Drying up of _____ of Groundwater Depletion
- _____ of water in streams and lakes
- Deforestation of _____ quality
- Increased _____ costs
- Land use decreases in _____

Questions in Work Bundle →

Built-in Video Links

Our science education program is designed with the modern, multimedia learner in mind, and our video links are a perfect complement to our educational materials. These short clips are embedded into the slideshow at just the right places for a fantastic review. Whether you're studying biology, chemistry or physics, our video links are an excellent way to reinforce your learning.

- Video Link (Optional) Water droplet in slow motion, some properties of this polar molecule.
– <http://www.youtube.com/watch?v=vExvaDnITSw>



- Video: BP Oil Disaster 4 ye
– <https://www.youtube.com/watch?v=utRI>



- Video! Water on the ISS
– <http://www.youtube.com/watch?v=RphulV30g>



- Video Link! The World of the Water Str
– <http://www.youtube.com/watch?v=RphulV30g>



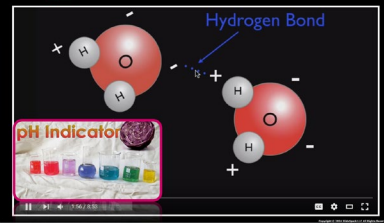
- Animation of water molecules forming a crystal lattice (ice).
– Molecules attach to each other with + and - bonds. They do not move quickly around when in the solid state.
– <http://www.youtube.com/watch?v=RIW65>



- Video Link! Lake Turnover (Optional)
– <http://www.youtube.com/watch?v=uSFSNTI67wc>



- Acids / Bases, pH
– <https://www.youtube.com/watch?v=Xeuy55LqIY>



- Video Link! Supersaturated with Sodium Acetate and some interesting students.
– <http://www.youtube.com/watch?v=1y3bKlOkcmk>



Games and Review

Games are a fantastic way for students to learn scientific concepts while having fun. We incorporate a variety of games into our curriculum, including interactive quizzes and puzzles that challenge students to think critically about the material. Our Hidden Box Games are a particularly popular feature, which conclude each unit by revealing a picture related to the topic. Students try to guess what the picture might be, making learning an engaging experience.

Answers:
Adhesion, Bulk, Capillary, Chromatography, Cohesion, Condensation, Density, Diffusion, Evaporation, Heat, Homogeneous, Insects, Insoluble, Neutral, Nonpolar, Oceans, Out, Pulse, Precipitation, Properties, Rivers, Solubility, Soluble, Solvent, Water, Zero

Answers:
1. Hydrogen bonds hold water molecules together to each other.
2. Water is at 100 degrees Celsius.
3. Water that is so heavy it falls as liquid.
4. A mixture of two or more compounds.
5. Water freezes at 0 degrees Celsius.
6. The strong up of water is one effect of cohesion.
7. These molecules tend to have high charges (+) (-).
8. The curved surface at the top of a column of liquid.
9. The movement of water on, above, and below the surface of the earth.
10. Island Lakes, Convection, and we available freshwater sources?
11. Most of the freshwater is locked away in ice.
12. property that holds water to a surface.

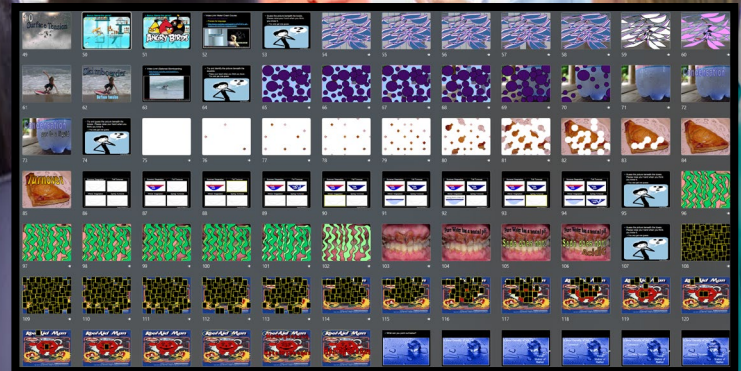
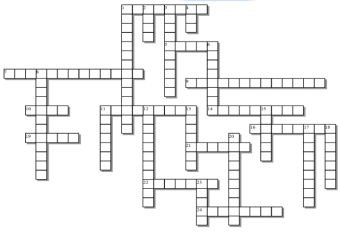
Answers:
1. A method used to separate complex mixtures.
2. High Specific Heat. Hydrogen bonds absorb heat when they break, and release heat when they form.
3. Heat and water can dissolve in a substance before it becomes saturated.
4. Water weighs 1 gram per cubic centimeter.
5. A liquid mixture in which the minor component (the solute) is uniformly distributed within the major component (the solvent).
6. Water vapor (gas) turns back to a liquid (liquid) through condensation.
7. Lower energy for flow.
8. Substance changes from a liquid state to a gas state (evaporation).
9. Water in a pure state has a high boiling point.
10. Water molecules tend to have a positive charge and negative charge.

Does mixing sugar and water result in a new substance? _____

The sugar changed from a solid to a _____. This is a _____ change and not a chemical change.

When we burn the sugar in our cells, we do change its form / create a cell. We eat / drink sugar and glucose in oxygen gas. The products of the chemical spacings are carbon dioxide gas and water vapor that we exhale.

$C_6H_{12}O_6 + 12O_2 \rightarrow 12CO_2 + 6H_2O$



- It also kills plants and contaminates the soil.



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- It also kills plants and contaminates the soil.



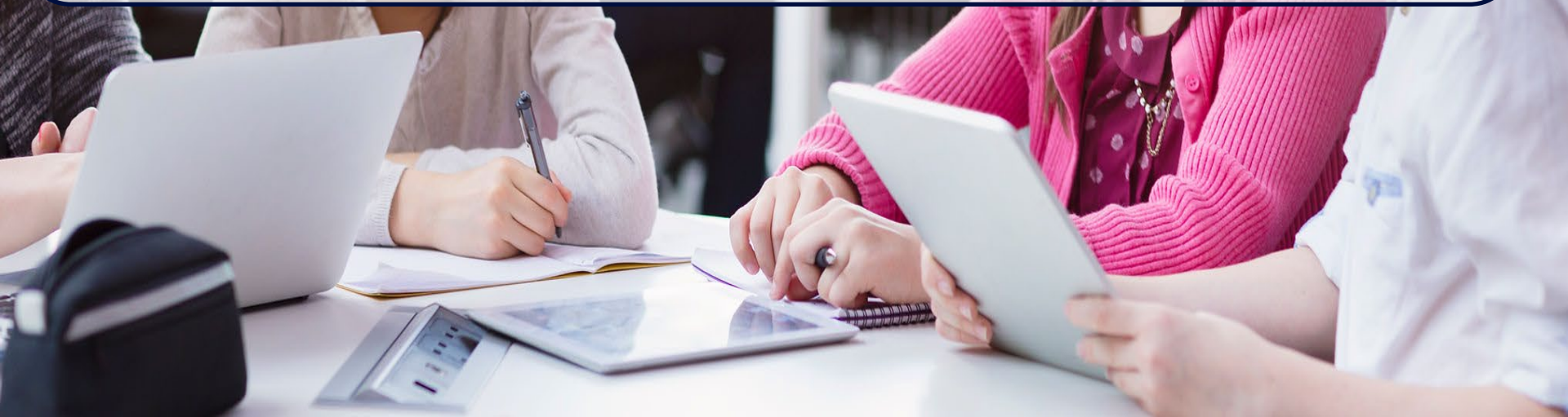
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The Owl - Each Part of the slideshow has a small clipart Owl hiding somewhere in a slide. The owl is incredibly small and blended into just the right slide. If a student spots the “Owl” they can raise their hand high into the air. When you call upon the student they can say “Owl” and be the student who spotted the Owl. Each PowerPoint Review game also has an owl hiding in it worth one point. Remind the students that they secretly write the word “owl” rather than yell it out during the review games. The Owl search is not included in every lesson. A slide at the beginning of the lesson will alert the students that today is an “Owl” day. Everything arrives editable so delete if you wish. You will find that some students will become the expert owl hunters in the group.

Google Classroom Compatible

Our digital learning programs are designed for students to learn science in a flexible and engaging environment. Our Google Classroom-compatible units provide a seamless learning experience whether your students are in the classroom or learning from home. Our step-by-step slideshows and student work bundles ensure that students can complete their work independently. The PowerPoint Slideshows and step-by-step work bundles can easily be loaded to your Google Drive and posted in your Google Classroom. These are great for daily lessons, students who need additional time, and for a student who was absent and looking to catch up in their work bundle.





Part 1 Lesson 2 Water the R...

Google Slides



Part 1 Lesson 1 Water on Ear...

Google Slides



Part 1 Lesson 6 Contaminati...

Google Slides



Part 1 Lesson 3 Water Cons...

Google Slides



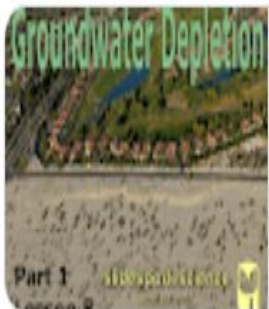
Part 1 Lesson 4 Groundwater

Google Slides



Part 1 Lesson 8 Review Game

Google Slides



Part 1 Lesson 5 Groundwater...

Google Slides



Part 1 Lesson 7 Pollution an...

Google Slides



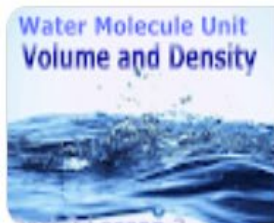
[Part 2 lesson 4 Density...](#)

Google Slides



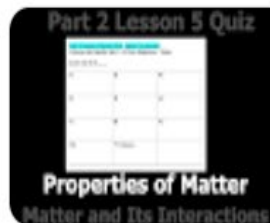
[Part 2 lesson 1 Mass and...](#)

Google Slides



[Part 2 lesson 2 Calculati...](#)

Google Slides



[Part 2 lesson 5 Density...](#)

Google Slides



[Part 2 lesson 3 Optional ...](#)

Google Slides



[Part 2 lesson 6 Density...](#)

Google Slides



Part 3 Lesson 10 Acid Rain

Google Slides



Part 3 Lesson 2 Polarity Lav...

Google Slides



Part 3 Lesson 5 Surface Ten...

Google Slides



Part 3 Lesson 4 Adhesion C...

Google Slides



Part 3 Lesson 9 Acids and B...

Google Slides



Part 3 Lesson 6 Specific Heat

Google Slides



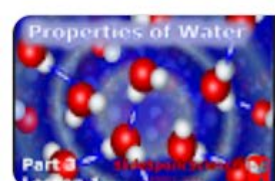
Part 3 Lesson 3 Oil Spill at S...

Google Slides



Part 3 Lesson 8 Lake Turnov...

Google Slides



Part 3 Lesson 1 Structure of ...

Google Slides



Part 3 Lesson 7 Water Cycle...

Google Slides



Part 3 Lesson 13 Quiz Wrap ...

Google Slides



Part 3 Lesson 14 Review Ga...

Google Slides



Part 3 Lesson 12 Soda Store

Google Slides



Part 3 Lesson 11 Solubility t...

Google Slides

Water Molecule Unit

Water Unit

20 Lessons (5th-7th – Medium Difficulty) Part 1 has 8 Lessons and 21 Page Work Bundle, Part 2 has 5 Lessons and 5 Page Work Bundle, Part 3 has 14 Lessons and 25 Page Work Bundle

[Water Unit Part 1 Download](#): Ways Humans Use Water, Earth's Water Supply, Water % on Earth and Locations, Water Shortages, Case Study of a Well in Somalia controlled by Warlords, Groundwater, Ground Depletion vs Recharge, Negatives of Groundwater Depletion, Water Conservation, Aquifers, Types of Aquifers, Groundwater Pollution, Case Study of Love Canal Tragedy, Edwards Aquifer, Danger Under the Sand Groundwater Pollution Activity, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

[Water Unit Part 2 Download](#): Volume and Density: Mass, Metric Ton, Volume, Finding Volume of Objects and Measuring, Volume of Irregular Shaped Object by means of Water Displacement, Finding Density, Finding the Density of a Student Optional Activity, Going Rafting Activity, Volume and Density Quiz with Answer Version so students can Self-Assess

[Water Unit Part 3](#): Properties of Water, The Water Molecule, Polar and Non-polar molecules, Volatility Activity with Alcohol vs. Water, Making a Lava Lamp Activity, Oil Spill at Sea Clean Up Project, Properties of Water, Cohesion, Adhesion, Water Drops on a Penny Activity, Capillary Action, Paper Chromatography Activity with filter paper, Capillary Action, Surface Tension, Swirly Milk Activity, High Specific Heat of Water, The Gulf Stream, Ocean Currents, Water Cycle, Terms of the Water Cycle, Condensation, Precipitation, Evaporation High Specific Heat, Ice Cube Tray Activity, Neutral pH, Acids, Bases, Acid Base Activity, Lower Density of Ice, Water is the Universal Solvent, Mixtures, Homogeneous Mixtures, Heterogeneous Mixtures, Mixture Activity, Solutions, Solvent, Solute, Supersaturation, Soda Store Project where Students Make and market and brand of Soda to Scientists, Box Game Review, Crossword Puzzle, End Unit Assessment with Answer Version so Students can Self-Assess

27 Lessons

Full of hands-on activities



Hundreds of Amazing and Interactive Slides



3 Parts, 51 Pages of Work Bundles

Part 1: Ways Humans Use Water, Earth's Water Supply, Water % on Earth and Locations, Water Shortages, Case Study of a Well in Somalia controlled by Warlords, Groundwater, Ground Depletion vs Recharge, Negatives of Groundwater Depletion, Water Conservation, Aquifers, Types of Aquifers, Groundwater Pollution, Case Study of Love Canal Tragedy, Edwards Aquifer, Danger Under the Sand Groundwater Pollution Activity

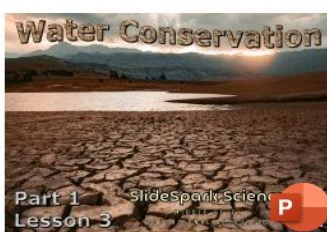
[Water Unit Part 1 Download](#)



Part 1 Lesson 1 Water on Earth



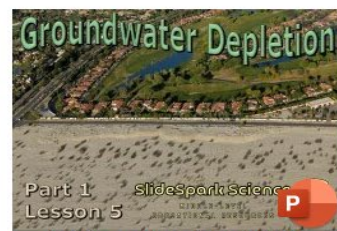
Part 1 Lesson 2 Water the Resource



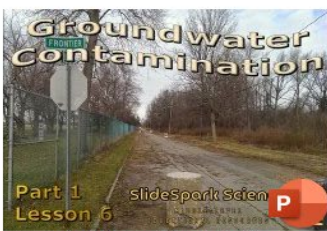
Part 1 Lesson 3 Water Conservation



Part 1 Lesson 4 Groundwater



Part 1 Lesson 5 Groundwater Depletion



Part 1 Lesson 6 Contamination



Part 1 Lesson 7 Pollution and Wrap Up



Part 1 Lesson 8 Review Game



Part 1 Lesson 9 Review Game Answers



Part 1 Materials List



Part 1 Work Bundle Answers



Part 1 Work Bundle Printed

WATER ON EARTH

The Earth surface is covered with roughly this percentage of water?

20

- A.) 3%
- B.) 25%
- C.) 40%
- D.) 71%**
- E.) 100%

- **Aquifer:** An underground layer of water-bearing permeable rock.

Permeable: Allowing liquids or gases to pass through it.

Wells pumping up groundwater

Impermeable

Learn more about water use at...
<http://www.epa.gov/wateruse>

- This is the name for an underground layer of water-bearing permeable rock.

8

Aquifer

- These are the areas of the world that struggle everyday from drought and famine.

The Hydrosphere and Atmosphere
supplying water to
the **Biosphere**

Undernourished World Population
Source: The State of Food Security in the World 2008, 2008

Called the
Cryosphere

8 Lessons

Water on Earth?

Rivers

Lakes

Clouds

Oceans

71% of Earth is covered in water

Living Things

Ice Caps

- Water is essential for life, and all organisms depend on it.

Atmosphere

Biosphere **Hydrosphere**

Lithosphere

Interactive Slideshows

• What does this have to do with groundwater?

- Groundwater Depletion
- Car Payment - \$500
- Groundwater Recharge
- You get paid +\$1500



• Groundwater Available Sheet



• Activity! Danger under the sand worksheet.

- Please complete the worksheet for a grade.
- Due at the end of class.



• Activity! Reading the article about the war over the well in Somalia.

- Please answer 3 of the 7 questions in detail after reading the article.



• Video Link! Drought and

- Observe how people in the video rely on water.
- <http://www.youtube.com/watch?v=gOpURGIAsqY>



• Activity! Love Canal Article.

- Please read the article about Love Canal and answer selected questions in your journal.



The 1942 picture shows mesquite and cottonwood trees along the river. The same area 47 years later shows that the trees have disappeared. Water data from local wells indicate that the groundwater levels have declined more than 100 feet due to pumping. The use of groundwater / pumping appears to be the reason for the loss of trees.



• Which is not a negative effects of groundwater depletion

- Drying up of wells
- Reduction of water in streams and lakes
- Deterioration of water quality
- Increased pumping costs
- Land use decreases in quality



A large, realistic image of the Earth, showing the Americas, Europe, and Africa. The Earth is depicted with detailed cloud patterns and vibrant colors. It is set against a background of a newspaper page, which is partially visible and contains various text columns and a small globe icon in the bottom left corner.

Readings, Video Links, Activities, Assessments, all Built-in

- Reading with video: the Aral Sea.

– <http://www.bbc.co.uk/news/resources/idt-a0c4856e-1019-4937-96fd-6714d70a48f7>



- Activity! Water Pollution (Follow Up)

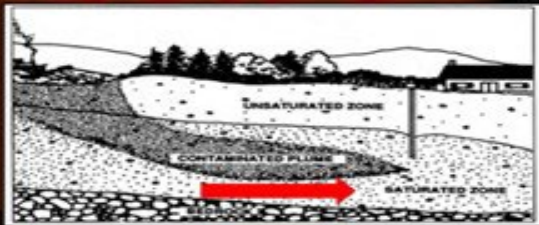
- Did the color of the water change as a result of the trash?
- Use a white background to compare the two.
- Which was the control group, and which was the experimental group?
- Why is a control group important?



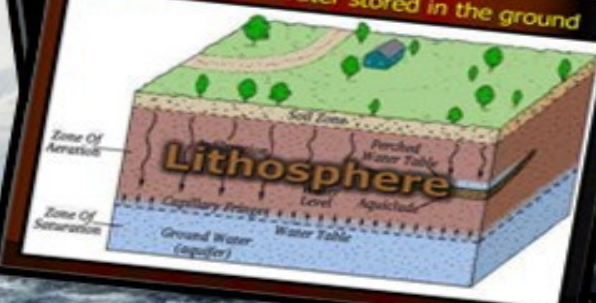
– areas of high contamination,



- Groundwater contamination can travel with the water as it travels under the ground naturally.



- Groundwater: Water stored in the ground



- Aquifers / Groundwater pollution source

– <https://www.youtube.com/watch?v=quzlvOHTg8>



Type of Use	User per person per day (gpd)
Shower/bath	10-25
Toilet	5-15
Washing Clothes	10-15
Washing Dishes	5-10
Cooking	5-10
Miscellaneous	5-10
Total	40-60



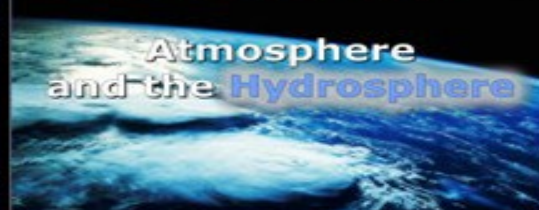
- Video Link! Water Conservation Tips.
- You can pull out your homework right now if you choose.
- <http://www.youtube.com/watch?v=4MDLpVHY8LE>



- Earth is known as the blue planet as it has this glow from space.
- This blue is from all the water on our planet.


1

Atmosphere and the Hydrosphere



Part 2 Volume and Density: Mass, Metric Ton, Volume, Finding Volume of Objects and Measuring, Volume of Irregular Shaped Object by means of Water Displacement, Finding Density, Finding the Density of a Student Optional Activity, Going Rafting Activity


Part 2 Lesson 1



Mass and Volume
Properties of Matter
Matter and Its Interactions

Part 2 lesson 1 Mass and Volume


Water Molecule Unit
Volume and Density



Part 2 Lesson 2

Part 2 lesson 2 Calculating Density


Part 2 Lesson 3 Optional



Properties of Matter
Matter and Its Interactions

Part 2 lesson 3 Optional Density Person


Part 2 Lesson 4



Density Experiments
Properties of Matter
Matter and Its Interactions

Part 2 lesson 4 Density Visuals


Part 2 Lesson 5 Quiz



Properties of Matter
Matter and Its Interactions


Part 2 lesson 5 Density Quiz

Part 2 Lesson 6 Density Quiz ANSWERS




Properties of Matter
Matter and Its Interactions

Part 2 lesson 6 Density Quiz Answers Rafting




Part 2 Materials List

Part 2 Properties of Matter




Part 2 Work Bundle Answer Version

Part 2 Properties of Matter



Part 2 Work Bundle Digital Version

Part 2 Properties of Matter



Part 2 Work Bundle Printed Version

[Water Unit Part 2 Download](#)

Volume and Density Unit

- Mass: The amount of matter in an object. Weight has to do with gravity.
- On Earth, your mass and your weight are the same.



- Science uses water as a part of the metric system.

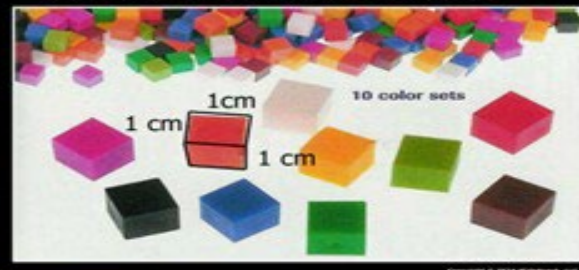
- 1 cubic centimeter of water weighs 1 gram.
- Example 1,000 ml weighs 1,000 grams (1 liter) = (1 kilogram)



- Name one liquid **more dense** than water, and one liquid **less dense** than water?



- Each box is a gram. A gram is the weight of one centimeter cubed full of water.



- Special Relationships

- 1 cubic meter of water has a mass of one ton, thus...
- 1 liter of water weighs 1 kilogram.
- 1 milliliter of water is one cubic centimeter.



- How much is Bowser by water displacement?

Answer?
500 ml



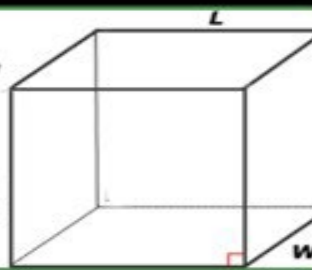
How do you find the volume of a cube?

– Length x Width x Height = ____ cm³

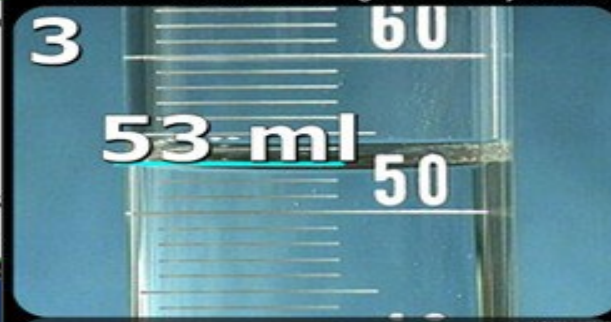
Volume of a Cube

Volume = $L \times W \times h$

For a rectangular solid, multiply the length, width times height.



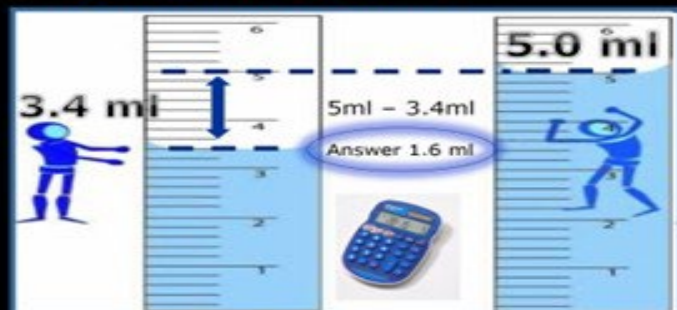
- How much water is in this graduated cylinder?



6 Lessons

Interactive Slideshows

How many milliliters is the toy scuba diver by using water displacement?

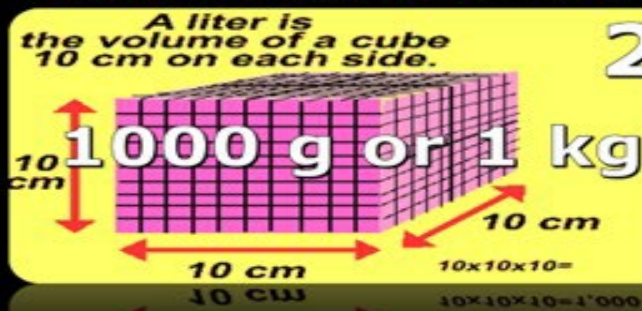


Density How much **mass** is contained in a given **volume**. We use grams/cm³ – (grams per cubic centimeter)



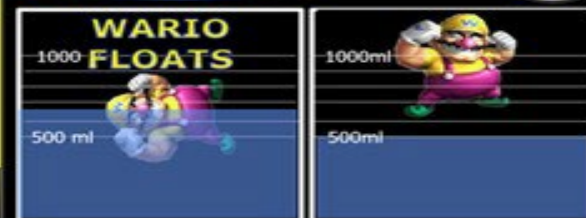
Which two are **extensive physical properties** and which is an **intensive physical property**?

A cube measuring 10 cm, by 10 cm, by 10 cm if filled with water would weigh how much?



What's the Density of Wario? His Mass is 200g

- Density = 200g / 250cm³
- Density = .8 g/cm³



What is the density of this cube?



Which object from the tank below has a density of more than one g/cm³



Volume and Density Quiz 1-10 + Bonus. 10 points each, bonus +5 points.

Volume and Density Quiz

Please show your work in the boxes.

Q	A
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Bonus: Each question is 10 points.

Follow Along Bundle

Part 2 Properties of Matter

Part 2 Mass and Volume Lesson
Mass: The amount of _____ in an object. Weight has to do with gravity. On earth, mass and weight are the same.
 The standard unit of mass in the metric system is the _____.

Special Relationships:
 1 cubic meter of water has a mass of one ton, thus...
 1 liter of water weighs 1 kilogram.
 1 milliliter of water is one cubic centimeter.

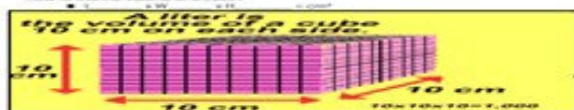
Merito Task: A cubic meter filled with _____ or 1,000 kilograms.
 Area of focus: Volume, Mass, 1

Volume: The three-dimensional _____ an object occupies.
 Volume is also the space that matter occupies.

Always measure a liquid at the bottom of the _____.



How to find the volume of a cube?

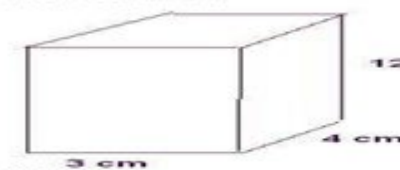


Find the volume of this cube?



Answer = _____ cm³

Find the volume of this rectangle?



Answer = _____ cm³

Find the volume of this rectangle? Each unit is 1 cm.



Brand of Soda	Sodium mg	Calories	Sugar g	Mass g	Volume, mL	?

Def Lesson 2 Mass and Volume

Part 2 Lesson 2 Mass and Volume

Density: How much _____ is contained in a given _____ We use grams/cm³ (grams per cubic centimeter).
 Density = mass ÷ volume

Mass _____ grams/cm³
 Volume _____

What's the density of this cube if it weighs 100 grams?



Answer = _____ g/cm³

Please determine the densities of the following characters. Who's most dense?

Donkey Kong M = 55 g V = 30 cm ³	Yoshi M = 12 g V = 8 cm ³	Luigi M = 5g V = 10 cm ³
Goomba M = 8g V = 6 cm ³	Wario M = 10g V = 10 cm ³	

Answer: Who's the most dense?

An object will float in _____ than water = _____

Density of less than one = _____

Density of more than one = _____

What is the density of an object whose mass is 500 grams and displaces 250 ml of water?

What is the density of an object whose mass is 200 grams and displaces 250 ml of water?

Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

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Will the object float in water? Yes / No

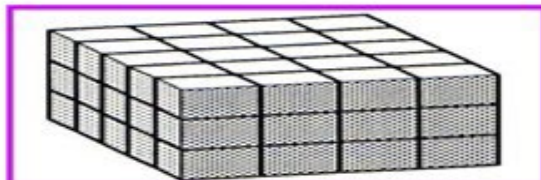
Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

Will the object float in water? Yes / No

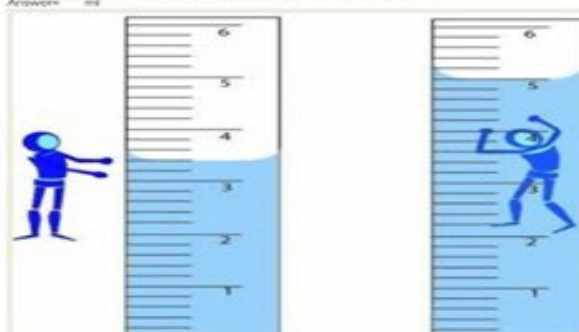
Will the object float in water? Yes / No



Answer = _____ cm³

How many milliliters is the toy scuba diver by using water displacement?

Answer = _____ mL



6 Pages

Activities, Assessments, Keys, and more all built-in

- Demo: Magic Ice Cube? (Optional)
 - Teacher will place ice cubes into the two different containers filled with fluid.
 - Observe what happened and try to explain.

Ethyl Alcohol has a density of $.79 \text{ g/cm}^3$

Water has a density of 1 g/cm^3

Materials less dense than ethyl alcohol will float in it, while materials more dense will sink.

• Which one will float in water? Diet Coke

Brand of Soda	Sodium	Calories	Sugar	Mass	Volume, H ₂ O
Coke	45mg	140	39g	388g	375 ml
Sunkist	70mg	190	50g	387g	375 ml
Mt. Dew	65mg	170	46g	387g	375 ml
Diet Coke	45mg	0	0	370g	375 ml
Sprite	60mg	140	38g	380g	375 ml
					375 ml

• Demonstration: "Magic" Salt?

- Teacher to place eggs into two clear containers filled with water.
- Next teacher adds salt to one of the container stirring periodically.
- What happened? Why?

Density of Water Increased
(Egg is now less dense than the water)

Tap Water **High Salt** **Med. Salt**

- Layering liquids with different densities.
- Use a clear container and add the following in this order....
 - Corn Syrup
 - Water (food Coloring)
 - Vegetable Oil

Note: When pouring avoid getting on the side.



05/27/16 07:48:47
UNITS CALIBRATE

0.000 g

ational Worksheet. Density A-L

- Density: Is how much mass is contained in a given volume. We use grams/cm³ – (grams per cubic centimeter)

What is the formula for finding density?



- Activity (Optional) Finding density.
 - Go back to the irregular shaped objects them in grams and determine their dens
 - Which objects will float, and which will sink?
 - Remember your answer is in grams / cm³

Density A-L Sheet

Density A-Z Name _____

Find the density of the mystery objects labeled A-Z. Please use multiple scales and balances and methods to find volume. Record the data.

Remember! Density = Mass divided by Volume. Density = Mass / Volume

First Mass using a Triple Beam balance, Digital Balance, Scale, Kitchen Scale or any other scale you have.

Then Volume using a graduated cylinder or any other volume measuring device.

Then Density = Mass / Volume

Equal Balance

Digital Balance

Triple Balance

- What's the volume of this rectangle?

4

$2 \text{ cm} \times 3 \text{ cm} \times 4 \text{ cm} = 24 \text{ cm}^3$

24 cm³

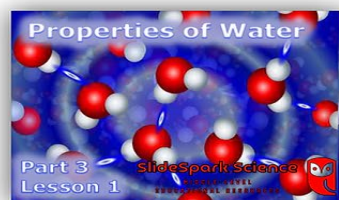
2 cm

3 cm

4 cm

Part 3: Properties of Water, The Water Molecule, Polar and Non-polar molecules, Volatility Activity with Alcohol vs. Water, Making a Lava Lamp Activity, Oil Spill at Sea Clean Up Project, Properties of Water, Cohesion, Adhesion, Water Drops on a Penny Activity, Capillary Action, Paper Chromatography Activity with filter paper, Capillary Action, Surface Tension, Swirly Milk Activity, High Specific Heat of Water, The Gulf Stream, Ocean Currents, Water Cycle, Terms of the Water Cycle, Condensation, Precipitation, Evaporation High Specific Heat, Ice Cube Tray Activity, Neutral pH, Acids, Bases, Acid Base Activity, Lower Density of Ice, Water is the Universal Solvent, Mixtures, Homogeneous Mixtures, Heterogeneous Mixtures, Mixture Activity, Solutions, Solvent, Solute, Supersaturation, Soda Store Project where Students Make and market and brand of Soda to Scientists.

Water Unit Part 3



Part 3 Lesson 1 Structure of Water



Part 3 Lesson 2 Polarity Lava Lamp



Part 3 Lesson 3 Oil Spill at Sea



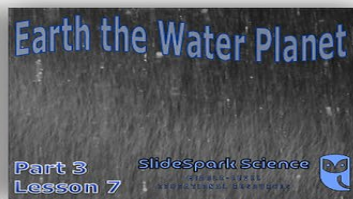
Part 3 Lesson 4 Adhesion Cohesion



Part 3 Lesson 5 Surface Tension



Part 3 Lesson 6 Specific Heat



Part 3 Lesson 7 Water Cycle two days



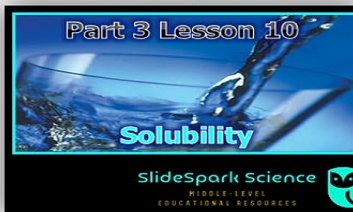
Part 3 Lesson 8 Lake Turnover



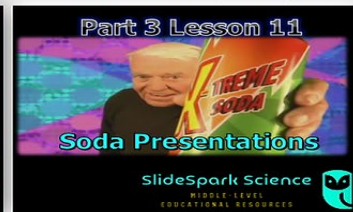
Part 3 Lesson 9 Acids and Bases



Part 3 Lesson 10 Acid Rain



Part 3 Lesson 11 Solubility two days



Part 3 Lesson 12 Soda Store



Part 3 Lesson 13 Quiz Wrap Up



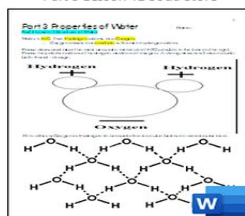
Part 3 Lesson 14 Review Game



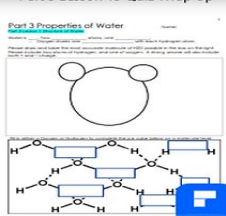
Part 3 Lesson 15 Review Game Answers



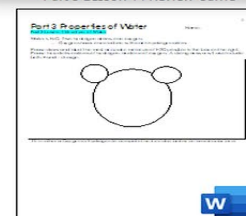
Part 3 Materials List



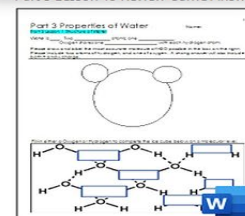
Part 3 Work Bundle Answers



Part 3 Work Bundle pdf Writable



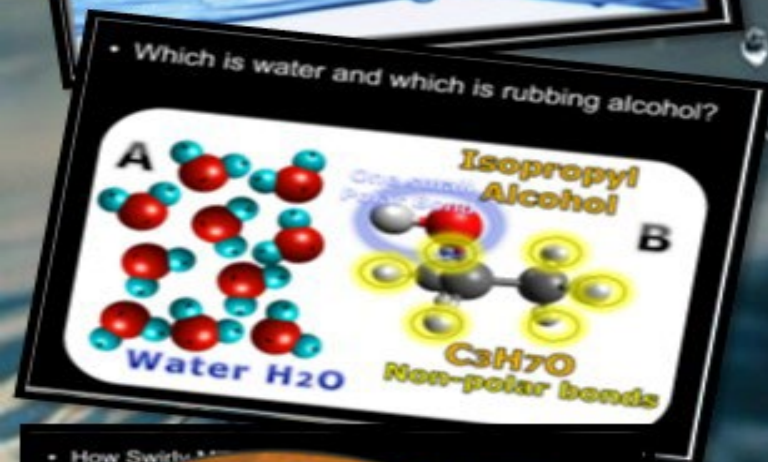
Part 3 Work Bundle Print with Notes



Part 3 Work Bundle Print

Properties of Water

Preview is a compressed file



• Activity! What evaporates faster? A polar or non-polar molecule.

- Place a sheet of brown paper towel on your table.
- Place two drops of water on the paper towel next to two drops of rubbing alcohol.
- If you can do it at the same time that would make the test more fair.
- Record the time it takes for the wet mark made by the drops to disappear on the towel.

Water	Rubbing Alcohol

15 Lessons

Full of hands-on activities

Bluish
Purple
Reddish
Orange
Yellowish
Original
Black

Least Dense

Most Dense

- Does the side of the penny make a difference? Heads vs. Tails.

Trial	1	2	3
Water	Could compare water and rubbing alcohol?		
Rubbing Alcohol			

Average Heads -
Average Tails -

- Fireworks in a bottle.
 - What happened? Why?
 - Food coloring can dissolve in water (polar) but not in oil (non-polar). The oil is less dense than the water, so it stays at the top. The colored droplets (water) sink because they are more dense than the oil. Once they sink into the water, they tend to mix into the water.



- Activity! (Optional)

Water level higher

Water level higher



- Activity! "Ahh-Muk"
 - Group will try to do
 - Use the tools provided
 - Answer Questions after activity.
 - Learn more at... <http://www.nationalgeographic.com/educator-resources/oil-spills/activity/oil-spill-cleanup/>



"Muck" Oil Spill Set-up

Cotton Detergent

Dropper

Sea Creature

Tray and Water

Oil Spill (Vegetable Oil)
Oil Containment (Cup)

Group Roles



Marketer



Graphic Designer

President



Taste Chemist



Water molecules attach to each other which gives the dome of water some strength.

Gravity



25 Page Work Bundle

Data Collection

Chronologically follows
entire unit with built-in
assessments

The hydrologic cycle (Water Cycle) The continuous movement of water **in, on, and above** the surface of the earth.

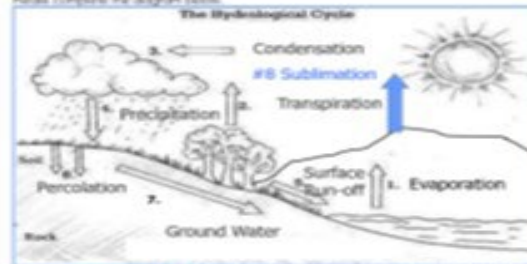
Please complete the diagram below on the water cycle as described in the directions.



Evaporation... Substance changes from a **liquid** state to a **gas** state requires energy.
 Condensation... Water vapor (gas) turns back to a **liquid** state requires cooling... cloud formation.

Precipitation... Water that is too heavy it **falls** as rain or snow.

Please complete the diagram below.



For a liquid to water turnover

Lower Density of **ice**... Water turns to **ice** when it freezes which is less dense than water... ice floats.

Lake turnover

- 1. Fall... Air temperatures drop, and the upper layers of water get cold.
- 2. Wind and chop in the upper layers as well.
- 3. Upper water layer and bottom layers mix.

For a solution to acid rain

Acid rain is caused by **sulfur** and **nitrogen** dioxide... Air pollution (smog) causing the rain to become slightly more acidic, this has a negative impact on **plants** and **animals**. Organisms... Sketch out the diagram of acid rain below as described in the directions.



For a solution to acid rain

Matter: Anything that has **mass** and takes up **space**.

Element: A substance that is made entirely from one type of **atom**.

Compound: Made up of **two** or more elements bonded together.

Mix: It is a measurement of the **amount** of matter something contains.

Weight: It is the force of gravity.

Volume: It is the amount of space an object takes up.

Which of the following drawings are of an element, and which is of a compound? Describe your reasoning in the spaces around each picture.



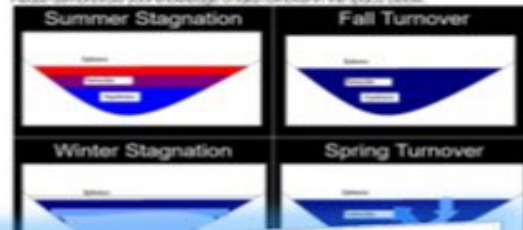
Homogeneous mixture: **same** molecules throughout.

Heterogeneous: A mixture of **two** or more compounds.

Summer Stagnation in a Lake



Please demonstrate your knowledge of lake turnover in the space below.



Give why 1.0 is homogeneous or heterogeneous.

1.0	homogeneous	2.0	homogeneous	3.0	homogeneous
4.0	homogeneous	5.0	homogeneous	6.0	homogeneous
7.0	homogeneous	8.0	homogeneous	9.0	homogeneous

For a solution to acid rain

Solvent: A substance that does the **dissolving** (usually larger amount / water).
 Solute: The substance that gets dissolved (usually **smaller** amount).
 Solubility: How much **solute** can dissolve in a substance before it becomes saturated.
 Supersaturated: When no more solute will **dissolve** (crystals become visible).
 SOCA 2008: Make a brand of acids for scientists. Please describe your solution using some science terminology below. Be prepared to present your acids.

Group members and Role President, Graphic Designer, Sales Chemist, Secretary

Name of your School: _____ Name of your teacher: _____

Color of your label: _____ How are you going to get that color? _____

Flavor of your label: _____ Taste of your label: _____

Ingredients (dry solids only) No pharmaceuticals etc.: Amount of sugar in grams _____

Your label / angle / presentation / Your label, use the space below to prepare.

You must include the word solution, solvent, solute, solubility.

How did it happen? What would you do differently next time?

Answer Keys, Games, Editable, Everything you need is included

Possible Answers

1.0: 1.0 is homogeneous, 2.0: 2.0 is homogeneous, 3.0: 3.0 is homogeneous, 4.0: 4.0 is homogeneous, 5.0: 5.0 is homogeneous, 6.0: 6.0 is homogeneous, 7.0: 7.0 is homogeneous, 8.0: 8.0 is homogeneous, 9.0: 9.0 is homogeneous.

10.0: 10.0 is homogeneous, 11.0: 11.0 is homogeneous, 12.0: 12.0 is homogeneous, 13.0: 13.0 is homogeneous, 14.0: 14.0 is homogeneous, 15.0: 15.0 is homogeneous, 16.0: 16.0 is homogeneous, 17.0: 17.0 is homogeneous, 18.0: 18.0 is homogeneous, 19.0: 19.0 is homogeneous.

20.0: 20.0 is homogeneous, 21.0: 21.0 is homogeneous, 22.0: 22.0 is homogeneous, 23.0: 23.0 is homogeneous, 24.0: 24.0 is homogeneous, 25.0: 25.0 is homogeneous, 26.0: 26.0 is homogeneous, 27.0: 27.0 is homogeneous, 28.0: 28.0 is homogeneous, 29.0: 29.0 is homogeneous.

30.0: 30.0 is homogeneous, 31.0: 31.0 is homogeneous, 32.0: 32.0 is homogeneous, 33.0: 33.0 is homogeneous, 34.0: 34.0 is homogeneous, 35.0: 35.0 is homogeneous, 36.0: 36.0 is homogeneous, 37.0: 37.0 is homogeneous, 38.0: 38.0 is homogeneous, 39.0: 39.0 is homogeneous.

40.0: 40.0 is homogeneous, 41.0: 41.0 is homogeneous, 42.0: 42.0 is homogeneous, 43.0: 43.0 is homogeneous, 44.0: 44.0 is homogeneous, 45.0: 45.0 is homogeneous, 46.0: 46.0 is homogeneous, 47.0: 47.0 is homogeneous, 48.0: 48.0 is homogeneous, 49.0: 49.0 is homogeneous.

50.0: 50.0 is homogeneous, 51.0: 51.0 is homogeneous, 52.0: 52.0 is homogeneous, 53.0: 53.0 is homogeneous, 54.0: 54.0 is homogeneous, 55.0: 55.0 is homogeneous, 56.0: 56.0 is homogeneous, 57.0: 57.0 is homogeneous, 58.0: 58.0 is homogeneous, 59.0: 59.0 is homogeneous.

60.0: 60.0 is homogeneous, 61.0: 61.0 is homogeneous, 62.0: 62.0 is homogeneous, 63.0: 63.0 is homogeneous, 64.0: 64.0 is homogeneous, 65.0: 65.0 is homogeneous, 66.0: 66.0 is homogeneous, 67.0: 67.0 is homogeneous, 68.0: 68.0 is homogeneous, 69.0: 69.0 is homogeneous.

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Curriculum Guide

Number of Lessons in each unit (50 min, daily lessons) and difficult rating scale / intended grade level.

 =Easier,

 = More difficult,

 =Most difficult

Earth Science Units	Daily Lessons	Intended Grade	
Geology Topics Unit	60 Lessons	6-8 medium difficulty	
Weather and Climate Unit	40 Lessons	6-8 medium difficulty	
Astronomy Unit	60 Lessons	6-8 medium difficulty	
Weathering, Soil Sciences	28 Lessons	5-7 easier	
Rivers and Water Quality	25 Lessons	5-7 easier	
Water Molecule Unit	20 Lessons	5-7 easier	
Biogeochemical Cycles Unit	16 Lessons	5-7 easier	

Earth Science Curriculum

SlideSpark Science

MIDDLE-LEVEL
EDUCATIONAL RESOURCES



Entire Water Unit

27 Lessons

Rivers, Lakes, Water Quality Unit

20+ Lessons

7 Units • 250 Lessons

Interactive Slideshows with Chronological Work Bundles
Hundreds of Pages, Activities, Projects, Videos, Academic Links, Assessments, Games & Keys All Built-In for Seamless, Ready-to-Go Learning

Biogeochemical Cycles

17 Lessons

GEOLOGY Mega Bundle

6 Parts, 60 Lessons

Weathering, Soil Science, Ice Ages, Glaciers Unit

5 Parts 36 Lessons

Interactive Slideshows Follow Along Bundles

Weather and Climate Mega Bundle

40 Lessons

7 Units









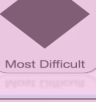

Astronomy Mega Bundle

60 Lessons

7 Units

Grades 5-10

Life Science Units

Life Science Units	Daily Lessons	Intended Grade	
Ecology Feeding Levels Unit	13 Lessons	5-6 easier	
Ecology Interactions Unit	30 Lessons	5-6 easier	
Ecology Abiotic Factors Unit	13 Lessons	5-6 easier	
Botany Unit	50 Lessons	5-7 easier	
Evolution and Natural Selection	40 Lessons	5-7 easier	
Taxonomy and Classification	50 Lessons	6-8 medium difficulty	
Infectious Diseases Unit	30 Lessons	7-9 more difficult	
DNA and Genetics Unit	42 Lessons	8-10 most difficult	
Human Body Systems Unit	85 Lessons	6-8 medium difficulty	
Cell Biology Unit	30 Lessons	8-10 most difficult	

Life Science Curriculum

SlideSpark Science

MIDDLE-LEVEL
EDUCATIONAL RESOURCES



Interactive Slideshows Follow Along Bundles

10 Units of Study



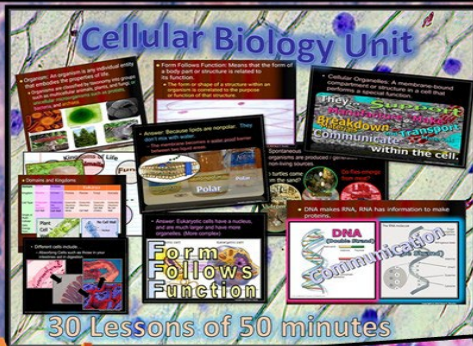
Botany Unit



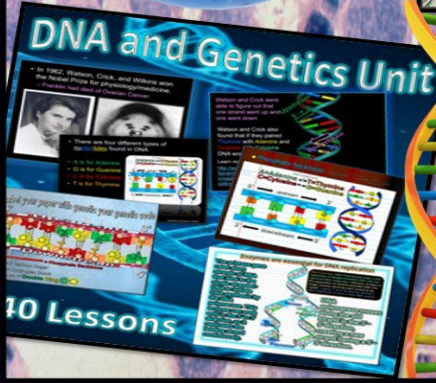
Human Body Systems Unit



Cellular Biology Unit



DNA and Genetics Unit



Infectious Diseases



Taxonomy and Classification Unit



Ecology Interactions Unit




Ecology Feeding Level Full Unit



Ecology Abiotic Factors Unit



Physical Science

	Daily Lessons	Intended Grade	
Laws of Motion and Machines Unit	33 Lessons	8-10 most difficult	
Matter Energy and the Environment	58 Lessons	7-10 medium difficulty	
Atoms and Periodic Table Unit	44 Lessons	8-10 most difficult	
Science Skills Unit	30 Lessons	5-7 medium difficulty	

[Physical Science Curriculum](#)

[Entire SlideSpark Science Curriculum](#)



Physical Science Curriculum

SlideSpark Science

MIDDLE-LEVEL
EDUCATIONAL RESOURCES



Science Skills Unit

5 Parts, 30 Lessons

Physical Science Curriculum,
4 Units • 165 Lessons of 50
mins, Interactive Slideshows
with Chronological Work
Bundles, Hundreds of Pages,
Activities, Labs, Projects,
Video & Academic Links,
Assessments, Games, Keys,
All Built-In for Seamless
Ready-to-Go Learning

Thousands of Interactive Slides

67 Pages of Follow Along
Work Bundle

Assessments, Games,
Video Links, and more

Everything you need to run an
amazing learning experience

Interactive Slideshows Follow Along Bundles

Grades 7-10

Laws of Motion and
Simple Machines Unit

33 Lessons

Interactive
Slideshows

With Follow Along
Work Bundles

63 Pages

Assessments, Activities,
Projects, and so much more

Atoms and Periodic Table Unit

6 Parts, 44 Lessons

Thousands of Interactive Slides

Follow Along Work Bundles

108 Pages, with labs,
quizzes, more, all built-in

Exciting Activities, Questions,
Videos, All built-in

Matter and Energy and the Environment Unit

58 Lessons

Interactive Slideshows

with Follow Along Work Bundles

125 Pages

Activities, Assessments,
and more, all built-in

Dear Valued Educator,

Our fully editable .pptx and .doc resources are perfect for educators looking to bring enthusiasm and creativity to their lessons. We encourage you to make changes to fit your needs and style. As science educators, we're committed to providing students with the tools they need to succeed in the classroom and beyond. Each unit in the curriculum includes a range of resources that have been developed through extensive research and use in a busy classroom. Our teaching approach is designed to make science education engaging and exciting for learners of all ages. We offer a one-of-a-kind science curriculum that will challenge, inspire, and educate students to become tomorrow's scientists and leaders. Join us today and learn more about how our program can help you achieve your classroom goals.

With appreciation,

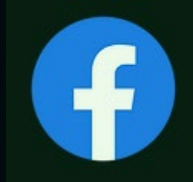
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Thank you for your time and interest in our Science curriculum. We strive to provide students with engaging and informative lessons that will spark their curiosity and encourage scientific exploration. Should you have any questions or concerns, please do not hesitate to contact us. Thank you again for considering our curriculum, and we wish you all the best in your educational journey.

Sincerely,

Support@slidespark.net



SlideSpark Science

MIDDLE-LEVEL
EDUCATIONAL RESOURCES



[SlideSpark Science on TpT](#)