Name: _____ Packet Due Date: _____

Science

Module 2	**Phase Change**
Chapter 1	**Describing Phase Change at Two Scales** *What happened to the liquid in Titan's Lake?* *(NGSS Performance Expectations: MS-PS1-1; MS-PS1-4; MS-PS3-4; MS-PS3-5; MS-ESS1-3; MS-ESS2-4)*



Lessons & Objectives

Lesson 1: Introduction to Matter
- ❑ **I can…** demonstrate my understanding for the composition (makeup) of all matter.
- ❑ **I can…** define the terms atom & molecule.

Lesson 2: Introducing Titan's Disappearing Lake
- ❑ **I can…** describe the appearance of solids, liquids, & gases AND the changes between these three phases.

Lesson 3: Investigating the Molecular Scale
- ❑ **I can…** construct an initial model to illustrate phase change at the molecular scale.

Lesson 4: Weird Water Events
- ❑ **I can…** make connections between the molecular scale and the macro-scale appearance of a substance.
- ❑ **I can…** begin to explain how molecular freedom of movement changes as a phase changes.

Lesson 5: Investigating Evaporation & Freezing
- ❑ **I can…** draw conclusions about what happens to molecules of a substance when it changes phase.

Lesson 6: Modeling the Molecular Scale
- ❑ **I can…** apply my understanding of phase change at both macro and molecular scales.

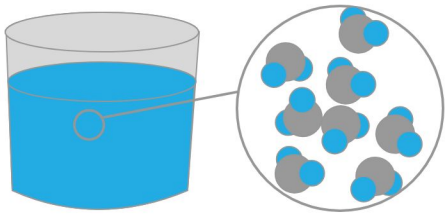
Packet Completion Rubric

4	3	2	1	0
Nothing in packet is missing. Responses consistently meet ALL of the criteria for high quality work. Exemplary effort is evident throughout the entire packet.	Packet is 75-100% complete/accurate. Work/effort misses the criterion for high quality consistently.	Packet is 50-75% complete/accurate. Work/effort has evidence of quality but not consistently.	More than 50% of the packet is incomplete or incorrect. Work does not meet the expected level of quality.	Packet is entirely incomplete or not turned in.

Grading Breakdown: 0 - 1.9 = F 2 - 2.4 = D 2.5 - 2.9 = C 3 - 3.4 = B 3.5 - 4 = A

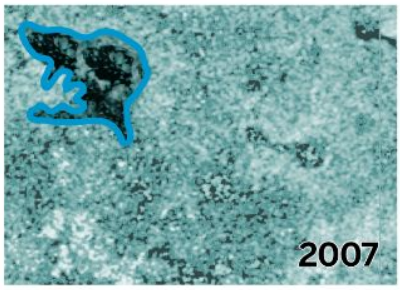
Lesson 1: Introduction to Matter

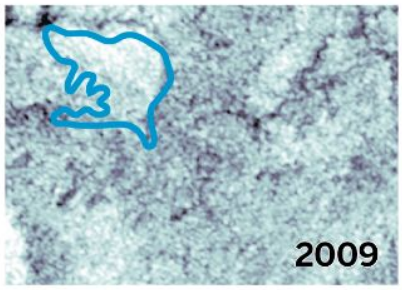
Objective: I can… demonstrate my understanding for the composition (makeup) of all matter.
I can… define the terms atom & molecule.

Lesson 1 DO NOW	What do you think the diagram below is attempting to illustrate? Be as detailed as possible in you explanation.  _____ _____ _____ _____ _____

Introducing Titan's Disappearing Lake

What explains a disappearing lake on a distant moon? Today, you will begin your work as student chemists who have been asked to investigate what caused the mysterious disappearance of a lake on Titan, a large moon orbiting Saturn. The lake is shown in a photograph taken in 2007 but not in a photo taken in the same spot in 2009. You are invited to join a team of chemists at the Universal Space Agency to determine what happened to the lake.





Unit Question:
How can the appearance of a substance change without it becoming a different substance?

Chapter 1 Question:
What happened to the liquid in Titan's lake?

Introduction to Matter

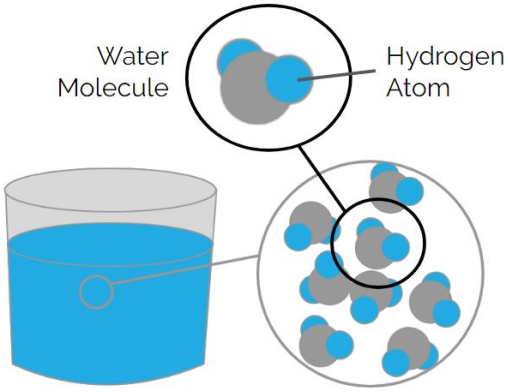
Matter:

_____

_____

_____

_____



Atom:

_____

_____

Molecule:

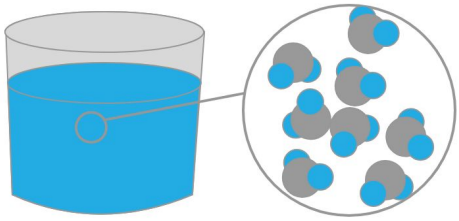
_____

_____

Lesson 1

EXIT SLIP

Using what you learned in today's lesson, write a more detailed response to the following question: What do you think the diagram below is attempting to illustrate?



_____

_____

_____

_____

_____

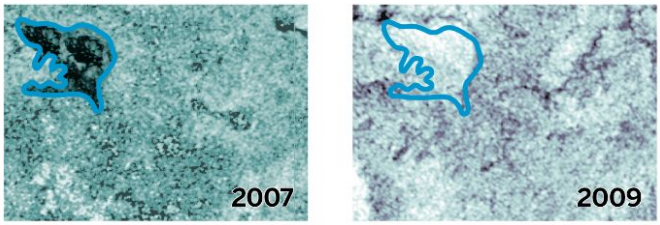
Lesson 2: Introducing Titan's Disappearing Lake

Objective: I can… describe the appearance of solids, liquids, & gases AND the changes between these three phases.

Lesson 2 DO NOW	There are 3 cups below. Each contains water. What do you think is different about the water in each cup? Describe as many differences as you can in the space below.  _____ _____ _____ _____ _____

Introducing Titan's Disappearing Lake (Recap)

What explains a disappearing lake on a distant moon? Today, you will begin your work as student chemists who have been asked to investigate what caused the mysterious disappearance of a lake on Titan, a large moon orbiting Saturn. The lake is shown in a photograph taken in 2007 but not in a photo taken in the same spot in 2009. You are invited to join a team of chemists at the Universal Space Agency to determine what happened to the lake.



Unit Question:

How can the appearance of a substance change without it becoming a different substance?

Chapter 1 Question:

What happened to the liquid in Titan's lake?

Video - *Studying a Distant Moon*

Earth is special. It is the only place in the universe where we have found evidence of water in all three phases: lakes and oceans made of liquid water, glaciers made of solid water (or ice), and water vapor (or gas) in the air. However, NASA recently found evidence that Titan, one of Saturn's moons, has lakes and seas on its surfaces.

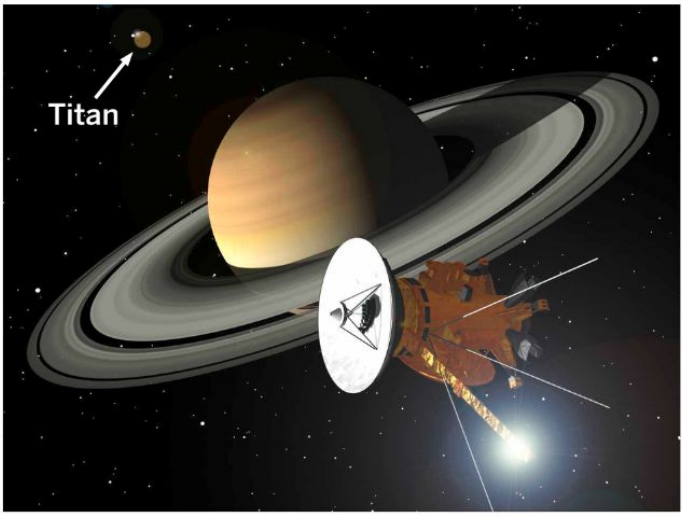
In the video we are about to watch, you will meet Dr. Alex Hayes, a planetary geologist, and Dr. Mike Malaska, a chemist. They are real-life scientists who are investigating a particular lake on Titan.

While watching the video, be listening for answers to the following questions on the following page →

1. What questions about Titan are Dr. Mike Malaska and Dr. Alex Hayes trying to answer through their research?

2. What evidence are they using to answer these questions?

A Message From Dr. Daniela Flores



To: Student Chemists
From: Dr. Daniela Flores, Lead Chemist at the Universal Space Agency
Subject: Missing Lake on Titan

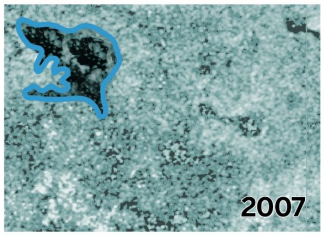
UNIVERSAL SPACE AGENCY

Dear Student Chemists,

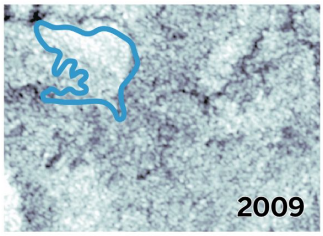
Scientists at the Universal Space Agency are investigating what happened to one of the methane lakes on Titan. The following slides depict the same location at two different times. As you will see, the location looks very different in the two pictures. As student chemists, we ask for your help in determining what happened to this missing lake.

Thanks,
Dr. Flores

What Happened to the Lake?

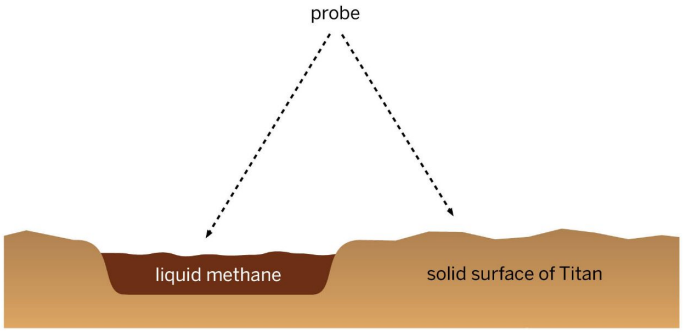


Scientists note a dark area in photos from a NASA probe in 2007. The area outlined in blue is a liquid lake.



Two years later, the area outlined in blue is now much lighter. What happened to the lake?

The Methane Lake in 2007



Introducing Phase Change

In this unit, you will be using your understanding of chemistry to explain what happened to the lake on Titan. As we read in Dr. Flores's message, the two claims for what happened to the lake are both examples of **phase changes**: The Universal Spaces Agency believes the methane in the lake either evaporated or froze.

Today's Investigation Question: *How does the appearance of a substance change when it changes phase?*

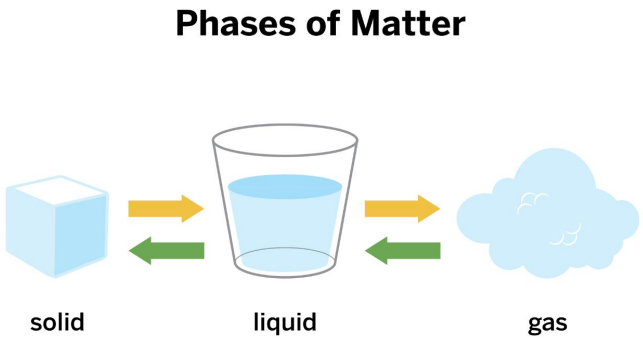
Phase:

_____

_____

_____

_____



Discussing Difference in Appearance

Pick ONE of the videos and answer the questions about it below. Include terms from the word bank in your responses.

First, circle the video that you will focus on:

Cup **Mud Puddle** **Ice on a Tree Branch** **Ice Pop**

Word Bank:

condensation	does not flow	evaporation	flows
freezing	gas	has its own shape	invisible
liquid	melting	phase change	solid
takes the shape of its container	visible		

1. How would you describe the appearance of the substance before the phase change?

_____

_____

_____

_____

2. How would you describe the appearance of the substance after the phase change?

_____

_____

_____

_____

3. Based on your description, choose which phase change you think occurred in your video by filling in the blanks:

In my video, water changed from a _____ *to a* _____

through the process of _____.

Key Concept

- A solid holds its _____ and _____ take the shape of its container.
- A gas has no visible _____ and _____ its container.
- A liquid _____ and _____take the shape of its container.

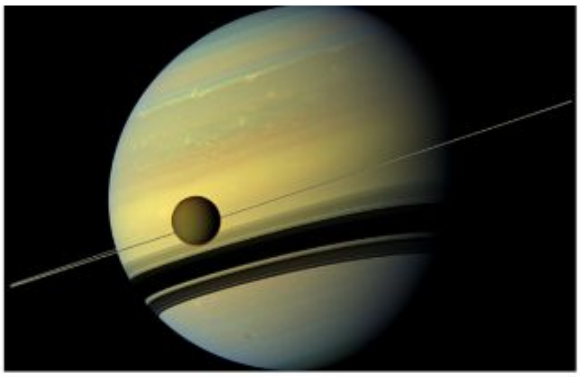
Lesson 2 - Exit Slip

Titan Fact Sheet

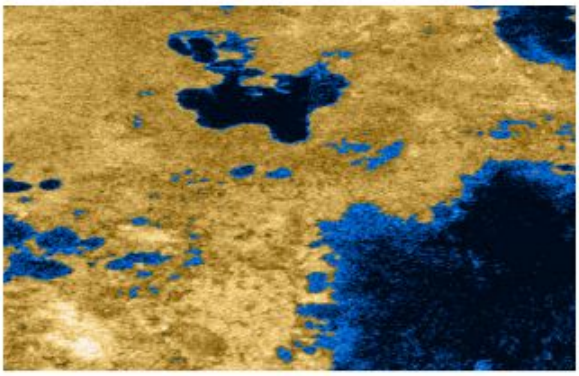
Titan is a large moon orbiting the planet Saturn, about 866 million miles from the sun. The surface of Titan is hidden by a thick, hazy atmosphere, but in the past few years spacecraft have managed to collect images and other data that tell us about what lies beneath the haze. They found something that's common on Earth but very unusual in the rest of the solar system: lakes and seas!

Besides Earth, Titan is the only body in our solar system with enough liquid on its surface to fill lakes and seas. Titan's lakes and seas are filled mainly with thick, tar-like substances, such as methane and ethane. Titan also has methane gas in its atmosphere, just as Earth has water vapor in its atmosphere.

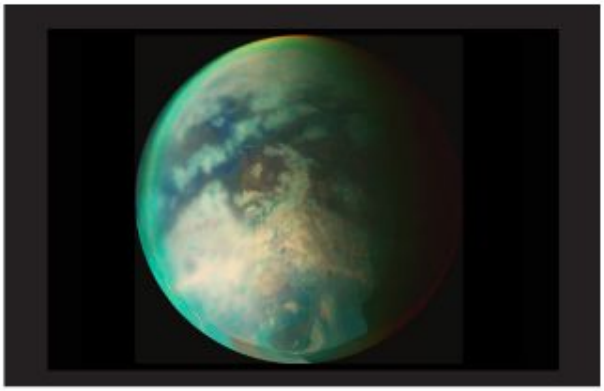
Titan has summer and winter seasons when its surface becomes warmer and colder. However, because it is so far from the sun, even in summer Titan is very cold. Its average surface temperature is about -179°C (-290°F)!



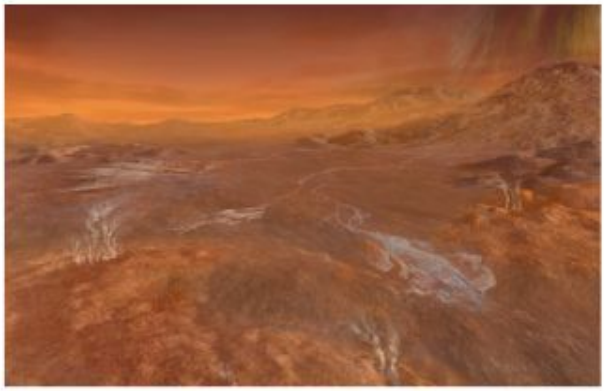
Titan is a moon of the planet Saturn.



The surface of Titan is covered with lakes and seas of liquid methane.



Titan has seas, lakes, and an atmosphere.



This illustration shows the methane rain that falls on the surface of Titan.

Lesson 2 EXIT SLIP	**Read AND ANNOTATE the Titan Fact Sheet on above..** Record three facts about Titan that you think will be important to your investigation as a student chemist. 1. _____ _____ 2. _____ _____ 3. _____ _____

Lesson 2 - Homework

Directions: In this lesson, you began to think about different phases: solids, liquids, and gases. To learn more about gases, read and annotate the "Air Pressure and Boyle's Law" article. Then, answer the questions that follow.

Air Pressure and Boyle's Law

You live your life surrounded by air. You breathe it, you move through it with every step, and you feel it when it moves past you in the form of wind. The air that's all around us is matter in the gas phase. However, for thousands of years, people weren't sure what air was. In fact, they didn't know whether air was made of anything at all. Many thought air was either one of the basic materials making up the world, or that it was just…nothing. Robert Boyle (1627–1691), an English scientist and philosopher, was one of the first people to determine that air is matter and learn a few things about how it behaves.

With the help of his assistant, Robert Hooke, Boyle did many types of experiments to learn about air. He confirmed that air is necessary for sound to travel, for living things to breathe, and for fires to burn. Boyle's most famous discovery had to do with how the pressure and volume of gases relate. Pressure is the amount of continuous force that one object puts on another while they are touching. Volume is the amount of space a substance or object takes up. Boyle discovered something important about the pressure a gas experiences and the volume it takes up: When either one goes up, the other goes down. Today, this bit of information is named after Boyle himself. We call it Boyle's Law. In science, a law is a mathematical description of a natural phenomenon.

Boyle and Hooke had a lab full of equipment that helped them do experiments, but they did their pressure and temperature experiments using a J-shaped glass tube that was closed on the short end. They filled the J-tube with mercury, a metal that is liquid at room temperature. Because there was already air in the tube when it was filled, a bubble of air was trapped in the short end of the tube. To see what happened to the air bubble under different amounts of pressure, Boyle and Hooke could increase or decrease the amount of mercury in the tube. They tried different amounts of mercury and found a pattern: when they added mercury to the tube, the increased pressure made the air bubble get smaller. When they removed mercury from the tube, the decreased pressure allowed the bubble to take up more space. Boyle's experiments helped people to understand that air is matter and that it behaves in ways that can be predicted.

Boyle didn't just change what scientists knew about gases; he also changed how they made discoveries. Before Boyle, most people thought about science based on ideas passed down from the philosopher Aristotle nearly 2,000 years earlier. Boyle was one of the first scientists to base his information on evidence that he could observe and other people could retest. His air experiments led the way for modern scientists to use physical evidence in their work.

1. What was Boyle's most famous discovery about gases?

   _____

   _____

   _____

2. How did Boyle change how scientists make discoveries? What modern concept did Boyle pave the way for?

   _____

   _____

   _____

Lesson 3: Investigating the Molecular Scale

Objective: I can… construct an initial model to illustrate phase change at the molecular scale.

Lesson 3 DO NOW	Write a question you have about Titan or about methane that could help you determine what happened to the lake. (Refer to "Titan Fact Sheet" from the last lesson if needed.) _____ _____ Liquid methane and liquid water are different, but they do have some things in common. What are some things that all liquids have in common? _____ _____ *Look back at last night's homework questions from the article "Air Pressure & Boyle's Law". Be prepared to share your responses with the class.*

Introducing Scale

Scale:

_____

_____

_____

_____

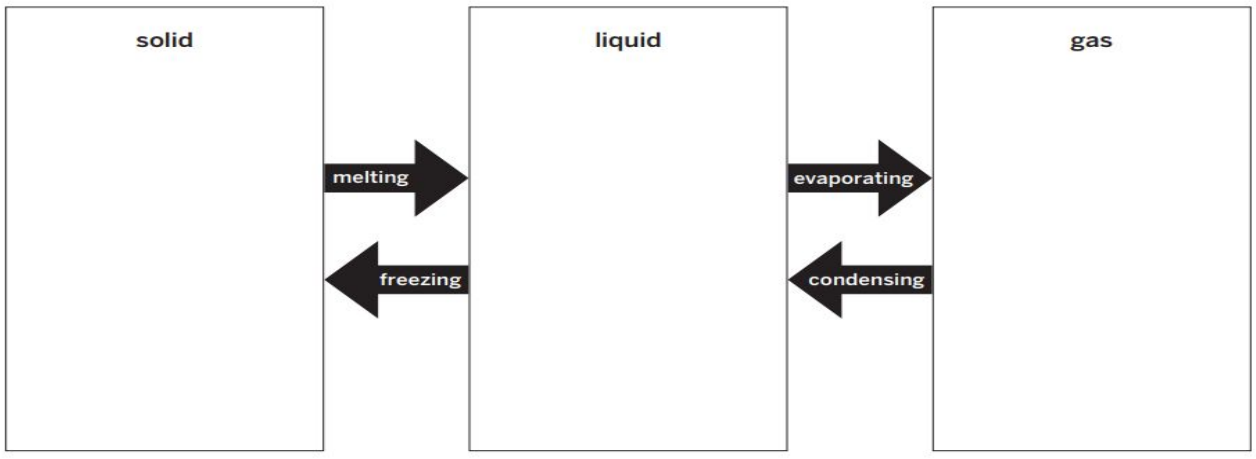
macro scale	molecular scale
substances that can be observed with the human eye 	molecules that are too small to be seen with the human eye 

Making a Prediction

In order to understand what happened to the methane lake on Titan—whether it froze or evaporated—you will need to understand phase changes on the macroscale AND the molecular scale.

Today's Investigation Question: *What happens to the molecules of a substance when it changes phase?*

Directions: Before investigating this question further, you will make a prediction by drawing a model. Use the boxes below to draw a model that shows what you think happens to water molecules at the molecular scale of each phase. (Use circles to represent the molecules)



A Message From Dr. Daniela Flores

To: Student Chemists
From: Dr. Daniela Flores, Lead Chemist at the Universal Space Agency
Subject: *Phase Change* Simulation

UNIVERSAL SPACE AGENCY

You're off to a great start with your investigation of phase changes! Today, you will explore the *Phase Change* Simulation to further investigate Titan's methane-lake mystery at the molecular scale. As you read in the last lesson, Titan and Earth are similar in a few important ways. As molecules behave the same way everywhere in the universe, this Simulation will help you understand phase changes that occur on Titan. I look forward to your next update.

Investigating the Phase Change SIM

As your teacher manipulates the SIM, record initial observations in this space.

In what ways can the SIM be changed or manipulated? What are important features of the SIM? How many different substances can be investigated in the SIM?

To help in evaluating the forum claims, we'll now attempt to learn more about what happens at the molecular scale of each phase. Follow the directions below!

1. Together, let's launch the Phase Change Simulation and observe different phases in the Sim.
2. In the data table on the next page, record your observations about the molecular scale of each phase.
3. Consider how the movement of molecules relates to the macro-scale appearance of each phase.

****Note: you will need to add to this table in a later lesson, so write small!****

Phase	Macro-scale appearance	Molecular scale
Gas	Fills container and has no visible shape	
Liquid	Flows, stays at the bottom of the container, and takes shape of container	
Solid	Rigid and keeps its shape	

Evaluating Claims

Which of the three claims do you think is best supported by evidence so far? (check one)

- ☐ **Claim 1 from I<3Space:** I think that molecules in a substance disappear or no longer exist when a substance changes phase. I think this because when a substance goes from liquid to gas, I can no longer see it.
- ☐ **Claim 2 from PLaNetLoVeR:** I think that molecules in a substance move differently when a substance changes phase. I think this because a liquid, gas, and solid do not move in the same way when you tilt the container they are in.
- ☐ **Claim 3 from scienceiscool:** I think that the molecules in a substance change into a new kind of molecule during a phase change. I think this because, when you tilt the container they are in, a liquid, gas, and solid do not move in the same way.

Lesson 3 EXIT SLIP	Review the molecular-scale models of different phases that you drew today. Considering what you have learned from the Sim so far, answer the following questions: 1. What would you change or add to your models based on what you have learned about molecules and phases so far? _____ _____ _____ 2. What would you keep the same about your models? _____ _____ _____

Lesson 4: Weird Water Events

Objective: I can… make connections between the molecular scale and the macro-scale appearance of a substance.
I can… begin to explain how molecular freedom of movement changes as a phase changes.

Lesson 4 DO NOW	Read the text below about Ellie, her friend, and a puddle. Think about what Ellie's evidence shows. Then, respond to the question. *On the way to school, Ellie sat on a bench waiting for her friend. She noticed snow all around her. Later that day, Ellie and her friend walked home and passed the same bench. Ellie's friend said, "There is a puddle in front of the bench. It must have rained while we were in school, creating this puddle." Ellie disagreed. She had a different claim about how the puddle formed based on the evidence from her observations. Ellie's evidence was as follows:* • *The park was covered in snow that morning but not in the afternoon.* • *Ellie didn't need her jacket on the way home because it was so warm.* • *It was sunny all day.* Do you think the puddle was formed from rain? Why or why not? _____ _____ _____ _____

Weird Water Events

Directions: Read & annotate the article below with your teacher. Following this article, you will be provided with another article to read and annotate independently.

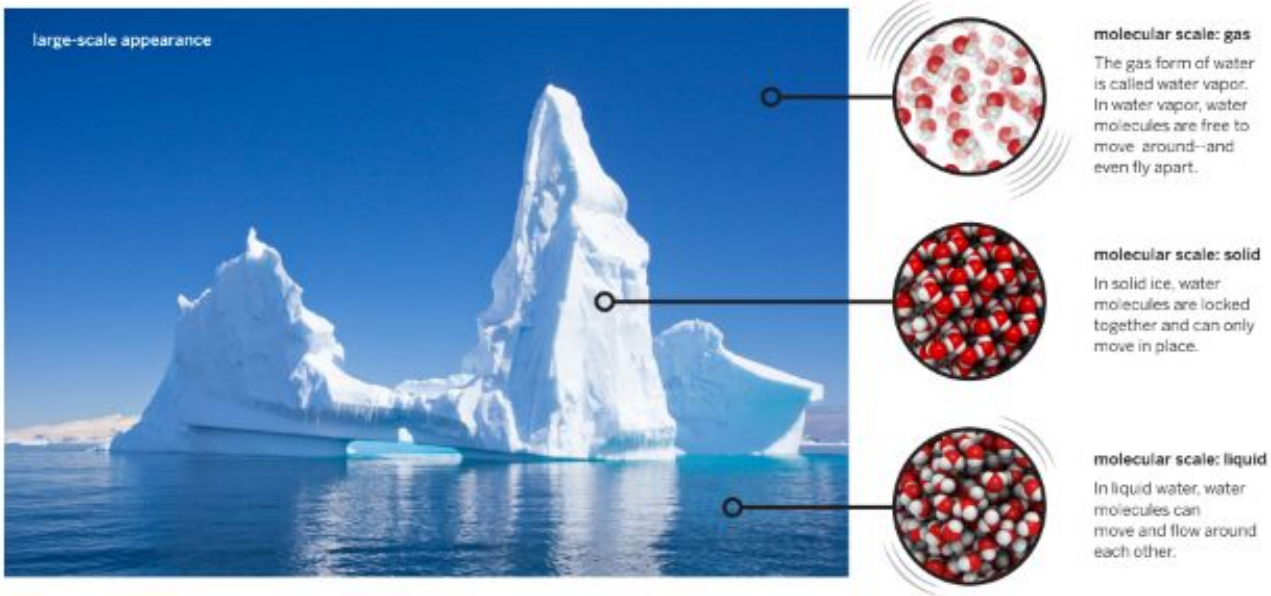
Chapter 1
Weird Water

Water is amazing stuff, and it does some amazing things: It flows, it sparkles like diamonds, and it seems to appear and disappear like magic. These are all large-scale observations of water's appearance that we can make with the human eye. We can also think about water, and all substances, on another scale that we cannot usually see: the molecular scale. Molecules are too tiny to see, but they are very important. Water is made of molecules, and so is almost everything else on Earth. The appearance of water is determined by the way the water molecules are moving.

You might think of water as a liquid, but water can actually exist in three different phases: liquid water, solid ice, and a gas called water vapor. No matter what phase water is in, the water is still made of the same molecules; they just move differently.

In the solid phase (known as ice), water molecules are tightly packed and can move only in place. In the liquid phase, water molecules have greater freedom of movement. They're able to move around and flow from one place to another. However, they still stick together, which is why liquid water forms little beads on a car windshield when it rains.

In the gas phase (known as water vapor), water molecules move around a lot—and they don't stay right next to each other at all. Water vapor doesn't stay where you put it! To learn more about some of the unusual ways water behaves in its different phases, choose one of the chapters that follow.



Exit Slip - Discussing Annotations

Directions: After reading & annotating your article, select two noteworthy annotations to share with students in the class who did not read your article. Summarize these annotations in the space below. Then, locate three students in your class who each read a different article. Record their article title and summarize one of their noteworthy annotations below.

My Article Title: _____

Annotation #1:

_____

_____

Annotation #2:

_____

_____

Article Title # 2: _____

Interesting Annotation:

_____

_____

Article Title # 3: _____

Interesting Annotation:

_____

_____

Article Title # 4: _____

Interesting Annotation:

_____

_____

Lesson 5: Investigating Evaporation + Freezing

Objective: I can… draw conclusions about what happens to molecules of a substance when it changes phase.

Lesson 5 DO NOW	In the Weird Water Events article set, the author uses the phrase greater *freedom of movement*. What do you think she means by this? Use clues from the diagram and the text to determine what this phrase means. _____ _____ _____ _____ _____ _____

Investigating Freedom of Movement

Directions: Press a single molecule in the Sim, tracking its movement. Complete this step for a solid, liquid, and gas. Then, Answer the questions below by considering what you observed while tracking molecules in the Sim.

1. Compared to molecules in other phases, what is different about the way molecules move in solids?

   _____

   _____

2. What is different about the way molecules move in liquids?

   _____

   _____

3. What is different about the way molecules move in gases?

   _____

   _____

Defining Freedom of Movement

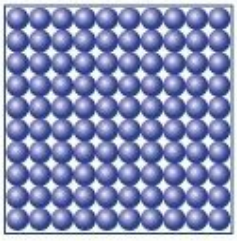
Freedom of Movement:

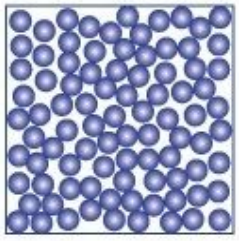
_____

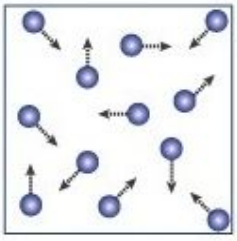
_____

_____

_____







Reasoning About Freedom of Movement

In an earlier lesson, you investigated three claims that were posted on the Universal Space Agency's forum. These claims were posted in response to the question: *What happens to the molecules of substance when it changes phase?*

These claims focus on explaining how molecular behavior can affect the macro-scale appearance of a substance. Today, you will continue your investigation of molecular scale and attempt to uncover more evidence that either supports or refutes these claims.

Claim 1	Claim 2	Claim 3
I<3Space:	**PLaNetLoVeR:**	**scienceiscool:**
I think that molecules in a substance disappear or no longer exist when a substance changes phase. I think this because when a substance goes from liquid to gas, I can no longer see it.	I think that molecules in a substance move differently when a substance changes phase. I think this because, when you tilt the container they are in, a liquid, gas, and solid do not move in the same way.	I think that the molecules in a substance change into a new kind of molecule during a phase change. I think this because a liquid looks different from a solid or a gas.

Reasoning About Freedom of Movement

What happens to the molecules of a substance when it changes phase?

Consider previous activities you have completed in the Sim as well as textual evidence. Then, decide how this evidence either supports or refutes each of the three claims using the reasoning tool.

For help in completing the tables, refer to the examples provided for Claim 1.

Claim 1: Molecules in a substance disappear or no longer exist when a substance changes phase

Evidence	This matters because . . . (How does this evidence support or refute the claim?)	Therefore, . . . (claim)
Quotation from the article: "No matter what phase water is in, the water molecules stay the same; they just move differently."	If water molecules always stay the same, they cannot disappear when water changes phase.	Claim 1 is refuted.
Describe an important observation from the Sim: After removing the heat, the molecules' freedom of movement changed. The molecules went from moving around each other to moving in place.	In the Sim, the movement of the molecules changed, but the molecules did not disappear.	Claim 1 is refuted.

Claim 2: Molecules in a substance move differently when a substance changes phase.

Evidence	**This matters because . . .** (How does this evidence support or refute the claim?)	**Therefore, . . .** (claim)
Quotation from the article: "No matter what phase water is in, the water molecules stay the same; they just move differently."	Explain why this evidence matters:	
Describe an important observation from the Sim:		

Claim 3: Molecules in a substance change into a new kind of molecule during a phase change.

Evidence	**This matters because . . .** (How does this evidence support or refute the claim?)	**Therefore, . . .** (claim)
Quotation from the article: "No matter what phase water is in, the water molecules stay the same; they just move differently."	Explain why this evidence matters:	
Describe an important observation from the Sim:		

Key Concept

- A solid keeps its shape because its molecules only move in _____, not around each other.
- A liquid can flow because its molecules move _____, not away from each other.
- A gas does not have a visible shape because its molecules can move _____ from each other.

Lesson 5 EXIT SLIP	Dr. Flores wants to know which of the forum claims is best supported by the evidence you have gathered from your previous Sim observations and the text. **Select the claim you think is best supported from the options below.** ❏ Claim 1: Molecules in a substance disappear or no longer exist when a substance changes phase. ❏ Claim 2: Molecules in a substance move differently when a substance changes phase. ❏ Claim 3: Molecules in a substance change into a new kind of molecule during a phase change. Explain your choice below using evidence you have gathered thus far. _____ _____ _____ _____ _____

Lesson 6: Modeling the Molecular Scale

Objective: I can… apply my understanding of phase change at both macro and molecular scales.

Lesson 6

DO NOW

Solid	Liquid	Gas
Freedom of Movement	**Freedom of Movement**	**Freedom of Movement**
Strength of Attraction	**Strength of Attraction**	**Strength of Attraction**
Kinetic Energy	**Kinetic Energy**	**Kinetic Energy**

Key Concepts

- A phase change is when the molecules that make up a substance experience a change to their _____. This phase change involves a macroscale change in appearance.
- A change that can be observed at the _____ can be explained by a change at the _____ scale, which cannot be observed with the naked eye.

Explaining Everyday Phase Change

Let's look back at the videos we watched at the beginning of this chapter. As you watch, think about the following question:

As the phase change occurs in the video, what is happening at the molecular scale?

Select one of the four videos from the list below. Then, respond to the prompt. Be sure your sentences include the terms:

molecule - phase change - freedom of movement

Select one:

- ❏ Condensation on a Cup
- ❏ Evaporating Mud Puddle
- ❏ Melting Ice Pop Timelapse
- ❏ Ice Forming on Tree Branches

Prompt: As the phase change occurs in the video, what is happening at the molecular scale?

_____

_____

_____

_____

_____

_____

_____

A Message From Dr. Daniela Flores

To: Student Chemists
From: Dr. Daniela Flores, Lead Chemist at the Universal Space Agency
Subject: Modeling Evaporation and Freezing

UNIVERSAL SPACE AGENCY

You've learned a lot about phase change since you began your work. Now, it's time to use what you have learned to determine what happened to the methane-rich lake on Titan. As you recall, the most probable claims suggest the lake changed phase and either evaporated or froze.

At this time, there is not enough evidence to determine which of the two phase changes occurred. Please use the Modeling Tool to model both evaporation and freezing. This will give our team a better sense of what to look for as we continue our mission.

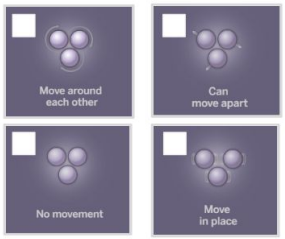
Modeling Evaporating & Freezing

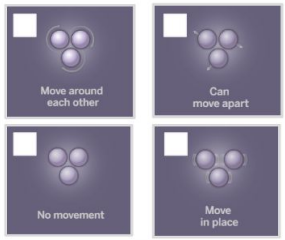
You will now use what you have learned in this chapter to model both potential claims about the disappearing lake on Titan. Your models will provide descriptions of both the molecular scale and macroscale.

Part 1 - Modeling Freezing (Liquid → Solid)

Goal: If the lake FROZE, show how the methane in the lake would be different in 2007 compared to 2009.

Freezing

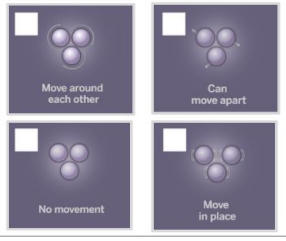
Substance: **METHANE**	Phase: Gas **Liquid** Solid
Molecules: (select one) 	Appearance: (select all that apply) ❑ Holds its shape ❑ No Visible Shape ❑ Fills Container ❑ Takes shape of container ❑ Flows ❑ Stays at bottom of container ❑ Rigid

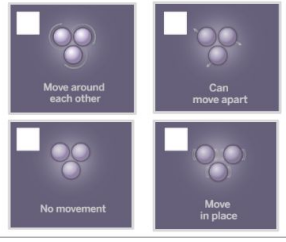
Substance: **METHANE**	Phase: Gas Liquid **Solid**
Molecules: (select one) 	Appearance: (select all that apply) ❑ Holds its shape ❑ No Visible Shape ❑ Fills Container ❑ Takes shape of container ❑ Flows ❑ Stays at bottom of container ❑ Rigid

Part 2 - Modeling Evaporating (Liquid → Gas)

Goal: If the lake EVAPORATED, show how the methane in the lake would be different in 2007 compared to 2009.

Evaporating

Substance: **METHANE**	Phase: Gas **Liquid** Solid
Molecules: (select one) 	Appearance: (select all that apply) ❑ Holds its shape ❑ No Visible Shape ❑ Fills Container ❑ Takes shape of container ❑ Flows ❑ Stays at bottom of container ❑ Rigid

Substance: **METHANE**	Phase: **Gas** Liquid Solid
Molecules: (select one) 	Appearance: (select all that apply) ❑ Holds its shape ❑ No Visible Shape ❑ Fills Container ❑ Takes shape of container ❑ Flows ❑ Stays at bottom of container ❑ Rigid

Exit Slip & Homework - Writing about Titan Claims

In class, you created two models of the molecular scale: one showing evaporation and the other freezing. Now, you will write an explanation of your models. Use the word bank to complete your response.

Word Bank:

freedom of movement	macro scale	molecular scale
solid	liquid	gas

What do the models you created using the Modeling Tool show?