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How can we inclusively plan for, teach, and assess all students in a diverse classroom?

Session 1: Determining Learning Standards using Backwards Design

Session 2: Developing asset based learning continuums

Session 3: Inclusive lesson design reflecting UDL

Session 4: Inclusive and standards based assessment

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Backwards Design Using Arizona Science Curriculum

Grade:	**Subject Area:**	**Strand/Topic:**	
Learning Standard:		**Teacher Provocation Questions:**	**Student Generated Questions**
Key Vocabulary:			

Learning Goals	**Possible Access Points** (accessible version of grade level)	**Curricular Language**	**Student Friendly Language**
Understandings			
Knowledge			
Skills			

Backwards Design Using Arizona Science Curriculum

Grade: 2	Subject Area: Science	Strand/Topic: Physical Science	
Learning Standard: Students develop an understanding of observable properties of matter and how changes in energy (heating or cooling) can affect matter or materials		**Teacher Provocation Questions: What is matter? How does energy change matter?**	**Student Generated Questions**
Key Vocabulary: matter, energy, change, heating, cooling, materials, affect, particles, move, object, force, closed system, transfer, scientists, observations, collect evidence, understand, theory, models, explain, science, solve problems, products, conversations, questions, positive, negative, gather, share, information, heat energy			

Learning Goals	Possible Access Points (accessible version of grade level)	Curricular Language	Student Friendly Language
Knowledge	• Solid, liquid, gas • Fall, push, pull	• P1: All matter in the Universe is made of very small particles • P2: Objects can affect other objects at a distance. • P3: Changing the movement of an object requires a net force to be acting on it. • P4: The total amount of energy in a closed system is always the same but can be transferred from one energy store to another during an event.	• I know that matter is made up of very tiny particles that are too small to see • I know that objects affect each other, even if they are far away from each other • I know that force changes how an object moves • I know that the amount of energy in a closed system is always the same; I know that energy can be transferred
Understandings	• Using senses, experiencing, drawing what you see	• U1: Scientists explain phenomena using evidence obtained from observations and or scientific investigations. Evidence may lead to developing models and or theories to make sense of phenomena. As new evidence is discovered, models and theories can be revised. • U2: The knowledge produced by science is used in engineering and technologies to solve problems and/or create products. • U3: Applications of science often have both positive and negative ethical, social, economic, and/or political implications.	• I understand that scientists make observations in the world and collect evidence to help them understand what is happening • I understand that evidence helps develop theories and models to explain what is happening • I understand that science is used to solve problems and create new products for the world • I understand that science can lead to many conversations and questions about how it is used in both good (positive) and bad (negative)ways
Skills	• Observe, participate, show	• 2.P1U1.1 Plan and carry out an investigation to determine that matter has mass, takes up space, and is recognized by its observable properties; use the collected evidence to develop and support an explanation. • 2.P1U1.2 Plan and carry out investigations to gather evidence to support an explanation on how heating or cooling can cause a phase change in matter. • 2.P4U1.3 Obtain, evaluate and communicate information about ways heat energy can cause change in objects or materials	• I can observe and collect evidence to learn more about matter; I can use my evidence to explain what I am learning • I can collect evidence to explain how heating and cooling matter can change it • I can gather and share information about how heat energy can change matter

Learning Continuums

1. Choose a Learning Standard and translate it into student friendly language

Learning Outcome:			
Student friendly:			
Approaching (Access Point – 1)	**Essential (2)**	**Confident (3)**	**Extending (4)**

2. Start with determining the most essential concept of the standard and then add on complexity

3. Extend the grade level standard to include an access point and challenge point

S, Moore, 2024

Additive Learning Continuum: Arizona Science 2

Learning Standard: Students develop an understanding of observable properties of matter and how changes in energy (heating or cooling) can affect matter or materials			
GUIDING QUESTION: **What is matter? How does energy change matter?**			
Approaching	**Essential**	**Confident**	**Extending**
• I know that everything is made of matter • I know that states of matter are solid, liquid, gas • I know that fall, push and pull are examples of forces	• I know that matter is made up of very tiny particles that are too small to see • I know that objects affect each other, even if they are far away from each other	• I know that force changes how an object moves • I know that the amount of energy in a closed system is always the same; I know that energy can be transferred	• I know how force influences an objects motions • I know why the total amount of energy is the same in a closed system
• I understand that using my senses can help me observe the world around me	• I understand that scientists make observations in the world and collect evidence to help them understand what is happening • I understand that evidence helps develop theories and models to explain what is happening	• I understand that science is used to solve problems and create new products for the world • I understand that science can lead to many conversations and questions about how it is used in both good (positive) and bad (negative)ways	• I understand that the scientific method is a framework for solving challenges in the world • I understand that science creates a range of discussion which requires critical reflection in how it influences decision making and policies
• I can observe, participate in activities to learn more about matter • I can show my thinking using evidence	• I can observe and collect evidence to learn more about matter; I can use my evidence to explain what I am learning • I can collect evidence to explain how heating and cooling matter can change matter	• I can gather and share information about how heat energy can change matter	• I can use molecular structures to explain how heat energy changes matter

Evidence of Learning: Choose your Challenge

Start Here

Go as far as you can in the time allotted

Series Guiding Question: How can we inclusively plan for, teach and assess students in a diverse classroom?

- **I understand** that students are diverse and that planning for them requires anticipating variability rather than homogeneity
- **I know** that Learning Continuums are an inclusive planning strategy, connected to UDL that provides a scaffold of a learning standard and/or a sub standard that allows for choice of complexity which will increase opportunities for students to engage, understand, and show evidence of their learning
- **I can** identify the concept of a grade level learning standard and/or sub standard in a curricular unit, and add on complexity
- **I can** derive an accessible entry point to a grade level concept that can be accessible for any learner in a grade level classroom
- **I am** inclusive and believe that ALL students, regardless of their ability, can access grade level curriculum

Task: Backwards Design Unit Planning		**Time: Before the next session (Jan 22, 2025)**	**Supports & Strategies**
I NEED to…	• Identify the learning standards/ sub standard in the unit you have chosen by looking at the curricular documents		• Choice of collaborative partner/group • Choice of curricular area to use • Choice of task challenge On Series Dashboard • Access to session handouts • Access to examples • Access to planning template
I MUST…	• Determine the most important and essential concept or ides in each standard • Add on another level of complexity		
I CAN…	• Extend for access • Extend for challenge		
I COULD…	• Practice translating the learning standards/ sub standards into student friendly learning statements using the stems (I know…, I can…, I understand…, or I am…)		
I can TRY to…	• Try to create another learning standard		

Shelley MOORE PH.D.

2024

How can we inclusively plan for, teach, and assess all students in a diverse classroom?

Session 1: Determining Learning Standards using Backwards Design

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Series Guiding Question:

How can we inclusively plan for, teach, and assess all students in a diverse classroom?

Session 3 goals:

- **I understand** that students are diverse and that planning for them requires anticipating variability rather than homogeneity
- **I know** that Universal Design for Learning is an inclusive framework, that relies on Backwards Design, which when used to design lessons, will increase opportunities for students to engage, understand, and show evidence of their learning
- **I can** design a lesson that incorporates UDL strategies that will increase opportunities for students to engage, understand, and show evidence of their learning
- **I am** inclusive and believe that ALL students, regardless of their ability, can access grade level curriculum

Backwards Design Using Arizona Science Curriculum

Grade: 2	Subject Area: Science	Strand/Topic: Physical Science	
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Additive Learning Continuum: Arizona Science 2

Learning Standard: Students develop an understanding of observable properties of matter and how changes in energy (heating or cooling) can affect matter or materials			
GUIDING QUESTION: **What is matter? How does energy change matter?**			
Approaching	**Essential**	**Confident**	**Extending**
• I know that everything is made of matter • I know that states of matter are solid, liquid, gas • I know that fall, push and pull are examples of forces	• I know that matter is made up of very tiny particles that are too small to see • I know that objects affect each other, even if they are far away from each other	• I know that force changes how an object moves • I know that the amount of energy in a closed system is always the same; I know that energy can be transferred	• I know how force influences an objects motions • I know why the total amount of energy is the same in a closed system
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Task: Backwards Design Unit Planning		**Time: Before the next session (Nov. 6, 2024)**	**Supports & Strategies**
I NEED to…	• Identify the learning standards/ sub standard in the unit you have chosen by looking at the curricular documents		• Choice of collaborative partner/group • Choice of curricular area to use • Choice of task challenge On Series Dashboard • Access to session handouts • Access to examples • Access to planning template
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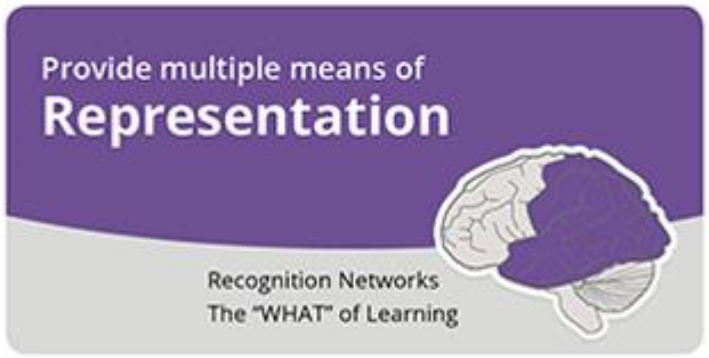
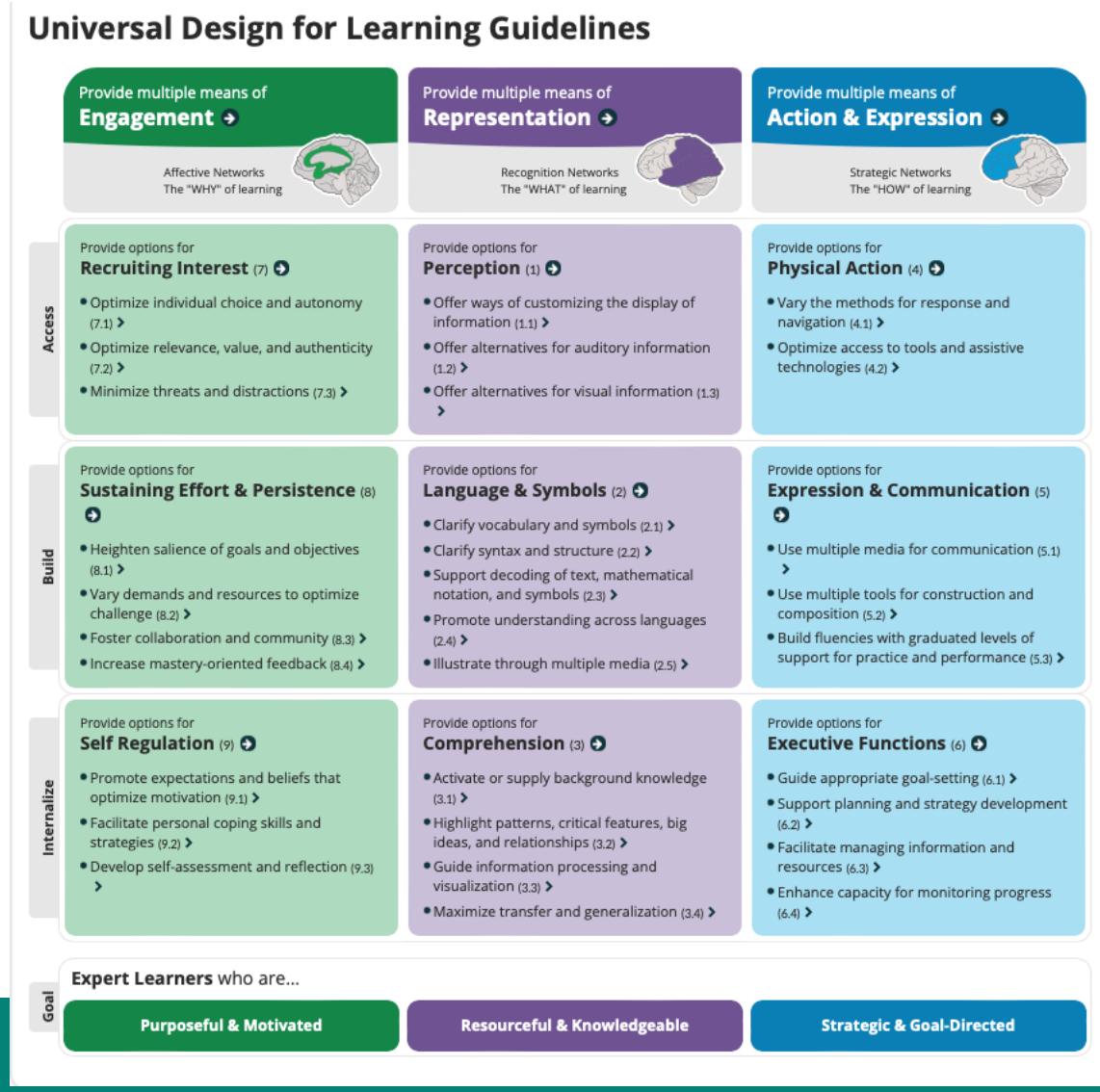
Universal Design for Learning: The Ramp for Learning



Universal Design for Learning: The Ramp for Learning



Universal Design for Learning: Lesson Design

Mini Lesson

Connecting Phase **Processing Phase** → **Transforming & Personalizing Phase**

Guiding Unit Question:

Lesson Goal(s):

Date

Connecting Activity:

Additional supports & strategies to ensure students meet the "ALL"

Mini Lesson:

Processing Task:

I need to…	I must…	I can…	I could…	I can try to…
Access	All	Most	Few	Challenge

Transforming & Personalizing Activity:

This is lesson creates evidence for:

Backwards Design Using Arizona Science Curriculum

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Additive Learning Continuum: Arizona Science 2

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Lesson in instructional resource

MATERIALS

Student

- 1 Science notebook*
- 1 Student Investigation Sheet 2A: *What Are the States of Matter?*
- 1 Pair of safety goggles*

Team of four students

- 1 Clear plastic container with lid, 24-oz
- 20 Marbles

Teacher

- 1 Student Investigation Sheet 2A: *What Are the States of Matter?* (Teacher's Version)
- 1 Balloon
- 1 Glass beaker (100 mL) filled with ice
- 1 Glass beaker (100 mL) filled two-thirds with water
- 3 Clear containers of different shapes, filled with equal volumes of water*
- 3 Clear plastic containers with lids, 24 oz
- 3 Colors of food coloring*
- 1 Graduated cylinder, 1,000 mL
- 1 Hot plate*
- 1 Modeling-clay lump (shape and size to resemble the small, rigid, solid object below)
- 1 Oven mitt*
- 1 Pair of safety goggles*
- 1 Resealable plastic bag, 1 gal*
- 1 Small, rigid, solid object* (e.g., a plastic toy car)
- 1 Thermometer
- Chart paper or whiteboard*
- Marbles
- Markers*

*These materials are needed but not supplied.

1. Distribute a copy of Student Investigation Sheet 2A: *What Are the States of Matter?* to each student. As a brief review, instruct students to complete the first two rows of the chart individually. Ask students to share their responses.

2. Conduct Demonstration #1 where all students can observe. During the demonstration, allow students to ask questions to refine their understanding of these three states of matter.

a. Solids: Display the toy car and the lump of modeling clay. Squeeze the lump of modeling clay to change its shape. Ask:

- What did you observe when I squeezed each solid object? *(The clay changed shape, but the car did not.)*
- Did the masses of these solid objects change? Did the volumes change? *(No, the mass and volume did not change. If students do not recognize this, you may wish to form the clay back into a ball, and measure the mass and volume of both the clay and the car in front of the class. Squeeze the clay again and remeasure to demonstrate there is no change in mass or volume.)*
- Recall from the previous lesson that all matter is made of tiny building blocks called particles. If the volume or mass did not change, do you think the number of particles making up each object changed when the objects were squeezed? Explain your answer. *(No, because adding or removing particles would cause the object's volume or mass to change.)*

b. Liquids: Display the three containers of colored water you prepared, and ask students to observe the volume of liquid in each container. Pour the water from the containers of different shapes into three identical clear plastic containers to demonstrate that the quantities of liquid have equal volume. Pour the water back into the original containers to demonstrate that the volume stays the same but the liquid takes the shape of the container. Ask:

- What did you notice about the volume of each liquid? *(Students should notice that it looked like the volumes of the three liquids were different because the water levels were unequal, but when the liquids were poured into identical containers, it was obvious that they all had the same volume.)*
- What can you conclude about the volume of a liquid and the shape of its container? *(A liquid takes the shape of its container, but its volume does not change when the size of the container is changed.)*

c. Gases: Gently squeeze the balloon to demonstrate that the gas inside changes shape with the balloon. Do the same with the bag of air, and then open the seal to demonstrate that the air leaves the bag and disperses into the room. Ask:

- What did you notice when I squeezed the balloon and the bag of air? *(The gas seemed to move around inside both the balloon and the bag.)*
- How did the bag of air change when I opened it? Predict what happened to the gas inside. *(Students should predict that because the bag seemed to deflate when it was opened, the air left the bag.)*

3. Write the following statements on the board in a single column:

- A material that has definite shape and volume.
- A material that has definite volume but takes the shape of its container.
- A material that has no definite shape or volume and can expand freely to fill a container of any size or shape.

In a second column, write "solid," "liquid," and "gas." As a class, match each state of matter to one of the descriptions you wrote on the board. Instruct students to copy the descriptions into the first row of Student Investigation Sheet 2A.

> **Teaching Tip**
>
> Students may struggle to understand that solids like modeling clay have a definite shape. Explain that the modeling clay is malleable, or can change its shape, but that the individual particles that make up the modeling clay do not change in shape.

4. Explain that the next demonstration will utilize the same type of matter, water, in three different states. Students will observe phase changes, or the changes from one state of matter to another. Provide a pair of safety goggles for each student. Once you and the students have the goggles on, display the beaker of ice cubes and the beaker of water. Pour a little water from the water beaker into the beaker of ice and insert the thermometer. Measure the temperature of the ice water and record it on the board.

> **Teaching Tip**
>
> Dispel misconceptions that a material's temperature is increased only by extremes such as boiling or cooking. Bringing a glass of ice to room temperature is also an example of heating the material.

5. Place the beaker on a hot plate and begin to heat the ice water. Record the temperature every minute until all the ice has melted and the water is at a full boil. As the beaker heats up, ask students to observe what is happening and share their observations with the class. Students should notice that as the hot plate raises the temperature, the ice melts into water. The liquid water begins to boil, and some of the water turns into water vapor.

> **Teaching Tip**
>
> Exercise caution when using the hot plate. Do not touch or allow students to touch the hot plate. Also use caution when handling the beaker. Use an oven mitt or allow the beaker to cool completely before handling.

6. Turn off the hot plate and provide time for students to discuss what they observed in their groups. After some time, facilitate a class discussion using the following questions:

- How did the water change during this demonstration? How many phase changes occurred? *(Students should be able to identify two state changes: Ice was heated until it became water. Water was boiled until it become water vapor.)*
- What pattern do you notice with these phase changes? *(Both of the phase changes were the result of adding heat.)*
- How can you make ice? *(Freeze water.)*

Lesson in instructional resource

Teaching Tip

Make sure students understand that heat energy was added to cause the phase changes they observed. Explain that when water is frozen, heat energy is removed from the system.

7. Discuss melting point, freezing point, and boiling point. Write the following definitions on the board. Direct students to copy each into their science notebooks.

a. A material's freezing point is the temperature at which it changes from a liquid to a solid. For water, this is 0°C (32°F).

b. A material's melting point is the temperature at which it changes from a solid to a liquid. For water, this is 0°C (32°F).

c. A material's boiling point is the temperature at which it changes from a liquid to a gas. For water, this is 100°C (212°F).

Encourage students to provide examples of phenomena related to these terms, such as creating popsicles, melting ice cream, or steaming soup.

8. Ask students if they observed any particles during the demonstration. Make sure students understand that particles are too small to be seen with the eye and require a powerful microscope to view. Ask:

- Think about the ice, water, and vapor. Are these materials made of the same particles? *(Yes)*
- Do you think the number of particles changed as the water changed state? *(Answers will vary. Explain that the number of particles did not change.)*

9. Distribute 20 marbles and a clear plastic container to each group. Instruct students to work in groups of four to develop a model to describe the movement and attraction of the particles in each state of matter. Provide the following rules for students:

- You must demonstrate how particles become more or less attracted while changing from a solid to a liquid to a gas.
- You may use the container or the surface of your desk to demonstrate each state of matter.
- You may demonstrate movement by shaking the container with the lid on or moving the marbles across your desk.

Teaching Tip

Instruct students to shake their containers quietly and to make sure the floor is clear of marbles at the end of the investigation. You may want to provide a shallow box if the desks are not flat.

10. Provide time for groups to develop their models. Allow students to struggle with the challenge before intervening, but use the following question to guide students toward an understanding particle behavior:

- Think about adding energy to something, like we added heat energy to ice and water. What typically happens when something has more energy? *(Objects with more energy tend to move faster than objects with less energy. Guide students to this conclusion by asking them to describe the behavior of a person who has a lot of energy.)*

11. Allow each group to share its model. Draw attention to similarities and differences among the models, but identify models that accurately show particles becoming less attracted and moving faster. Once all groups have shared, ask:

- What happens to particles' attraction and movement as energy is added to a system of matter? *(The particles become less attracted and move faster.)*
- Relate the models to the definitions of each state of matter. *(Students' models will vary, but they should be able to describe how their model represents the following: Solids keep their shape, so their particles are strongly attracted and do not move very much. Liquids maintain the same volume but can take the shape of their container, so their particles have less attraction and more movement. Gases have no definite shape or volume and can spread out, suggesting they are less attracted and move around the most.)*

12. Draw on the board a simple diagram of these particle arrangements. Use Figure 2.1 as a reference.

Guiding Unit Question: How can I use a model to help me understand that some matter is made up of particles that are too small to see?

Lesson Goal(s): I know that everything is made of matter; I know that states of matter are solid, liquid, gas; I know that matter can be broken apart into tiny particles that are too small to see

Date

Connecting Activity: picture set
What do all these pictures have in common: states of matter

Mini Lesson: students watch a demonstration experiment (3 beakers)

Processing Tasks – graphic organizer connected to demonstration

I need to…	I must…	I can…	I could…	I can try to…
Watch a science demonstration Draw what you observe and label it with vocab words	Label which beaker is solid, liquid, gas	Draw the arragnement of particles in each state of matter	Show how the particles move in each drawing	Explain how particles break down in this experiment (E.g., What did we do to the matter)
Access	All	Most	Few	Challenge

Transforming & Personalizing Activity: Exit Slip (post it notes or partner share)
What helped you to learn and feel successful today?

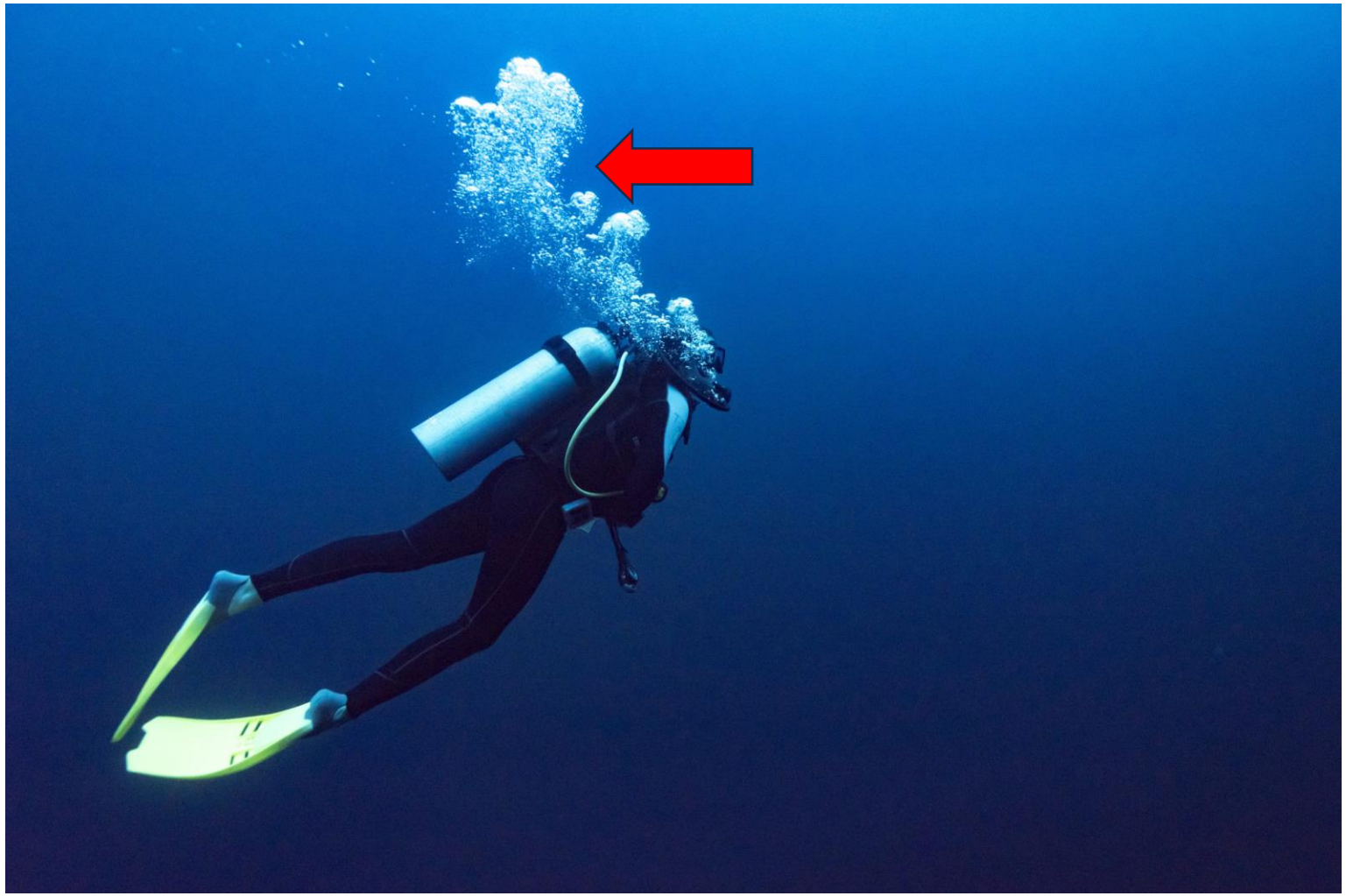
Additional supports & strategies to ensure all students meet the "ALL"
- Provide vocab list, sentence stems, options for verbal explanation

This is lesson creates evidence for: 5-PS1-1 (NGSS)

UDL Lesson Plan: Connect Phase

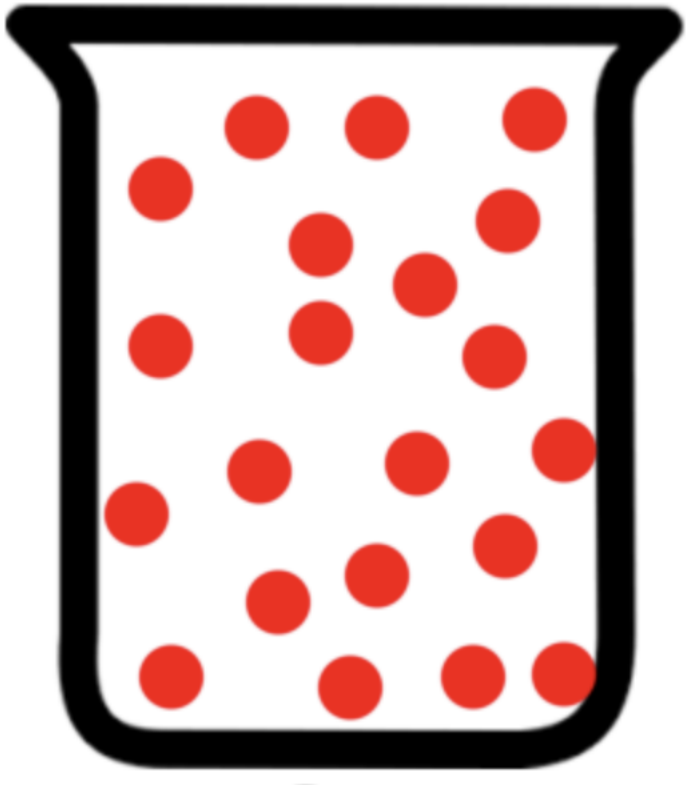
Universal Strategies	UDL Indicators Targeted	Support Needs Impacted	Students in Mind
Picture set	7.2, 8.3, 1.1, 1.2, 1.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 4.1, 5.1, 5.3	Attention, anxiety, communication, engagement/ motivation, executive functioning, intellectual ability, language, literacy, memory, self regulation, self esteem, social skills	GA, MA, LB, JA, ES, RM, NS, KR, TP, AD
Highlighting key words	2.1, 2.4, 3.1, 3.2, 3.4, 5.2	Communication, engagement/ motivation, executive functioning, intellectual ability, literacy, language, memory, self regulation, self esteem,	GA, LB, ES, NS
Student Friendly Learning Goal	8.1, 3.2, 3.4, 6.1, 6.4	Anxiety, communication, engagement/motivation, executive functioning, intellectual ability, literacy, memory, self regulation, self advocacy	GA, MA, LB, JA, ES, ES, KR, GS, MA

Describe what you see.



What do you notice?

Describe what you see.



How does this image connect to the other image?

Describe what you see.

How is this image different or the same as the other images?

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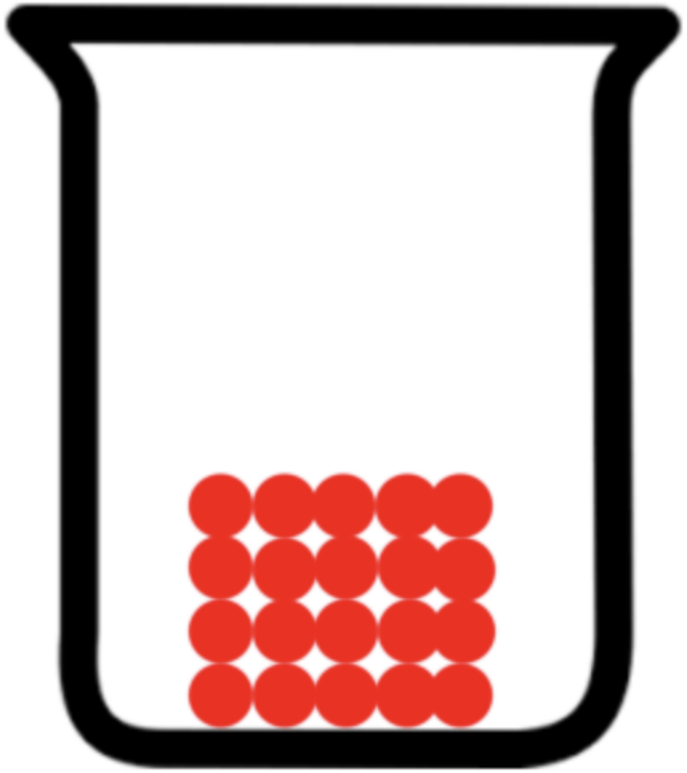
Describe what you see.

How is this image different or the same as the other images?

Describe what you see.



How is this image different or the same as the other images?

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Describe what you see.

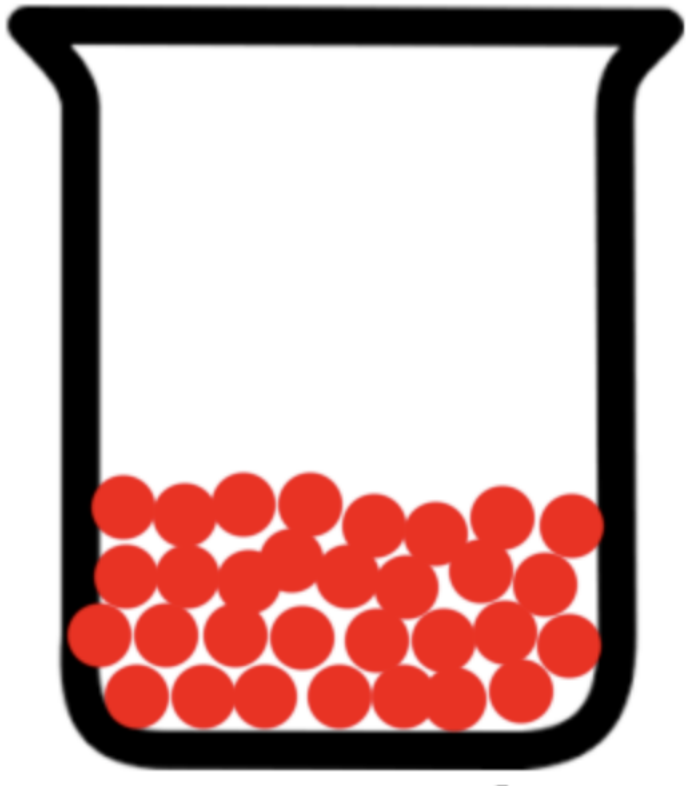
How is this image different or the same as the other images?

Dr. Shelley Moore, 2024

Describe what you see.

How is this image different or the same as the other images?

Describe what you see.



How is this image different or the same as the other images?

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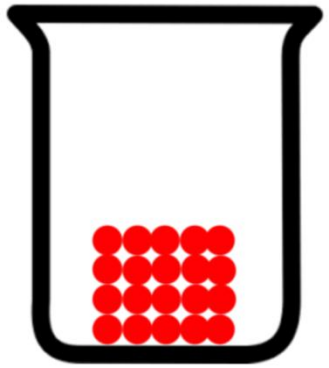
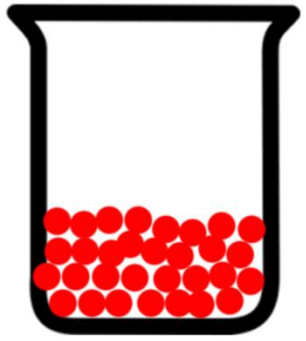
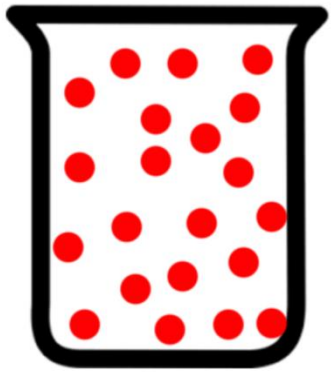
What do all these images have in common?







All the images are different
states of matter

SOLID

LIQUID

GAS

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Our Learning Goals:

- I know that everything is made of matter

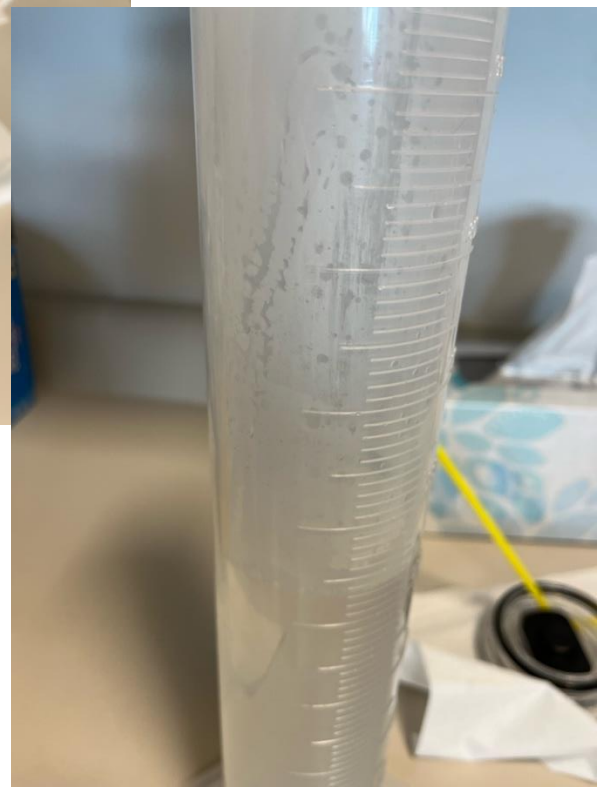
-I know that states of matter are solid, liquid, gas

-I know that matter can be broken apart into tiny particles that are too small to see

UDL Lesson Plan: Mini Lesson Phase

Universal Strategies	UDL Indicators Targeted	Support Needs Impacted	Students in Mind
Modelling (concrete learning)	1.1, 1.2, 1.3, 2.4, 3.1, 3.2, 3.3, 7.3	Attention, Communication, Engagement, Intellectual Ability, Literacy, Memory, Self Regulation,	JA, RM, LB, ES, NS, GA, MA, KR, TP, AD

Demonstration



UDL Lesson Plan: Processing Phase

Universal Strategies	UDL Indicators Targeted	Support Needs Impacted	Students in Mind
Scaffolded Processing Task	7.1, 8.1, 8.2, 8.4, 9.1, 9.3, 4.1, 5.3, 6.1, 6.4, 3.1, 2.1, 3.2,	Attention, Anxiety, Engagement, Frustration, Intellectual Ability, Literacy, Self-Regulation, Self Esteem, Executive Functioning, Memory, Transitioning	JA, RM, GA, LB, ES, KR, GS, NS, MA, BW, IM, MB
MUST/ CAN/ COULD Task checklist	2.4, 2.1, 3.1, 3.2, 3.3, 7.1, 7.3, 8.1, 8.2, 8.4, 9.1, 9.2, 9.3, 5.3, 6.1, 6.3, 6.4	Attention, Anxiety, Engagement, Frustration, Intellectual Ability, Literacy, Self-Regulation, Self Esteem, Executive Functioning, Memory, Transitioning, Self Advocacy, Literacy	JA, RM, GA, LB, ES, KR, GS, NS, MA, BW, IM, MB, TP, AD
MUST/ CAN/ COULD graphic organizer	5.1, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 8.1, 8.2, 8.4, 9.1, 9.3, 1.1, 2.1, 2.3, 2.4, 3.1, 3.2, 3.4	Attention, Anxiety, Communication, Engagement, Frustration, Intellectual Ability, Literacy, Self-Regulation, Self Esteem, Executive Functioning, Memory, Transitioning, Self Advocacy, Literacy	JA, RM, GA, LB, ES, KR, GS, NS, MA, BW, IM, MB, TP, AD
Vocab list	1.1, 1.2, 1.3, 2.1, 2.3, 2.4, 3.2, 4.1, 4.2, 5.2, 7.3,	Attention, Anxiety, Communication, Engagement, Frustration, Intellectual Ability, Language, Literacy, Memory, Self regulation, Self Esteem	JA, RM, GA, LB, ES, KR, GS, NS, MA, BW, IM, MB, TP, AD

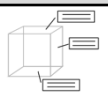
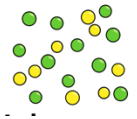
Guiding Question: How can I use a model to help me understand that some matter is made up of particles that are too small to see?

Learning Goal: I know that matter can be broken apart into tiny particles that are too small to see

Task: Observe a science demonstration

Everyone starts together

Go as far as you can!

I **NEED** to:	• Watch the science demonstration • Draw a diagram that shows the science demonstration that you watched	 watch
I **MUST**:	• Label your diagram with vocabulary words	 label
I **CAN**:	• For each state of matter, draw the tiny particles that are too small to see	 draw
I **COULD**:	• Show on your drawing, how the tiny particles move	
I can **TRY** to:	• Using words and drawings, show what made the break down the tiny particles	

Graphic Organizer in instructional resources

Student Investigation Sheet 2A Name _____

What Are the States of Matter? Date _____

	Solid	Liquid	Gas
Definition			
Examples			
Description of arrangement of particles			
Drawing of arrangement of particles			

MUST/CAN/COULD Graphic Organizer

Guiding Question: How can I use a model to help me understand that some matter is made up of particles that are too small to see?

Learning Goal: I know that matter can be broken apart into tiny particles that are too small to see

Name:	Date:

Need: Watch the science demonstration. Create a diagram that shows the science demonstration that you watched.	Must: Label your diagram with vocabulary words: matter solid liquid gas beaker heat water ice steam

Guiding Question: How can I use a model to help me understand that some matter is made up of particles that are too small to see?

Learning Goal: I know that matter can be broken apart into tiny particles that are too small to see

Name:	Date:

Can: For each state of matter, draw the tiny particles that are too small to see Could: Show on your drawing, how the tiny particles move	Can Try: Using words and drawings, show what was used to make the tiny particles move _____ _____ _____

Vocab List

Guiding Question: How can I use a model to help me understand that some matter is made up of particles that are too small to see?

Learning Goal: I know that matter can be broken apart into tiny particles that are too small to see

Name:

Date:

Need: Watch the science demonstration. Create a diagram that shows the science demonstration that you watched.

Must: Label your diagram with vocabulary words:

matter

solid

liquid

gas

beaker

heat

water

ice

steam

This is activity is evidence for: 5-PS1-1 (NGSS)

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Guiding Question: How can I use a model to help me understand that some matter is made up of particles that are too small to see?

Learning Goal: I know that matter can be broken apart into tiny particles that are too small to see

Name:

Date:

Can: For each state of matter, draw the tiny particles that are too small to see

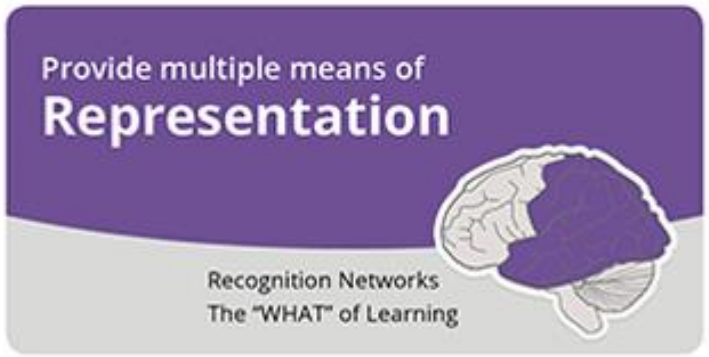
Could: Show on your drawing, how the tiny particles move

Can Try: Using words and drawings, show what was used to make the tiny particles move

UDL Lesson Plan:
Transforming & Personalizing Phase

Universal Strategies	UDL Indicators Targeted	Support Needs Impacted	Students in Mind
Exit Slip Reflection	3.4, 6.4, 5.1, 9.3	Communication, Engagement, Intellectual Ability, Literacy, Self Regulation	JA, RM, GA, LB, ES, KR, GS, NS, MA, BW, IM, MB

What barriers are these UDL strategies reducing or eliminating for students?



Guiding Unit Question: **How does water impact living things in the environment?**

Lesson Goal(s):

I can investigate water

I know that water is important to living things and the environment

Date:

Supports

Connecting Activity: picture// word sort - vocabulary

Mini Lesson: building mind maps

Processing Tasks →

I Need to…	I Must…	I Can…	I Could…	I Can Try to…
Find the water on a picture of the Earth	Label the 2 different kinds of water	Oragnize examples of bodies of water - Fresh - salt	Choose a habitat - Add examples of living things that live in there	Choose a different habitat - Add examples of living things that live in there
Access	All	Most	Few	Challenge

Transforming & Personalizing Activity:
Connect 1/Connect 2

How does water impact living things?

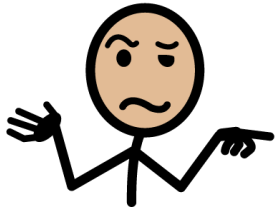
Our Goal Today!

I can learn about water

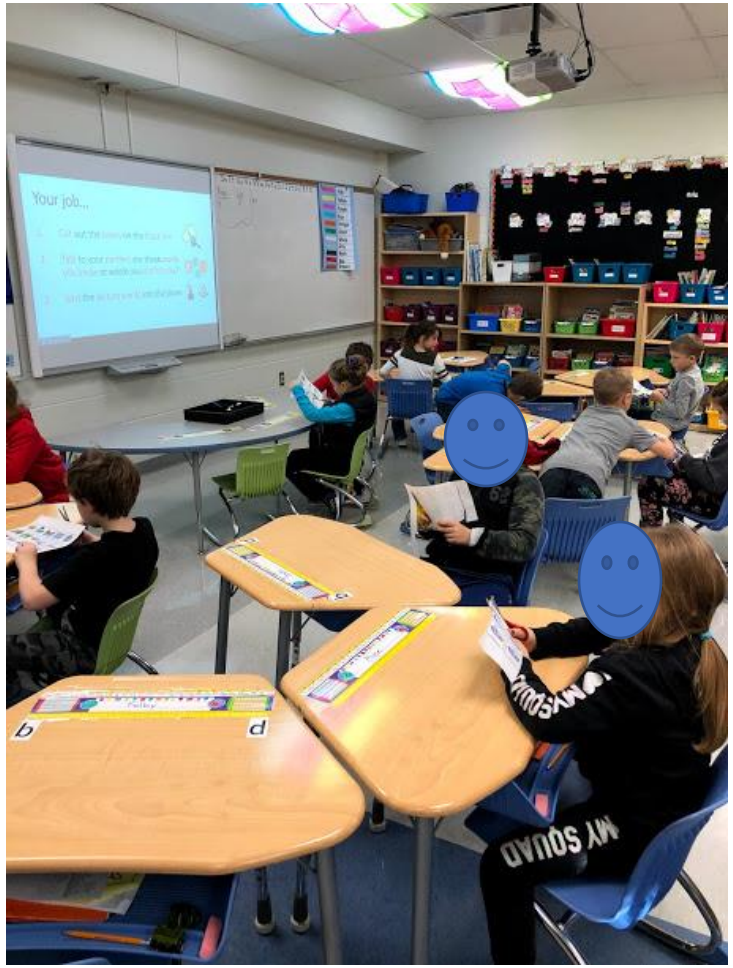
Important Words

wetlands
stream
underground water
Indian Ocean
glacier
salt water
Arctic Ocean
river
dug out/ pond
Pacific Ocean
Earth
fresh water
lake
Atlantic Ocean
Southern Ocean

I know these words!



I’m not sure about these words.

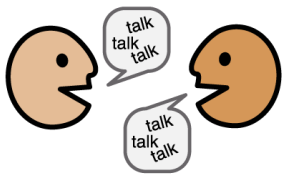

Your job...
b
d


Macy

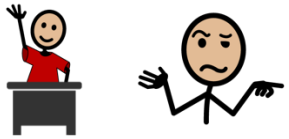
Your job…

1. Cut out the boxes on the black line

2. Talk to your partner, are these words you know or words you don't know?



3. Sort the picture words into the boxes



What can we learn about water?

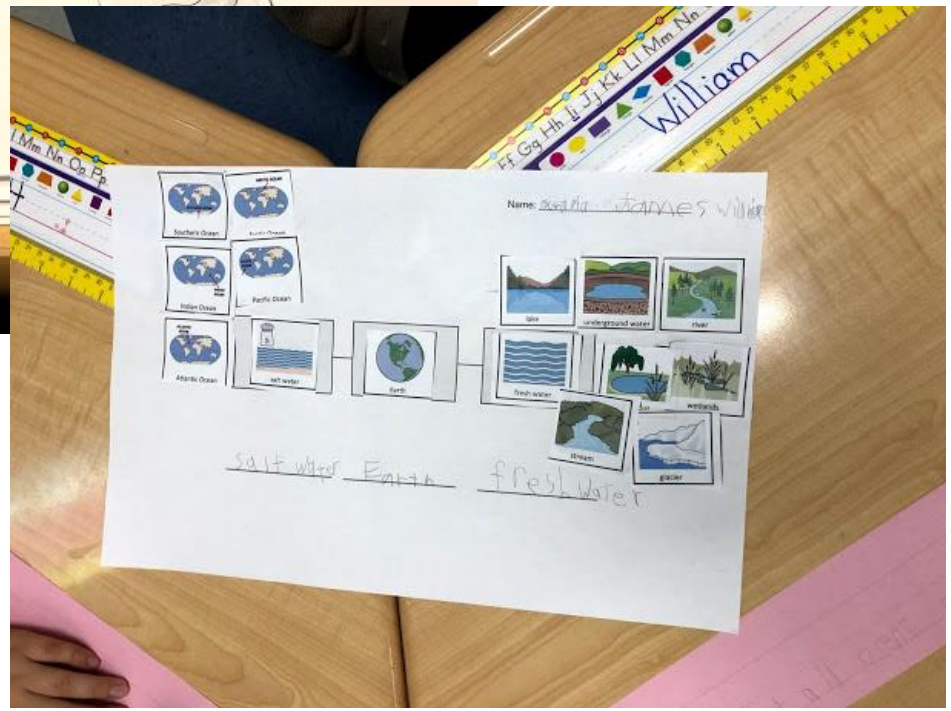
Video

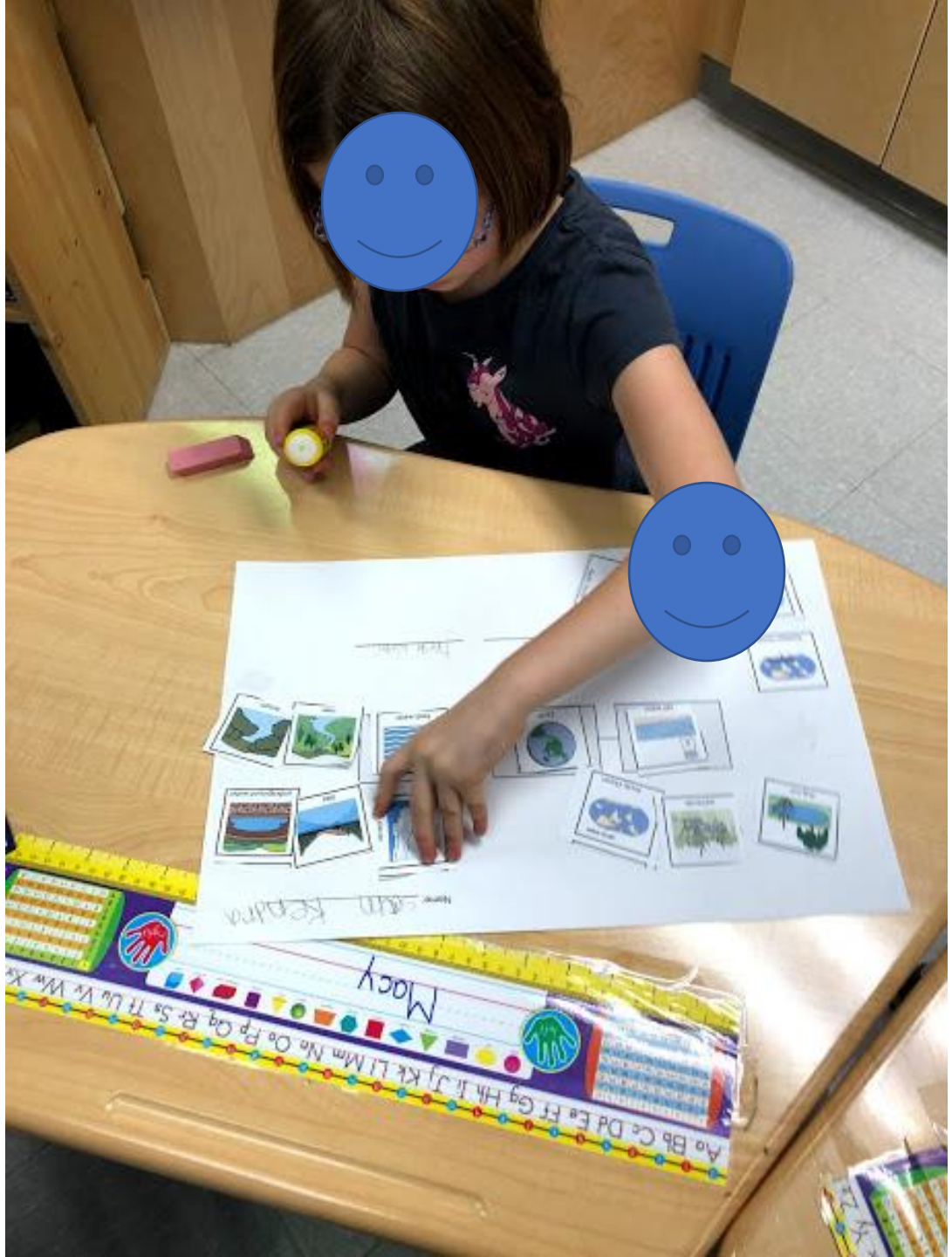
What can we learn about water?

Names: _____

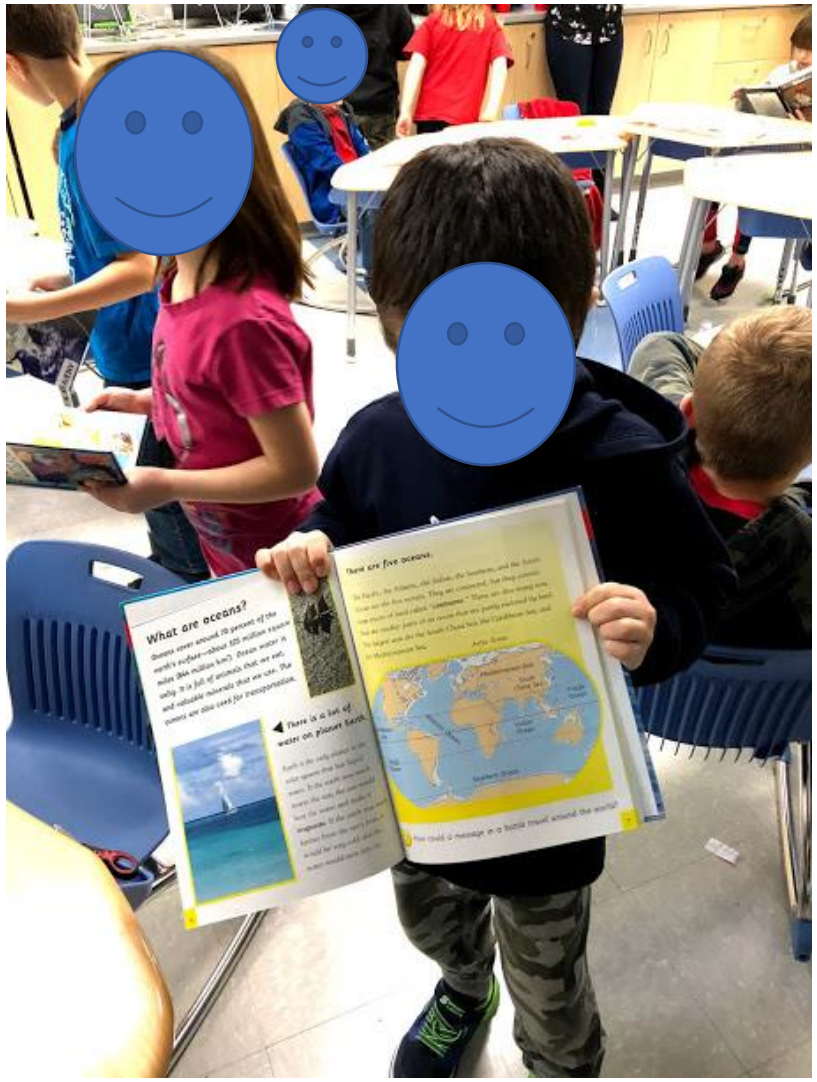
_____ _____ _____

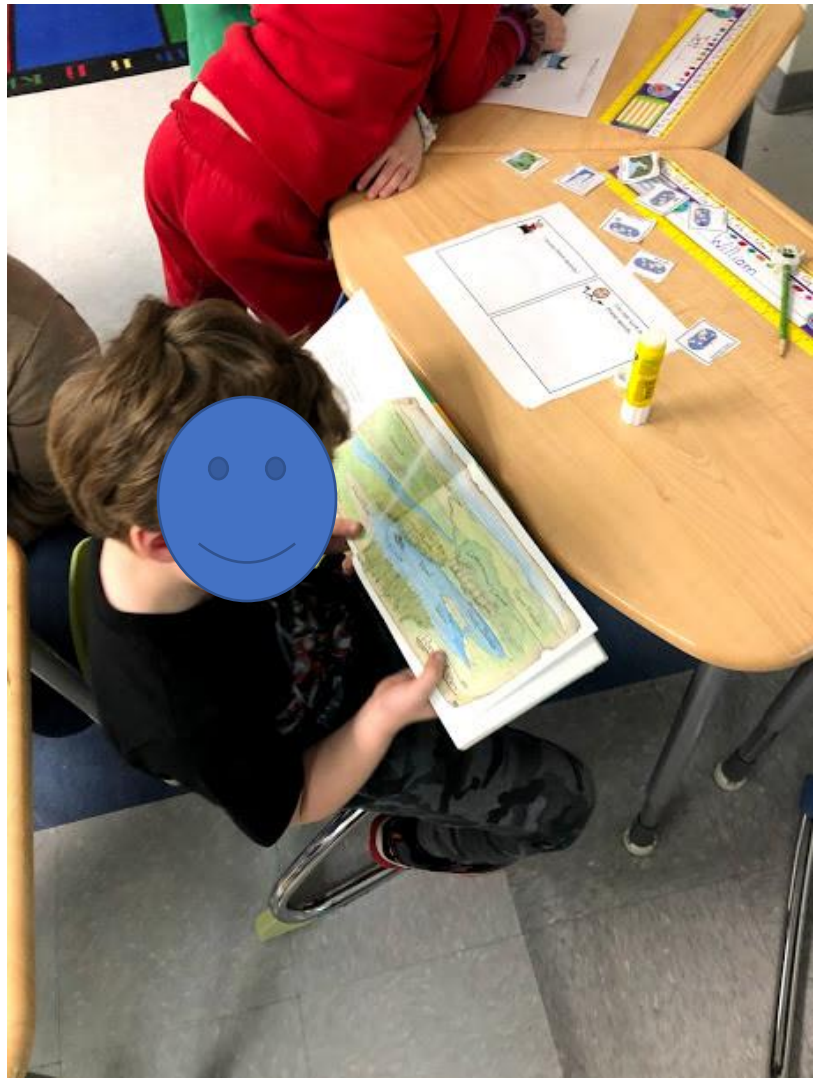

Name: Rydet Alyse
Arctic Ocean
Pacific Ocean
Atlantic Ocean
Indian Ocean
Southern Ocean
salt water
Earth
fresh water
stream
river
wetlands
underground water
lake
saltwaterEarth
freshwater


William
Name:
salt water
Earth
fresh water


Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx
Mocy


Earth
Water
Water
Splash in a Pond
On the Way to the Beach
BY HENRY COLE
ENV
Seashore and Tides
Life in a Pond
OCEAN AND SEA
SCHOLASTIC discover more
Protecting Global Environments
SUSAN WATSON


What are oceans?
There are five oceans.
There is a lot of water on planet Earth.



Learning Target: I can learn about water

Start Together

NEED

MUST

CAN

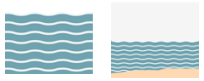
COULD

TRY

Go as far as you can!

Choose the picture that shows the BIG IDEA

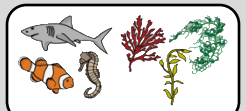
Choose the pictures that show the different kinds of water on the Earth

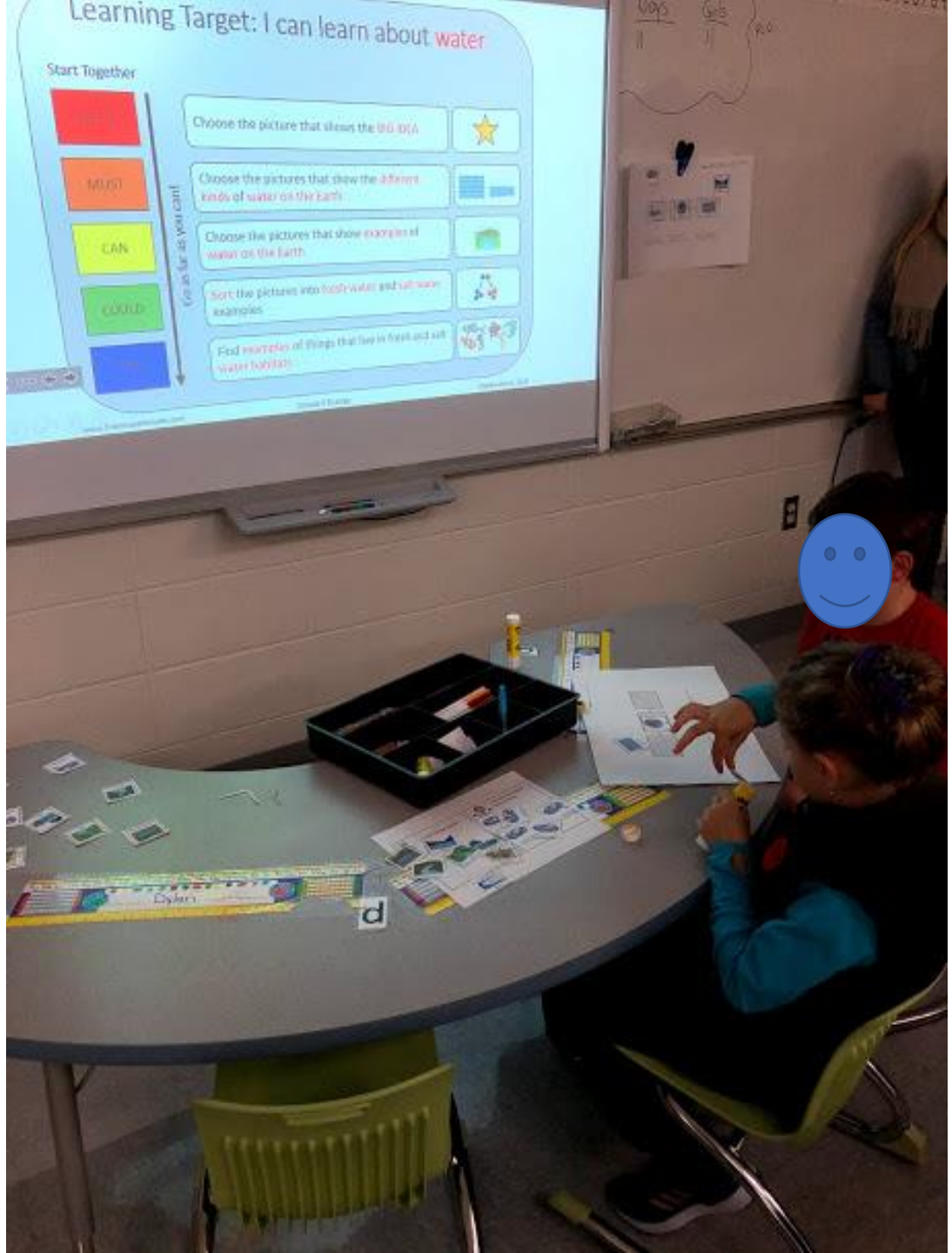


Choose the pictures that show examples of water on the Earth

Sort the pictures into fresh water and salt water examples

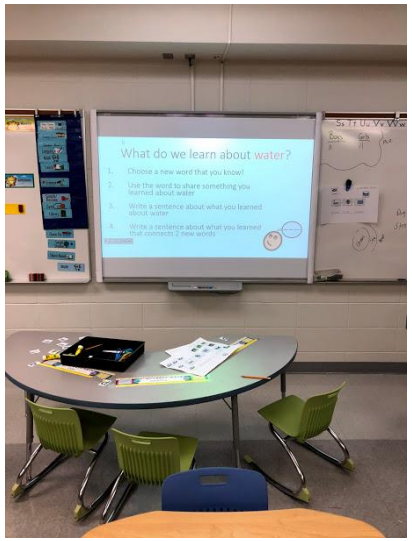
Find examples of things that live in fresh and salt water habitats

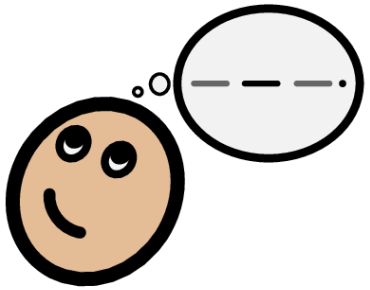


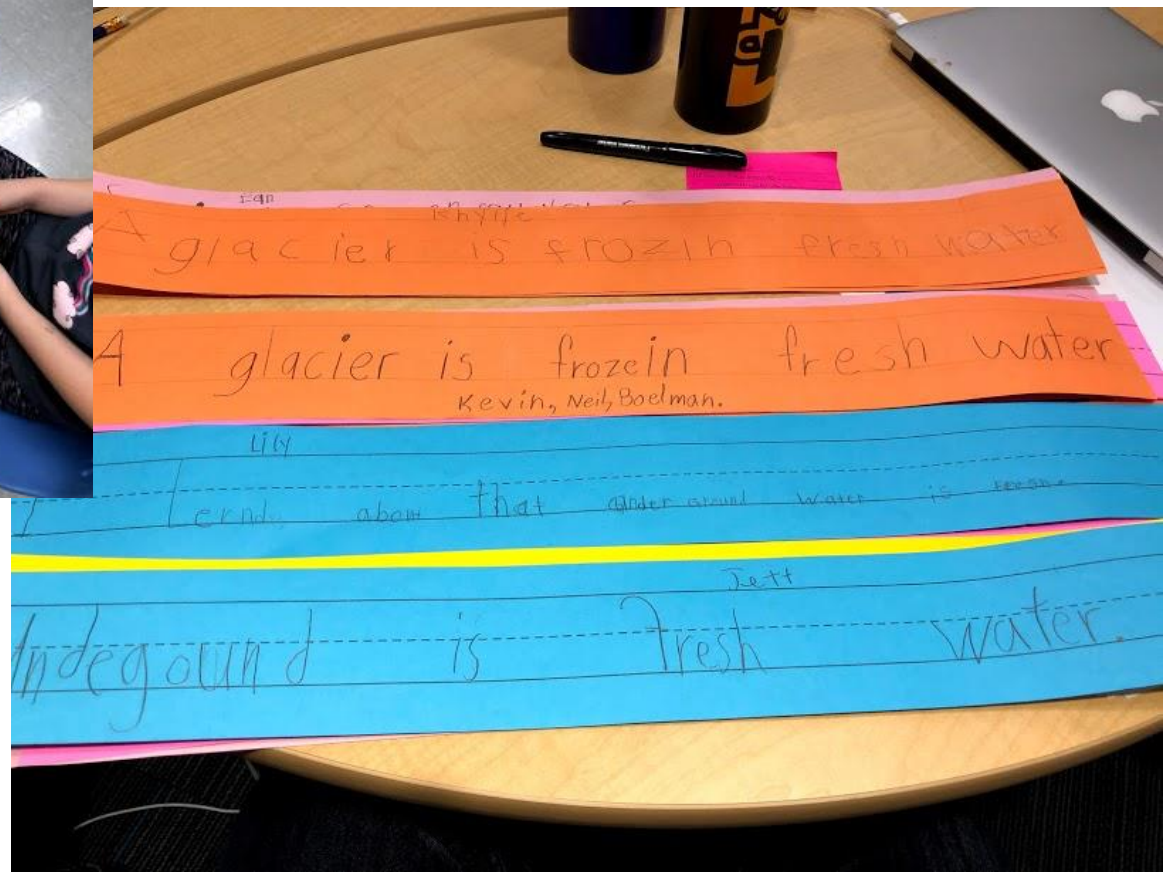

Learning Target: I can learn about water
Start Together
MUST
CAN
COULD
Choose the picture that shows the BIG IDEA
Choose the pictures that show the different kinds of water on the Earth
Choose the pictures that show examples of water on the Earth
Sort the pictures into fresh water and salt water examples
Find examples of things that live in fresh and salt water habitats
(Go as far as you can!)

What do we learn about water?

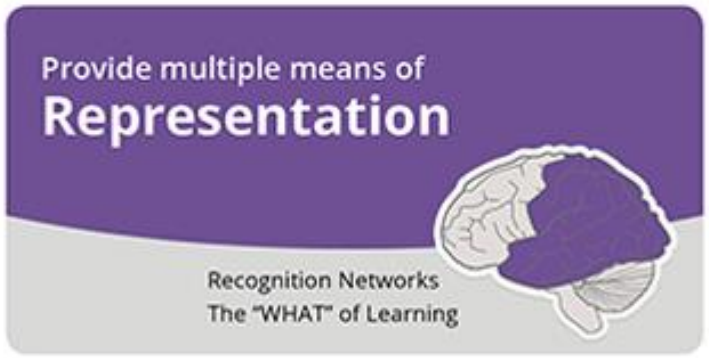
1. Choose a new word that you know!
2. Use the word to share something you learned about water
3. Write a sentence about what you learned about water
4. Write a sentence about what you learned that connects 2 new words






A glacier is frozin fresh water
A glacier is frozein fresh water
Kevin, Neil, Boelman.
Lily
Underground is Tresh water.

What strategies did you notice that supported student to be engaged, understand and to express their learning?

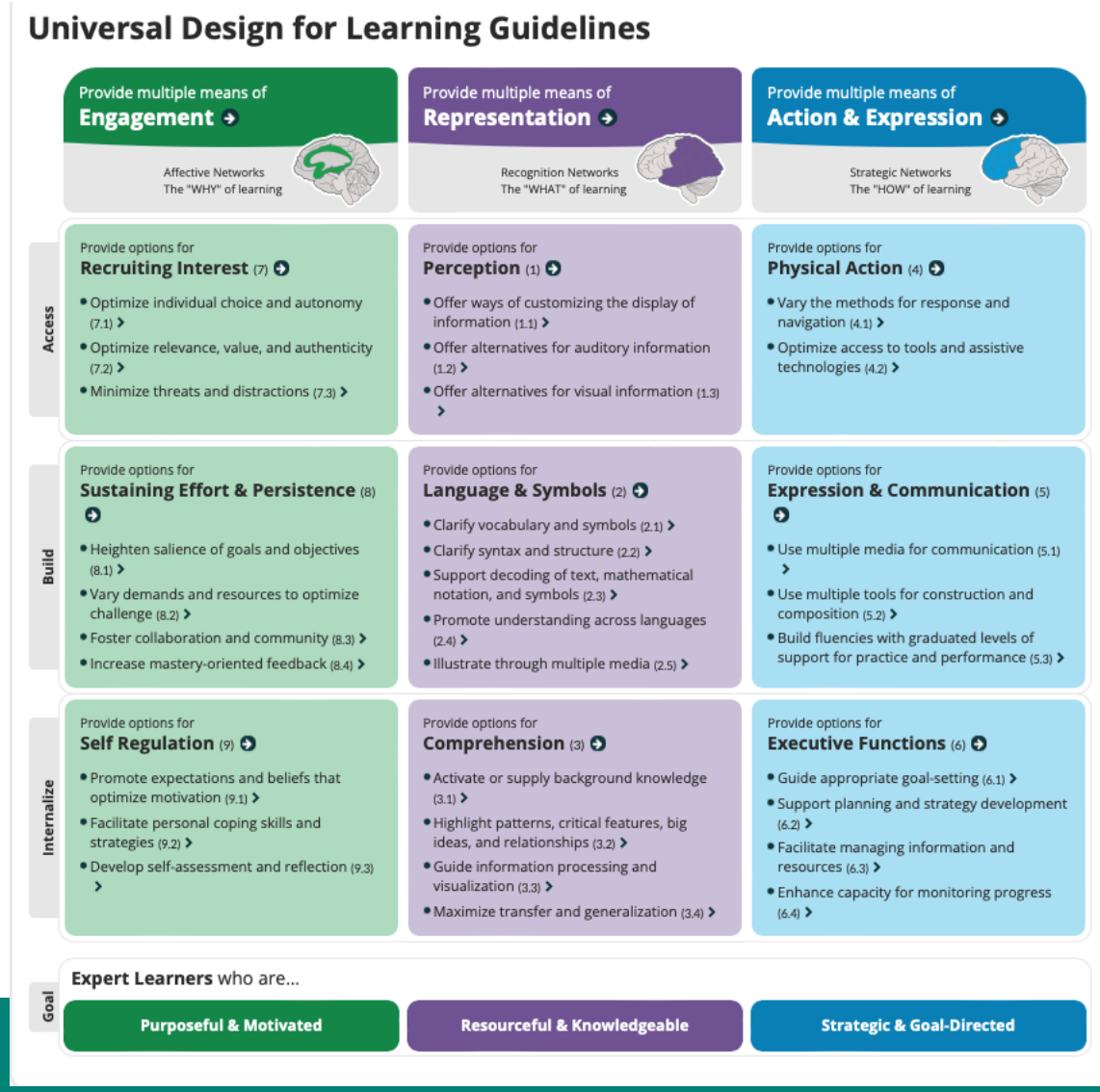


Universal Design for Learning: Lesson Design

Mini Lesson

Connecting Phase **Processing Phase** → **Transforming & Personalizing Phase**

Universal Design for Learning: The Ramp for Learning



The Universal Design for Learning Guideline 3.0 in Plain Language: Engagement

UDL Language	Plain Language	Examples of strategies
Design Multiple Means of Engagement		
Access: Design options for Welcoming Interests and Identities		
Optimize choice and autonomy	Offer options to students to increase their independence and ownership over their learning	
Optimize relevance, value, and authenticity	Connect learning to interest and strength areas that reflect the world that students are living in	
Nurture joy and play	Bring joy and play into all areas of learning	
Address biases, threats, and distractions	Deal with unfairness, worries and possible interruptions to student learning	
Support: Design Options for Sustaining Effort & Persistence		
Clarify the meaning and purpose of goals	Show student the learning goals and how they connect to the activities they are doing	
Optimize challenge and support	Offer choice of how complex a learning goal or activity is and allow student to choose how much complexity and support they need	
Foster collaboration, interdependence, and collective learning	Provide opportunities for students to work together and learn from each other with shared goals and accessible entry point	
Foster belonging and community	Build ongoing opportunities for students to build community and allow students to be themselves without assimilating to a dominant group	
Offer action-oriented feedback	Give feedback that encourages students to take action	
Executive Function: Design Options for Emotional Capacity		
Recognize expectations, beliefs, and motivations	Help students to understand what others expect, believe, and want	
Develop awareness of self and others	Help student to know what their needs are what supports and strategies they could advocate for, and be aware of what others need and how they can respond and support them	
Promote individual and collective reflection	Encourage personal and classroom reflecting and goal setting	
Cultivate empathy and restorative practices	Build empathy into the culture of the classroom and teach how to heal through compassion and perspective taking	

The Universal Design for Learning Guideline 3.0 in Plain Language: Representation

UDL Language	Plain Language	Examples
Design Multiple Means of Representation		
Design Options for Perception		
Support opportunities to customize the display of information		
Support multiple ways to perceive information		
Represent a diversity of perspectives and identities in authentic ways		
Design Options for Language & Symbols		
Clarify vocabulary, symbols, and language structures		
Support decoding of text, mathematical notation, and symbols		
Cultivate understanding and respect across languages and dialects		
Address biases in the use of language and symbols		
Illustrate through multiple media		
Executive Function: Design Options for Building Knowledge		
Connect prior knowledge to new learning		
Highlight and explore patterns, critical features, big ideas, and relationships		
Maximize transfer and generalization		

The Universal Design for Learning Guideline 3.0 in Plain Language: Expression

UDL Language	Plain Language	Examples
Design Multiple Means of Action & Expression		
Aces: Design Options for Interaction		
Vary and honor the methods for response, navigation, and movement		
Optimize access to accessible materials and assistive and accessible technologies and tools		
Support: Design Options for Expression & Communication		
Use multiple media for communication		
Use multiple tools for construction, composition, and creativity		
Build fluencies with graduated support for practice and performance		
Address biases related to modes of expression and communication		
Executive Function: Design Options for Strategy Development		
Set meaningful goals		
Anticipate and plan for challenges		
Organize information and resources		
Enhance capacity for monitoring progress		
Challenge exclusionary practices		

Evidence of Learning: Choose your Challenge

Start Here

Go as far as you can in the time allotted

Series Guiding Question: How can we inclusively plan for, teach and assess students in a diverse classroom?

- **I understand** that students are diverse and that planning for them requires anticipating variability rather than homogeneity
- **I know** that Universal Design for Learning is an inclusive framework, that relies on Backwards Design, which when used to design lessons, will increase opportunities for students to engage, understand, and show evidence of their learning
- **I can** design a lesson that incorporates UDL strategies that will increase opportunities for students to engage, understand, and show evidence of their learning
- **I am** inclusive and believe that ALL students, regardless of their ability, can access grade level curriculum

Task: Backwards Design Unit Planning	**Time: Before the next session (Feb 19, 2024)**	**Supports & Strategies**
I NEED to…	• Identify the sub standards (lesson learning outcomes) in the unit that you want to target in a lesson • Ensure that the learning outcomes are in student friendly language	• Choice of collaborative partner/group • Choice of curricular area to use • Choice of task challenge On Series Dashboard • Access to session handouts • Access to examples • Access to planning template
I MUST…	• Design a lesson that includes the 3 phases of UDL lesson design – connect, process and transform & personalize	
I CAN…	• Scaffold the processing phases to include an access point and a scaffold that increases complexity and show allow student to choose their challenge	
I COULD…	• Redesign and provide graphic organizers for students that align with the UDL lesson phases	
I can TRY to…	• Interview students and gather their feedback on what worked for them in the lesson and what didn't	

How can we inclusively plan for, teach, and assess all students in a diverse classroom?

Session 1: Determining Learning Standards using Backwards Design

Session 2: Developing asset-based learning continuums

Session 3: Inclusive lesson design reflecting UDL

Session 4: Inclusive and standards based assessment

Shelley MOORE PH.D.