

Chapit 7: Pwopriyete dlo	Unit 7: Properties of Water
<p>Ide Kle:</p> <p>7.1 Obsève, dekri epi fè rechèch sou pwopriyete fizik dlo.</p> <p>7.2 Fè rechèch sou efè diferan faktè ki genyen sou evaporasyon.</p> <p>7.3 Dekri sik idwolojik la.</p> <p>7.4 Teste kèk bagay pou ou wè si yo koule oswa si yo flote.</p> <p>7.5 Predi, obsève epi egzamine diferan sibstans pou ou wè si yo kapab melanje ak dlo.</p> <p>7.6 Egzamine epi dekri transfòmasyon matyè soti nan yon eta ale nan yon lòt.</p> <p>7.7 Predi/fè rechèch sou efè enèji tèmik gen sou matyè.</p> <p>7.8 Dekri chanjman fizik nan matyè.</p>	<p>Key Ideas:</p> <p>7.1 Observe, describe, and explore the physical properties of water.</p> <p>7.2 Explore how different factors affect evaporation.</p> <p>7.3 Describe the Water Cycle.</p> <p>7.4 Test objects to determine whether they sink or float.</p> <p>7.5 Predict, observe, and examine different substances to determine their ability to mix with water.</p> <p>7.6 Examine and describe the transformation of matter from one state to another.</p> <p>7.7 Predict and investigate the effect of heat energy on objects and materials.</p> <p>7.8 Describe the physical changes of materials</p>
Rezime chapit la	Unit Overview
<p>Dlo se sibstans ki pi enpòtan sou Latè. San li, pa tap gen plant, pa tap gen bèt, pa tap gen lavi. Gen apeprè 85% dlo nan sèvo moun. Si ou pèdi 10% nan dlo ki nan kò ou, ou pap kapab mache. Si ou pèdi 20% nan dlo ki nan kò ou, ou ap mouri.</p> <p>Kòm nou toujou ap pèdi yon pati nan dlo ki nan kò nou, nou dwe bwè plis pou nou ranplase dlo nou pèdi a. Malgre tout kantite dlo ki gen sou Latè, 97% nan dlo sa a fè pati de oseyan yo epi dlo sa a twò sale pou nou bwè. Pifò dlo dous ki genyen konjele sou fòm glasye nan zòn pole yo. Malgre sa, gen anpil dlo ozalantou nou (pifò kote antouka) sou fòm rivyè ak lak, anwo ak anba tè a. Lè nou sèvi ak dlo sa a, pwosesis natirèl ki fè pati de sik idwolojik la ranplase l.</p> <p>Dlo gen anpil pwopriyete ki dwòl; se yon konpoze</p>	<p>Water is the most important substance on Earth. Without it, there would be no plants, no animals, and no life. The human brain is approximately 85% water, and if you lost 10% of the water in your body you would not be able to walk. A loss of 20% would be fatal.</p> <p>As we are constantly losing water we need to take in more to replace it. Although there is a huge amount of water on Earth, 97% of it is in the oceans and far too salty to drink. Of the fresh water, most is frozen in the polar ice caps. Even so, there is plenty of water around (in most places anyway) in the form of rivers and lakes, both above and below ground. As we use this water, it is replaced by natural processes as part of the water cycle.</p> <p>Water has many unusual properties and it is a</p>

chimik espesyal paske anpil sibstans fonn ladann.	special compound because many substances dissolve in it.
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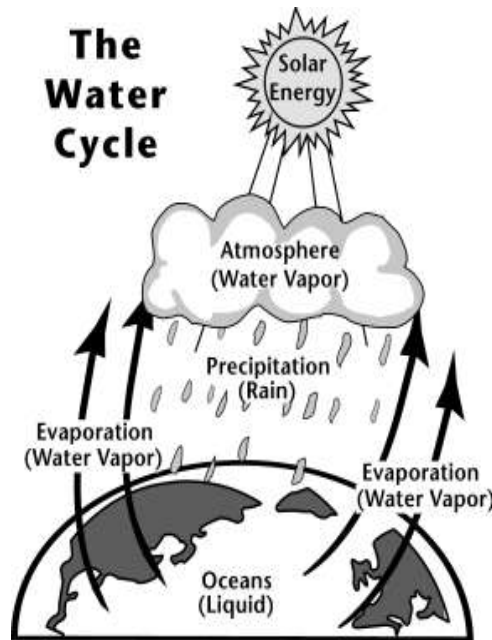
Chapit 7: Pwopriyete dlo	Unit 7: Properties of Water
Kesyon esansyèl: Kisa ki fè dlo si tèlman espesyal?	Essential Question: What makes water so special?
Ide Kle: Obsève, dekri epi fè rechèch sou pwopriyete fizik dlo.	Key Idea 7.1: Observe, describe, and explore the physical properties of water.
Tèm syantifik: 1. matyè 2. eta matyè 3. solid 4. likid 5. gaz 6. volim	Scientific Terms: 1. matter 2. state of matter 3. solid 4. liquid 5. gas 6. volume
<p>Enfòmasyon: Tout sa ki ozalantou nou se matyè. Biwo, lòt moun, lè ak dlo nou bwè nan yon fontenn, tout se diferan kalite matyè. Matyè vin sou diferan fòm ki rele eta. Nou obsève twa eta matyè: solid, likid ak gaz.</p> <p>Lè matyè solid, li kenbe fòm li. Volim li, se espas li pran, li rete menm jan an.</p> <p>Lè matyè likid, fòm li kapab chanje, men volim li rete menm jan. Egzanp, nou ka chanje fòm dlo ki nan yon vè lè nou vide l nan yon sachè plastik. Sachè plastik la kenbe dlo ki soti nan vè a. Volim dlo a rete menm jan, men fòm li chanje.</p> <p>Lè matyè sou fòm gaz, li pa kapab kenbe fòm oswa volim li. Lè fèt ak diferan kalite gaz. Lè ou mete lè nan yon balon, lè a pran fòm balon an. Lè ou kite lè a soti nan balon an, gaz la gaye toutotou ou epi li pran plis espas.</p>	<p>Content: Everything around you is matter. Your desk, other people, the air, and the water in the drinking fountain are all different kinds of matter. Matter has different forms, called states. The three states of matter we can observe are solids, liquids, and gases.</p> <p>When matter is solid, it holds its shape. Its volume, which is the space it fills, stays the same.</p> <p>When matter is a liquid, its shape can change, but its volume stays the same. For example, we can change the shape of water in a glass by pouring it into a plastic bag. The plastic bag holds the water from the glass. The water's volume is the same, but its shape has changed.</p> <p>When matter is a gas, it cannot hold its shape or its volume. Air is made up of different kinds of gases. After you put air in balloons, the air takes the shape of the balloon. When you let the air out of the balloon, the gases in the air spread out around you and take up more space.</p>
<p>Revizyon:</p> <ol style="list-style-type: none"> 1. Kilès nan twa eta matyè yo ki pa kapab kenbe fòm li oswa volim li? 2. Si ou pran yon likid yon boutèy ki byen wo epi ou vide l nan yon kaswòl ki pa fon, eske fòm oswa volim likid la chanje? 3. Konpare pwopriyete solid, pwopriyete likid ak pwopriyete gaz. 	<p>Review:</p> <ol style="list-style-type: none"> 1. Which of the three states of matter cannot hold shape or volume? 2. If a liquid is poured from a tall bottle into a shallow pan, does its shape or volume change? 3. Compare the properties of solids, liquids, and gases.

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Kesyon esansyèl: Kisa ki fè dlo si tèlman espesyal?	Essential Question: What makes water so special?
Ide Kle 7.2: Fè rechèch sou fason diferan faktè afekte evaporasyon.	Key Idea 7.2: Explore how different factors affect evaporation.
Tèm syantifik: 1. molekil 2. vapè dlo 3. evaporasyon 4. imidite 5. kondansasyon	Scientific Terms: 1. molecule 2. water vapor 3. evaporation 4. humidity 5. condensation
Enfòmasyon: Molekil dlo toujou an mouvman. Sou sifas dlo a, molekil ki anba yo pouse molekil ki anlè yo. Kon sa, molekil ki anlè yo vin gen ase vitès pou yo kite sifas dlo a epi pou yo chape nan lè a kòm gaz (vapè dlo). Lè molekil ki sou sifas dlo a chape nan lè a, yo rele sa evaporasyon . Sa vle di yon chanjman eta, soti nan likid ale nan gaz. Evaporasyon fèt toutan nan nenpòt tanperati. Plis tanperati a wo, plis to evaporasyon an wo. Lè tanperati dlo ogmante (pa egzanp, klere yon pwojekte pisan sou li), molekil yo vin gen plis enèji, yo deplase pi vit epi chape a yon vitès pi rapid. Lè evaporasyon ap fèt, vapè dlo rasanble anlè sifas dlo a. Lè gen van, vapè dlo a ale tousuit apre li fèt. Sa bay espas pou plis molekil chape nan lè a. Plis van an fò, plis to evaporasyon an wo. Dlo ki alasifas nan yon bòl an kontak dirèk avèk lè a. Se sèlman yon ti fraksyon nan tout kantite dlo ki nan bòl la. Si dlo a tonbe sou yon tab, preske tout dlo a ap an kontak ak lè a. Lè dlo a pran plis espas, plis chalè ak van antre an kontak ak molekil dlo yo a nenpòt ki moman. Pakonsekan, to evaporasyon nan dlo ki gaye a pi elve pase to evaporasyon dlo ki nan bòl la. Plis ou gen yon pi gwo sifas, plis to evaporasyon an wo. Si dlo evapore nan yon vesò ki byen fèmen kote lè pa kapab pase, espas ki anwo dlo a ap plen ak anpil vapè dlo. Lè lè a gen anpil vapè dlo, imidite a wo. Imidite se kantite vapè dlo ki nan lè a. Lè	Content: Water molecules are always moving. At the water's surface, some molecules are bumped by molecules below them and gain enough speed to break free and escape into the air as gas (water vapor). This escape of surface molecules is called evaporation . It involves a change of state, from liquid to gas. Evaporation takes place all the time and at any temperature. The higher the temperature, the higher the rate of evaporation. When the temperature of water is increased (e.g. shining a powerful spotlight on it), the water molecules gain more energy, move faster and escape at a faster rate. When evaporation takes place, the water vapor gathers above the water's surface. When it is windy, the water vapor is removed as soon as it is formed. This makes space for more water molecules to escape into the air. The stronger the wind, the higher the rate of evaporation. The surface area of the water in a bowl is in direct contact with the air. This is only a small fraction of the total amount of water in the bowl. If the water is spilled onto the table, almost all of the water is exposed to the air. With a larger exposed area, more heat and wind can come into contact with the water molecules at any time. Therefore, the rate of evaporation is higher than that of the water in the bowl. The larger the exposed surface area, the higher the rate of evaporation. If water evaporates in an air-tight container, the space above the water is filled with more and more water vapor. When the air contains a lot of

<p>imidite a wo, li pi difisil pou dlo evapore. Se kòm si lè a plen e li pa gen apeti pou plis vapè dlo. Donk, lè a vin "manje", mwens nan yon tan done e sa lakòz to evaporasyon an diminye. Si espas anlè dlo an plen nèt ak vapè dlo, evaporasyon vin an ekilib ak pwosesis opoze a ki se kondansasyon.</p>	<p>water vapor, humidity is high. Humidity refers to the amount of water vapor in the air. When humidity is high, it is more difficult for water to evaporate. It is like the air is full and not hungry for more water vapor. Thus the air will “eat” less at one time, resulting in a slower rate of evaporation. If the space above the water becomes completely filled with water vapor, then evaporation is balanced by the opposite process, condensation.</p>
<p>Revizyon:</p> <ol style="list-style-type: none"> 1. Pou ki sa ou santi ou fre lè ou kanpe akote yon ventilatè? 2. Ki faktè ki afekte to evaporasyon? 3. Pou ki sa nou dwe tann rad mouye pou yo seche? 4. Lè nou vle bouyi dlo pi vit, èske nou dwe louvri oswa fèmen kouvèti a? Pou ki sa? 	<p>Review:</p> <ol style="list-style-type: none"> 1. Why do you feel cool when you stand next to a fan? 2. What factors affect the rate of evaporation? 3. Why should we spread out our wet clothes to dry? 4. When we want to boil water faster, should we open or close the lid? Why?

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Kesyon esansyèl: Ki sa ki fè dlo si tèlman espesyal?	Essential Question: What makes water so special?
Ide Kle: 7.3: Dekri sik idwolojik la.	Key Idea 7.3: Describe the Water Cycle.
Tèm syantifik: 1.presipitasyon 2. sik idwolojik 3.evaporasyon 4.vapè dlo 5. kondansasyon 6. lapli 7. grezil 8. lanèj 9. lagrèl 10. dlo risèlman 11. dlo souteren	Scientific Terms: 1 precipitation. 2. water cycle 3. evaporation 4. water vapor 5. condensation 6. rain 7. sleet 8. snow 9. hail 10. runoff 11. groundwater
Enfòmasyon: Ki sa ki tap rive si tout dlo ki gen sou latè te rete nan oseyan yo? Ki kote tè a tap jwenn dlo pou plant yo pouse? Ki sa bèt yo tap bwè? Erezman, dlo deplase ale toupataou. Presipitasyon ki tonbe sou latè pa yon dlo ki nouvo. Se menm dlo a ki resikle toutan nan yon ale vini ant tè a ak lè a. Enèji solèy la lakòz sa yo rele sik idwolojik la. Dlo egziste nan twa eta: gaz, likid, ak solid. Chalè solèy la chofe dlo likid sou latè, sa ki lakòz evaporasyon . Dlo likid tounen vapè dlo ki envisib. Vapè dlo a monte byen wo nan cyèl la kote tanperati a pi ba. Se la kondansasyon fèt. Tanperati ki ba a fè vapè dlo a tounen yon bann ti gout dlo likid. Se ti gout dlo sa yo ki fè nyaj yo. Lapli, grezil, lanèj, ak lagrèl se diferan fòm presipitasyon ki soti nan nyaj yo epi ki tonbe sou latè. Kòm van an pouse nyaj yo ak tanpèt yo lòt kote, byen souvan dlo a tonbe yon kote ki diferan parapò ak kote li evapore an. Si vapè dlo konjle, se lanèj ki tonbe. Si lapli konjle lè l ap desann, se grezil ki tonbe. Lè lanèj oswa lapli lakòz mòso glas fèt nan nyaj yo, se lagrèl ki tonbe. Lè dlo tonbe sou latè li pa rete yon sèl kote. Yon bon pòsyon dlo ki sou tè a oubyen nan ma dlo evapore touswit. Rès dlo a filtre anndan tè a pou li fè yon nap freyatik , oswa li kouri toutolon tè a	Content: What would happen if all the water on Earth stayed in the oceans? How would the land get water to grow plants? What would land animals drink? Fortunately, water moves around. Precipitation that falls to Earth is not new water. The same water is constantly recycled through the Earth and the air. The Sun's energy powers what is called the water cycle . Water exists in three states: gas, liquid, and solid. The Sun heats liquid water on Earth, causing evaporation , turning it into invisible water vapor . Water vapor rises high above the Earth where temperatures are lower. There, condensation takes place. The lower temperatures turn the water vapor back into tiny drops of liquid water. These tiny drops form clouds. Rain, sleet, snow, and hail are different forms of precipitation and they fall to Earth from the clouds. Because wind moves clouds and storms around, the water often falls in a different place from where it evaporated. If the water vapor freezes, it falls as snow. If rain freezes on the way down, it falls as sleet. When pieces of ice form in the clouds from rain or snow, they fall as hail. Once water lands on Earth, it does not stay in one place. Much of it evaporates from the ground or puddles right away. The rest of the water soaks into the ground as groundwater , or runs along the

<p>kòm dlo risèlman. Dlo risèlman al tonbe nan rivyè yo, ki al devèse nan oseyan yo. Nap freyatik yo deplase dousman nan direksyon rivyè ak oseyan yo.</p> <p>Dlo konsève pou yon tan nan tè a, rivyè, lak, ak oseyan yo, epi kòm glas. Chalè solèy lakòz li evapore, sik la rekòmanse ankò.</p> <p>Akòz sik idwolojik la, tè a wouze epi plant yo pouse. Dlo deplase soti yon kote al nan yon lòt. Konsa moun ak bèt kapab itilize dlo ki soti nan sous, nan kouran dlo, nan rivyè ak nan lak. Moun gen dwa fouye pui pou yo sèvi ak dlo ki nan nap freyatik yo tou.</p>	<p>ground as runoff. Runoff carries water to rivers, which empty themselves into the oceans. Groundwater also moves slowly toward the rivers and oceans.</p> <p>Water is stored for a time in the ground and in rivers, lakes, oceans, and as ice. Then the heat of the Sun causes it to evaporate, and the cycle starts again.</p> <p>Because of the water cycle, the land is watered and plants can grow. Water moves from place to place, so people and animals can use water from springs, streams, river, and lakes. Humans can dig wells and use the groundwater too.</p>
<p>Revizyon:</p> <ol style="list-style-type: none"> 1. Kouman dlo souteren ak dlo k ap koule sou tè sanble? 2. Ki sa ki lakòz kondansasyon vapè dlo? 3. Ki diferans ki genyen ant lanèj ak grezil? 4. Kisa ki lakòz evaporasyon dlo? 5. Si evaporasyon ap fèt toutan, pou ki sa oseyan yo pa seche? 6. Ki sa ki tap rive dlo sou latè si van pa t' pouse lè, nyaj ak tanpèt al lòt kote? 	<p>Review:</p> <ol style="list-style-type: none"> 1. How are groundwater and runoff alike? 2. What causes condensation of water vapor? 3. How are snow and sleet different? 4. What causes evaporation of water? 5. If evaporation is happening all the time, why don't the oceans dry up? 6. What would happen to Earth's water if wind did not move air, clouds, and storms?



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<p>Kesyon esansyèl: Ki sa ki fè dlo si tèlman espesyal?</p>	<p>Essential Question: What makes water so special?</p>
<p>Ide Kle 7.4: Teste kèk bagay pou ou wè si y ap koule oswa si y ap flote.</p>	<p>Key Idea 7.4: Test objects to determine whether they sink or float.</p>
<p>Tèm syantifik: 1. flote 2. koule 3. deplasman 4. mas 5. mas volimik</p>	<p>Scientific Terms: 1. float 2. sink 3. displacement 4. mass 5. density</p>
<p>Enfòmasyon: Lè yon bagay flote, li kapab rete sou sifas yon likid poukont li. Diferan solid, likid, ak gaz kapab flote. Pa egzanp, lyèj ak luil ka flote sou sifas dlo. Gen kèk gaz, tankou elyòm, ki monte, oswa "flote" nan lè a. Lè yon objè koule, li deplase desann ak pezan tèt. Diferan solid, likid, ak gaz koule. Pa egzanp, yon pyès lajan koule nan yon tas dlo. Gaz ki pi lou pase lè, tankou gaz pwopàn ak gaz bitàn kapab koule tou.</p> <p>Deplasman eksplike pou ki sa bagay koule oswa yo flote. Deplasman rive lè ou mete yon bagay nan yon likid, oswa nenpòt sibstans ki kapab</p>	<p>Content: When an object floats, it can stay on the surface of a liquid by itself. Different solids, liquids, and gases can float. For example, both cork and oil will float on the surface of water. Some gases, such as helium, can rise, or “float” in the air. When an object sinks, it moves down with gravity. Different solids, liquids, and gases sink. For example, a solid coin will sink in a cup of water. Gases that are heavier than air, such as propane and butane, can sink as well.</p> <p>Displacement explains why objects sink or float. Displacement occurs when you place something in a fluid, or any substance that flows, and it</p>

<p>koule, epi li deplase likid la pou li pran plas li. Ou kapab obsève deplasman nan travay ou lè ou lage yon bagay nan yon tas dlo epi nivo dlo a monte. Pezantè rale bagay desann, men diferans nan presyon anwo ak anba bagay la lakòz yon fòs ki pouse bagay la monte. Bagay la pouse dlo a a kote, ki fè dlo a monte. Yon bagay koule si li peze plis pase dlo li pouse a kote a; yon bagay flote si li peze mwens pase dlo li pouse a kote a.</p>	<p>moves the fluid out of its way. You can watch displacement at work when you drop an object in a cup of water and the water level rises. Gravity pulls the object down, but the difference in pressure above and below the object causes an upward force. The object pushes the water out of its way, making the water rise. An object will sink if it weighs more than the water it pushes away, and an object will float if it weighs less than the water it pushes away.</p>
<p>Yon matematisyen Grèk, Archimèdes te dekouvri kantite dlo yon bagay deplase depann de mas bagay la. Mas se kantite matyè yon objè gen nan li. Mas volimik (mas divize pa volim) se kantite mas ki nan yon sèten volim yon matyè. Si yon bagay ki solid gen yon pi gwo mas volimik pase dlo, l ap koule. Si yon bagay gen yon mas volimik ki pi piti pase dlo, l ap flote. Pifò moun kapab flote. Mas volimik yo ti kras mwens pase mas volimik dlo.</p>	<p>The Greek mathematician Archimedes discovered that the amount of water displaced by an object depends on the mass of that object. Mass is the amount of material that an object has in it. Density (mass divided by volume) is how much mass is in a certain volume of matter. If a solid object has a greater density than water has, it will sink in water. If an object has a lower density than water has, it will float. Most people can float. Their density is slightly less than the density of water.</p>
<p>Fòm yon bagay kapab fè l flote. Yon boul ajil ap koule, men si ou pran menm kantite ajil sa a epi ou ba l fòm yon ti kannòt l ap flote paske li deplase plis dlo. Kantite lè ki anndan yon bagay kapab fè li flote. Bato flote malgre tout materyo lou ak materyo epè yo itilize pou yo konstui yo, paske gen anpil lè anndan kal bato a. Bagay ki kre, tankou yon boul pingpong oswa yon boutèy plastik vid, kapab flote pi byen pase yon bagay solid.</p>	<p>Shape can also help an object float. A ball of clay will sink, but a canoe shape made from the same amount of clay can float because it displaces more water. The amount of air inside of an object can also help it float. Boats can float despite the heavy and dense materials used to build them because of the large amount of air inside the hull. Hollow objects, such as table tennis balls or an empty plastic bottle, are able to float better than solid objects.</p>
<p>Revizyon:</p> <ol style="list-style-type: none"> 1. Kouman nou fè konnen si yon bagay ap koule oswa si l ap flote? 2. Dekri kouman fòm yon bagay kapab fè l flote. 3. Eksplike pou ki sa kèk bagay ki lou tankou bato flote, tandiske bagay ki relativman pi leje tankou yon pyès lajan koule? 	<p>Review:</p> <ol style="list-style-type: none"> 1. How do we determine if objects sink or float? 2. Describe how shape helps an object float. 3. Explain why some heavy objects like boats float, while relatively lighter objects such as coins sink?

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Ide Kle 7.5: Predi, obsève, epi egzamine diferan sibstans pou ou wè kapasite yo pou melanje ak dlo.	Key Idea 7.5: Predict, observe, and examine different substances to determine their ability to mix with water.
Tèm syantifik: 1. sibstans 2. melanj 3. molekil 4. fonn-deleye 5. solisyon 6. sispansyon	Scientific Terms: 1. substance 2. mixture 3. molecule 4. dissolve 5. solution 6. suspension
Enfòmasyon: Rezen ak moso zoranj, fig ak pòm melanje ansann nan yon salad fwi. Tout fwi yo ansann gen bon gou, men chak moso fwi rete ak pwòp gou pa li. Ou ka separe moso fwi yo byen fasil. Yo pa youn nan lòt pou yo fè yon nouvo sibstans . Yon melanj se de oubyen plizyè sibstans ou mete, oswa melanje ansann men ou kapab separe yo fasil. Chak sibstans ki nan yon melanj kenbe pwòp pwopriyete li. Yon melanj kapab gen diferan kantite nan chak kalite matyè. Pa egzanzp, ou ka fè salad fwi ak nenpòt kalite fwi. Ou ka mete nenpòt kantite moso nan chak kalite fwi nan salad la. Yon solid ak yon likid ka fè yon melanj. Lè ou brase sab nan dlo ou fè melanj yon solid ak yon likid. Tankou tout melanj, sab ak dlo fasil pou separe. Si nou melanje sik ak dlo nan yon vè, sik ak dlo a fè yon melanj. Men, nou pa kapab wè sik la. Molekil sik yo fonn , yo gaye toupatou nan likid la. Yon sibstans ki gaye toupatou nan yon lòt sibstans fè yon solisyon . Ou kapab separe sibstans ki nan yon solisyon fasil. Si dlo a evapore, sik la ap rete nan vè a. Yon bòl fwi pa yon solisyon. Nou ka toujou rekonèt diferan engredyan ki nan bòl fwi a. Sab pa fonn nan dlo, men grenn sab yo tonbe nan fon dlo a. Sab ak dlo pa yon solisyon.	Content: Grapes and pieces of orange, banana, and apple are mixed in a fruit salad. The fruits taste good together, but each piece of fruit keeps its own taste. The pieces of fruit can easily be separated. They do not join together to make a new substance . A mixture is two or more substances that are placed, or mixed, together but can be easily separated. Each substance in a mixture keeps its own properties. A mixture can have different amounts of each kind of matter. For example, you can make fruit salad with any kinds of fruit. You also can use any number of pieces of each kind of fruit. A solid and a liquid can make a mixture. Stirring sand into water makes a mixture of a solid and liquid. Like all mixtures, sand and water are easy to separate. If we mix sugar and water in a glass, sugar and water make a mixture. However, we cannot see the sugar. The molecules of sugar dissolve , or spread evenly, in the liquid. One substance spreading evenly throughout another substance forms a solution . The substances in a solution can be separated easily. If the water evaporates, the sugar is left in the glass. On the other hand, a bowl of fruit salad is not a solution. We can always tell the ingredients apart. Sand doesn't dissolve in water. Instead the grains

<p>Nan kèk melanj, engredyan yo pa gaye toupatou. Lè melanj sa yo chita pou yon tan, kèk nan engredyan yo monte anlè oswa fè fon. Kalite melanj sa a rele sispansyon. Gout luil kapab rete an sispansyon nan dlo. Vinèg ak luil se yon melanj ki fè sòs vinèg pou salad. Nou dwe sekwe li byen; otreman, se ka luil sèlman nou gen nan salad nou an. Nou dwe sekwe boutèy ji zoranj yo tou, paske chè a rete anba boutèy la.</p>	<p>of sand fall to the bottom. Sand in water is not a solution. In some mixtures, the ingredients are not spread out evenly. When these mixtures sit, some of the ingredients rise to the top or sink to the bottom. This kind of mixture is called a suspension. Bits of oil are suspended in water. Vinegar and oil is a mixture that makes salad dressing. We must shake it; otherwise, we might have just oil on our salad. We must shake the orange container too, because the pulp settles at the bottom of the container.</p>
<p>Revizyon:</p> <ol style="list-style-type: none"> 1. Pou ki sa pizza se yon melanj men se pa yon solisyon? 2. Apa sab, bay non de lòt bagay ki pa solib nan dlo. 3. Ki jan ou ka fè konnen si yon melanj se yon sispansyon? 	<p>Review:</p> <ol style="list-style-type: none"> 1. Why is pizza a mixture but not a solution? 2. Name two things besides sand that are not soluble in water. 3. How can you tell whether a mixture is a suspension?

<p>Chapit 7: Pwopriyete dlo</p>	<p>Unit 7: Properties of Water</p>
<p>Kesyon esansyèl: Kisa ki fè dlo si tèlman espesyal?</p>	<p>Essential Question: What makes water so special?</p>
<p>Ide Kle 7.6: Egzamine / dekri transfòmasyon matyè soti nan yon eta ale nan yon lòt.</p>	<p>Key Idea 7.6: Examine and describe the transformation of matter from one state to another.</p>
<p>Tèm syantifik: 1. diminye 2. ogmante 3. vapè</p>	<p>Scientific Terms: 1. decrease 2. increase 3. steam</p>
<p>Enfòmasyon: Dlo se sèl sibstans ki egziste natirèlman nan touletwa eta matyè:</p> <ul style="list-style-type: none"> • Dlo se yon likid lè gen lapli oswa lè li soti nan yon tiyo. • Dlo se yon solid lè li se nèj oswa glas. • Dlo se yon gaz lè chalè fè l tounen vapè dlo envizib nan lè a. <p>Dlo vin solid lè tanperati dlo an diminye epi dlo a konjle pou li tounen glas. Dlo ki nan frizè yon frijidè tounen glas. Dlo tounen gaz lè ou chofe dlo a epi tanperati li ogmante. Ou ka sèvi ak yon recho pou ou chofe dlo ki nan yon kaswòl epi dlo sa a ap tounen vapè dlo. Vapè dlo se yon gaz envizib. Vapè ou wè anwo kaswòl dlo bouyi an se vapè dlo ki kontre ak yon lè ki pi fret, sa vin bay ti gout dlo. Vapè sa a tankou yon ti nwaj. Lè dlo evapore, li tounen vapè dlo. Lè vapè dlo kontre ak yon sifas frèt, tankou yon fenèt ki frèt, li tounen dlo likid. Lè nou pran yon douch cho, nou ka wè vapè a, men tou nou ka menm wè tou ti gout dlo yo sou miwa a. Paske lè vapè dlo kontre ak sifas miwa frèt la, li tounen dlo likid. Solèy la bay chalè ki chofe ma dlo lapli yo epi fè yo tounen vapè dlo. Lè vapè dlo monte anlè, li refwadi epi li tounen ti gout dlo. Se sa ki bay nyaj yo.</p>	<p>Content: Water is the only substance that exists naturally as all three states of matter:</p> <ul style="list-style-type: none"> • Water is a liquid when it rains or flows from a faucet. • Water is a solid when it is snow or frozen ice. • Water is a gas when heat causes it to become invisible water vapor in the air. <p>Water changes into a solid when the temperature of the water decreases and the water freezes into ice. Water in the freezer of a refrigerator turns to ice. Water changes into gas when the water is heated and the temperature increases. The burner on a stove heats water in a pan and the water turns into water vapor. Water vapor is an invisible gas. The steam you see above a pot of boiling water is water vapor moving into colder air and changing into water droplets. This steam is like a small cloud. When the steam evaporates, it changes into water vapor. When water vapor meets a cold surface, such as a cold window, it turns back into liquid water. When we are taking a hot shower, we can see the steam, but we also can see the water droplets on the mirror. Because when the water vapor touches the cold surface, the mirror, it changes into liquid water. The Sun provides the heat that changes rain puddles in to water vapor. When the water vapor rises in the air, it cools, and changes into liquid water droplets that you see as clouds.</p>

Revisyon:

1. Ki sa ki kapab rive si yon gout dlo tonbe son yon fou cho?
2. Ki chanjman k ap rive si ou mete yon moso glas nan dlo bouyi?
3. Vapè dlo se yon gaz envizib. Ki sa vapè ye?

Review:

1. What will most likely happen if a drop of liquid water falls on a hot stove?
2. What change will occur to ice cubes if they are placed into the boiling water?
3. Water vapor is an invisible gas. What is steam?

Chapit 7: Pwopriyete dlo	Unit 7: Properties of Water
Kesyon esansyèl: Kisa ki fè dlo si tèlman espesyal?	Essential Question: What makes water so special?
Ide Kle 7.7: Predi / evalue efè enèji tèmik genyen sou objè ak materyèl yo.	Key Idea 7.7: Predict and investigate the effect of heat energy on objects and materials.
Tèm syantifik: 1. libere-bay 2. konbine 3. ki fonn 4. lav	Scientific Terms: 1. release 2. combine 3. molten 4. lava
Enfòmasyon: Gen plizyè fenomèn ki libere chalè tankou lè ou boule yon bagay oswa lè ou fwote de bagay ansanm (fwotman), oswa lè ou konbine yon sibstans ak yon lòt. Enèji tèmik kapab eta matyè. Ou kapab chofe metal, ki nòmalman solid, ou fè l tounen yon likid. Se kon sa yo fè sèten bijou. Metal la chofe jiskaske li tounen likid. Apre sa, yo vide l nan yon moul. Lè metal la la refwadi li tounen solid ankò, li pran fòm moul lan. Wòch, ki se yon solid, ka vin cho byen fon anba sifas latè. Ansuit, li ka fonn epi li ka sòti nan yon vòlkan sou fòm yon likid ki rele lav. Lè lav la refwadi sou sifas latè a, li tounen solid ankò.	Content: Heat can be released in many ways, for example, by burning, rubbing (friction), or combining one substance with another. Heat energy on objects and materials can change the substances' state of matter. Metal, which is usually a solid, can be heated to turn into a liquid. Some jewelry is formed this way. The metal is heated until it is a liquid. Then it is poured into a mold. When the metal cools and becomes a solid again, it holds the shape of the mold. Rock, which is a solid, might be heated deep below Earth's surface and then erupt from a volcano as molten, or liquid, lava. When the lava cools on Earth's surface, it changes back to a solid.
Revizyon: 1. Ki chanjman ki fèt si ou chofe yon metal (nan eta solid) rive nan yon tanperati ki wo anpil? 2. Ki sa ki rive lè wòch ki fonn oswa tounen likid refwadi sou sifas latè?	Review: 1. What change occurs if solid metal is heated to a very high temperature? 2. What happens when molten, or liquid, rock cools on Earth's surface?

Chapit 7: Pwopriyete dlo	Unit 7: Properties of Water
Kesyon esansyèl: Kisa ki fè dlo si tèlman espesyal?	Essential Question: What makes water so special?
Ide Kle: 7.8: Dekri chanjman fizik matyè.	Key Idea 7.8: Describe the physical changes of materials.
Tèm syantifik: 1. fizyon 2. konjelasyon 3. ebilasyon 4. Kondanse-kondansasyon 5. chanjman fizik 6. disolisyon	Scientific Terms: 1. melting 2. freezing 3. boiling 4. condensing 5. physical change 6. dissolve
<p>Sijè: Tout sibstans sou latè kapab egziste kòm solid, kòm likid oubyen kòm gaz. Yo rele sa twa eta matyè.</p> <p>Yon chanjman eta rive lè yon sibstans chanje soti nan yon eta ale nan yon lòt. Chak chanjman eta gen pwòp non pa li. Si ou chofo yon solid ase, l ap vin tounen yon likid. Se sa yo rele fizyon. Si ou refwadi yon likid ase, li vin tounen yon solid. Se sa yo rele konjelasyon. Si ou chofo yon likid ase, li tounen yon gaz. Se sa yo rele ebilasyon. Si ou refwadi yon gaz, l ap tounen yon likid. Se sa yo rele kondansasyon.</p> <p>Kisa fonn glas ak bouyi dlo genyen an komen? Tou de se chanjman eta. Yon fèy papye y ap dechikte an ti moso, yon lòt fèy papye y ap koupe epi bwa y ap eskilte ak yon si. Yo tout gen yon bagay an komen. Y ap chanje papye a ak bwa, men okenn nan chanjman yo pa chanjman eta. Se chanjman fizik yo ye. Yon chanjman fizik se yon chanjman ki pa bay yon nouvo sibstans. Chanjman eta se egzanp chanjman fizik yo ye. Menm jan avèk dechikte, koupe, epi eskilte.</p> <p>Ki jan ou fè konnen si yon chanjman eta se yon chanjman fizik? Nou konnen glas, dlo avèk vapè se diferan fòm menm bagay la. Si glas tounen dlo oswa dlo chanje an vapè, pa gen okenn nouvo sibstans ki fèt. Alò, chanjman sa yo se chanjman fizik yo ye.</p>	<p>Content: Every substance on Earth can exist as a solid, as a liquid, or as a gas. These are called the three states of matter.</p> <p>A change of state occurs when a substance changes from one state to another. Each change of state has its own name. If a solid is heated enough, it will eventually turn into a liquid. This is called melting. If a liquid is cooled enough, it will turn into a solid. This is called freezing. If a liquid is heated enough, it will turn into a gas. This is called boiling. If a gas cools, it will turn into a liquid. This is called condensing.</p> <p>What do melting icicles and boiling water have in common? They both show changes of state. A sheet of paper is being shredded, another sheet of paper is being cut, and wood is being carved with a chain saw. They all have something in common. The paper and wood are being changed, but none of these changes is a change of state. All of them show physical changes. A physical change is a change that does not result in a new substance. Changes of state are examples of physical changes. So are shredding, cutting, and carving.</p> <p>How do you know that a change of state is a physical change? We know that ice, water and steam are all different forms of the same thing. If ice changes to water or water changes to steam, no new substance is made. So, that change is a physical change.</p>

<p>Aprè ou fin dechikte yon fèy papye, ki sa ou jwenn? Ou jwenn papye ki dechikte. Lè ou koupe yon fèy papye an de, ou jwenn de moso papye pi piti. Gwosè yo avèk fòm yo diferan, men tout se papye toujou.</p> <p>Yon si fè anpil anpil kalbwa. Kal bwa yo piti, men se toujou bwa yo ye. Depi bwa a pa chanje vin tounen yon lòt sibstans, chanjman an se yon chanjman fizik.</p> <p>Disolisyon se yon lòt kalite chanjman fizik. Sik fonn oswa gaye toupatou nan yon bokal dlo cho. Nou konnen disolisyon se yon chanjman fizik paske nou kapab kite dlo nan bokal la evapore, sa se yon lòt chanjman fizik. Aprè dlo a fin evapore, sik la rete anba bokal la. Sik la pa tounen yon lòt sibstans. Li toujou rete la.</p>	<p>After you shred a sheet of paper, what do you get? You get shreds of paper. And when you cut a sheet of paper in two, you get two smaller pieces of paper. The size and shape are different, but they are all still paper.</p> <p>The chain saw makes lots and lots of wood chips. They're small, but they're still wood. Since wood is not being changed into another substance, the change is a physical change.</p> <p>Dissolving is another kind of physical change. The sugar dissolves in, or becomes evenly mixed into, the hot water in the jar. We know that dissolving is a physical change because we can let the water in the jar evaporate, which is another physical change. After the water evaporates, the sugar is left behind in the jar. The sugar doesn't change into another substance. It's still there.</p>
<p>Revizyon:</p> <ol style="list-style-type: none"> 1. Ki sa tout chanjman fizik genyen an komen? 2. Yon vè tonbe atè epi li kraze an miyèt moso. Èske se yon chanjman fizik? Pou ki sa oswa pou ki pa? 3. Yon kizinyè ajoute lwil nan vinèg epi li melanje yo pou fè yon vinegrèt. Èske sa se yon chanjman fizik? Pou ki sa oswa pou ki pa? 4. Ki sa ki kapab rive si ou chofe yon sibstans? 	<p>Review:</p> <ol style="list-style-type: none"> 1. What do all physical changes have in common? 2. A glass falls to the floor and smashes into hundreds of tiny pieces. Is this a physical change? Why or why not? 3. A cook adds oil to vinegar and then mixes it to make salad dressing. Is this a physical change? Why or why not? 4. What might occur if you heat a substance?

Repons	Answer Key
<p>7.1</p> <ol style="list-style-type: none"> 1. Gaz pa gen ni fòm ni volim. 2. Fòm li chanje men volim li pa chanje. 3. Lè matyè sou fòm solid, li kenbe fòm li ak volim li. Lè matyè sou fòm likid, li kenbe volim li, men fòm li chanje, li pran fòm veso ou mete l lan. Lè matyè sou fòm gaz, li pa kapab kenbe ni fòm li ni volim li. 	<p>7.1</p> <ol style="list-style-type: none"> 1. Gas cannot hold shape or volume. 2. The shape is changed but the volume stays the same. 3. When matter is solid, it holds its shape and volume. When matter is liquid, it holds its volume, but its shape will change according to the container that holds it. When matter is gas, it cannot hold its shape or volume.
<p>7.2</p> <ol style="list-style-type: none"> 1. Lè ou kanpe akote yon vantilatè, van an retire evaporasyon ti gout swè sou po ou. Sa kreye espas ki pèmèt plis molekil dlo chape nan lè a. Van an retire chalè sou po ou epi ou santi ou fre. 2. Tanperati, van, avèk valè sifas lè a touché afekte to evaporasyon. 3. Nou dwe tann rad mouye nou nan yon espas ki laj pou yo seche, paske plis vale espas lè a touche a laj, plis to evaporasyon an pi wo. 4. Lè nou vle dlo bouyi pi vit, nou dwe kouvri veso a. Paske lè dlo a nan yon veso kote lè pa pase, espas anlè dlo a vin plen ak vapè dlo a. Lè lè a gen anpil vapè dlo, imidite a wo. Lè imidite a wo li pi difisil pou dlo evapore. 	<p>7.2</p> <ol style="list-style-type: none"> 1. When you stand next to a fan, the wind removes evaporation of sweat droplets on your skin. This makes space for more water molecules to escape into the air. The wind draws heat away from your skin and you feel cool. 2. Temperature, wind, and the amount of surface area exposed to air affect the rate of evaporation. 3. We should spread out our wet clothes to dry because the larger the exposed surface area, the higher the rate of evaporation. 4. When we want to boil water faster, we should close the lid. Because the water is in an air-tight container, the space above the water is filled with more and more water vapor. When the air contains a lot of water vapor, humidity is high. When humidity is high, it is more difficult for water to evaporate.
<p>7.3</p> <ol style="list-style-type: none"> 1. Dlo anba tè ak risèlman, tou de se non yo bay mouvman dlo apre li fin tonbe sou fòm presipitasyon. Apre yon tan, tou de deplase al nan gran etandi dlo. 2. Tanperati ki fre lakoz kondansasyon vapè dlo. 3. Nèj se vapè dlo ki konjele; grezil se lapli 	<p>7.3</p> <ol style="list-style-type: none"> 1. Groundwater and runoff both name movements of water after it falls as precipitation. Both eventually move to large bodies of water. 2. Cooler temperatures cause condensation of water vapor. 3. Snow is frozen water vapor; sleet is frozen

jele.

4. Oseyan yo pa chèch paske presipitasyon remete dlo nan oseyan yo.
5. Si van pa t pouse lè, nyaj ak tanpèt yo nan lòt direksyon, dlo nan oseyan yo tap evapore nan lè a, yo tap fè nyaj epi yo tap retounen nan lanmè. Konsa, tè yo tap rete sèch.

7.4

1. Nou dwe teste yon bagay pou nou wè si l ap koule oswa si l ap flote. Yon bagay kapab koule oswa li kapab flote, sa depann de pwa li ak kantite dlo li deplase. Yon bagay ap koule si pwa li plis pase kantite dlo li deplase, yon bagay ap flote si pwa li mwens pase kantite dlo li deplase a.
2. Lè ou chanje fòm yon bagay, ou chanje mas volimik bagay la tou. Si ou fè yon ti kannòt an papye, ou mete l nan dlo, l ap flote, men si ou bay papye a fòm yon boul, l ap vin konpak epi l ap koule. Se paske li peze plis pase kantite dlo l ap deplase a.
3. Sa depann de mas volimik yo (mas divize pa volim). Si mas volimik bagay yo pi wo pase mas volimik dlo a, bagay la ap koule. Si mas volimik la pi ba, bagay la ap flote.

7.5

1. Pita se yon melanj, paske nou kapab separe engredyan ki ladan l yo fasil. Li pa yon solisyon paske sibstans li pa gaye toupatou nan lòt sibstans.
2. (Repons sijere): lwil, penti, lakre, kreyon, brik, vè, elatriye.
3. Lè melanj lan chita, si kèk nan engredyan yo monte anlè oswa yo koule nan fon, melanj sa a se yon sispansyon

rain.

4. The oceans don't dry up because precipitation returns water to the oceans
5. If wind and air did not move air, clouds and storms, water would evaporate from oceans into the air, form clouds, and fall back into the ocean, leaving the lands dry.

7.4

1. We have to test the object to determine if it can sink or float. Because an object can sink or float depends on the water it pushes away and the weight of itself. An object will sink if it weighs more than the water it pushes away, and an object will float if it weighs less than the water it pushes away.
2. When you change the shape you are also changing the density of the object. If you take a paper boat and put it into water it will float, but if you shape the paper into a ball it becomes compact and will sink. That is because its weight is more than what the displaced water weighs.
3. It depends on their density (mass divided by volume). If the object's density is higher than the density of water, that object sinks. If it's lower, that object will float.

7.5

1. Pizza is a mixture, because we can easily separate its ingredients. It is not a solution because its substance doesn't spread evenly throughout another substance.
2. (Suggested answers): oil, paint, chalk, crayons, brick, glass, etc.
3. When the mixture sits, if some of the ingredients rise to the top or sink to the bottom, this mixture is a suspension.

<p>7.6</p> <ol style="list-style-type: none"> 1. Gout dlo evapore tousuit epi yo tounen vapè dlo. 2. Moso glas yo disparèt epi yo tounen likid. 3. Vapè se vapè dlo melanje ak lè frèt. 	<p>7.6</p> <ol style="list-style-type: none"> 1. The drop of liquid water would evaporate right away and become water vapor. 2. The ice cubes will disappear and change into liquid. 3. Steam is water vapor mixed with cold air.
<p>7.7</p> <ol style="list-style-type: none"> 1. Metal chanje soti nan solid al nan likid. 2. Yon wòch ki fonn oswa ki sou fòm likid ap retounen nan eta solid. 	<p>7.7</p> <ol style="list-style-type: none"> 1. The metal will change from solid to liquid. 2. The molten, or liquid rock, will change back to a solid.
<p>7.8</p> <ol style="list-style-type: none"> 1. Chanjman fizik pa bay nouvo sibstans. 2. Sa a se yon chanjman fizik, paske menm si vè a kraze an myèt moso, tout moso yo se vè yo ye toujou. 3. Sa a se yon chanjman fizik paske nou ka toujou separe lwil la ak vinèg la fasil. Melanj lan pa kreye yon nouvo sibstans. 4. Si ou chofe yon sibstans, sibstans la kapab tounen yon likid oswa yon gaz. 	<p>7.8</p> <ol style="list-style-type: none"> 1. All physical changes do not result in a new substance. 2. This is a physical change because even if the glass smashes into hundreds of tiny pieces, the pieces are still glass. 3. This is a physical change because we still can easily separate the oil from the vinegar. The mixture doesn't create a new substance. 4. If you heat a substance, the substance might change into liquid or gas.