Designing for DIVERSITY

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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

Thinking back

What are you trying?
What are you noticing?

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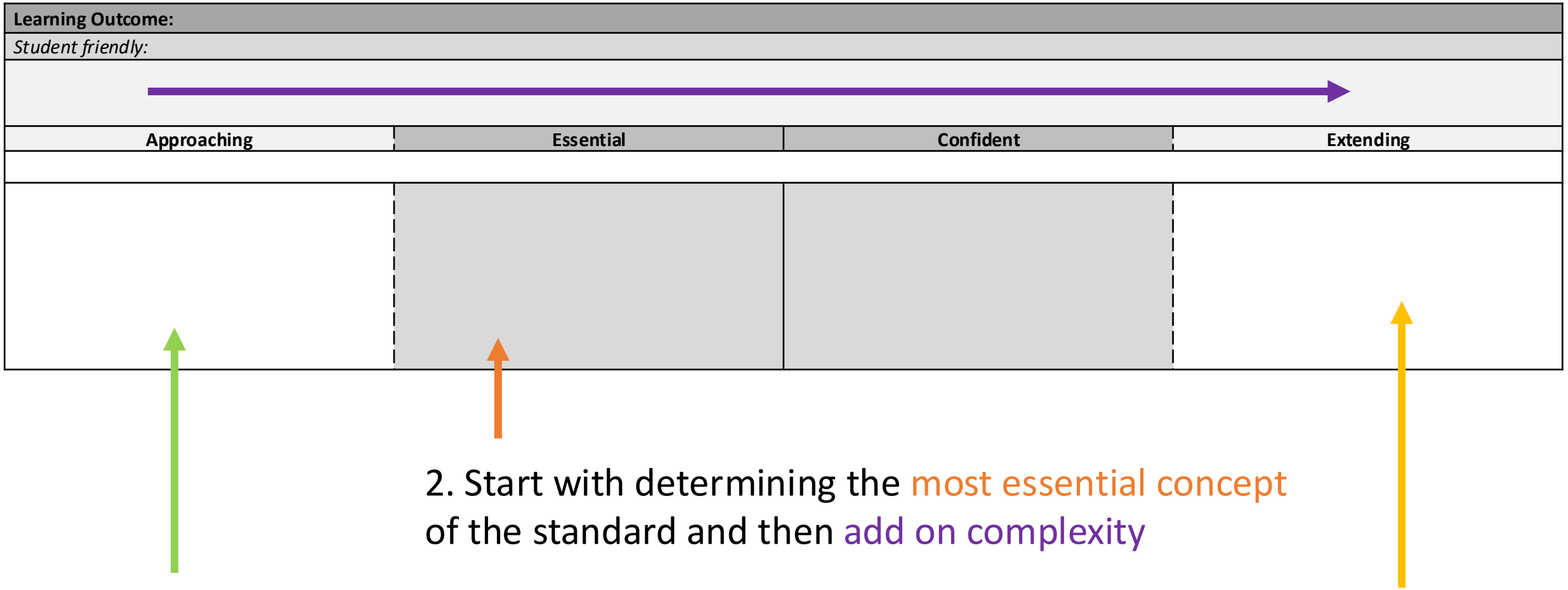
Learning Continuums

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



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

Next Generation Science Standards (NGSS)		
Subject Area: Science	**Strand: Matter and Its Interactions**	**Grade: 5**
Performance Expectation: 5-PS1-1 **Students can develop a model to describe that matter is made of particles too small to be seen**	**Guiding Unit Question:** How do we know that something exists if we cannot see it?	
Unit Vocabulary (Content): properties, structures, scale, proportion, quantity, models, particles, bulk matter,	**Unit Vocabulary (Skills):** make, observe	

Foundations	Student Friendly Language	Access Point	Essential	Confident	Extend
Science & Engineering Practices	I can make a model to help me understand an idea by:	following/ participating in creating a model	planning and creating a model	creating a model to solve a problem	Adjusting or revising a model I have created
Disciplinary Core Ideas	I know that matter is made up of particles that are too small to see by: I know that models can help us see particles that are too small to see by:	describing what matter is describing that there are different states of matter describing examples of different kinds of matter in the world	describing what bulk matter is describing that matter (that I can see) is made up of tiny particles (that are too small to see) describing examples of models that help to observe particles that are too small to see	describing how collecting many tiny particles can help us observe how matter takes up space describing which part of the model is bulk matter, and which part of the model is particles	describing the relationship between matter and particles using the model to describe the relationship between matter and how particles move when they are collected
Crosscutting Concepts	I know that objects in the world can be very large and very small by:	describing objects in the world that are very small and very large	describing what microscopic and macroscopic is and examples of each in the world	describing what is similar and what is different between microscopic and macroscopic objects in the world	describing what scale is and how it helps us understand microscopic and macroscopic objects

***Description: can include but are not limited to written, oral, pictorial, and kinesthetic**

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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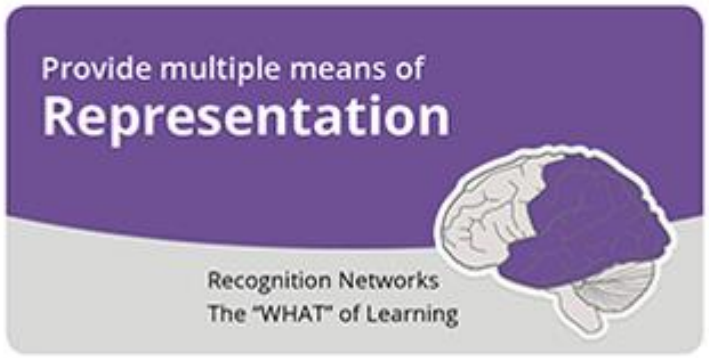
Session 4: Inclusive and standards based assessment

Universal Design for Learning: The Ramp for Learning



Teacher Team UDL Guidelines Self-Assessment & Target Goal Planner **Date:**

UDL Language		Accessible Language		Teacher Team UDL Reflection & Self-Assessment		
UDL Guideline	**Providing Multiple Means of Engagement**	**Goal Area**	**Student Engagement**			
7	**Provide options for recruiting interest**	**Goal**	**I can support students to be interested in what we are learning about by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
7.1	• Optimizing individual choice and autonomy	**Objective**	• giving students choice and control over what they are learning about (e.g. content, examples used)	☐	☐	☐
7.2	• Optimizing relevance, value & authenticity	**Objective**	• making learning relevant to the student's lives and connecting it to real world problems that are important to the students	☐	☐	☐
7.3	• Minimize threats & distractions	**Objective**	• reducing distractions in the classroom and building a safe place for students to take risks	☐	☐	☐
8	**Providing options for sustaining Effort & Persistence**	**Goal**	**I can support students to be motivated by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
8.1	• Heighten Salience of goals and objectives	**Objective**	• clearly communicating learning goals and why tasks and activities matter	☐	☐	☐
8.2	• Vary demands and resources to optimize challenge	**Objective**	• scaffolding learning by starting with accessibility and adding on challenge in goals and tasks	☐	☐	☐
8.3	• Foster collaboration and community	**Objective**	• building a community where learners work together	☐	☐	☐
8.4	• Increase mastery-oriented feedback	**Objective**	• providing ongoing formative feedback that is relevant, clear, accessible and timely	☐	☐	☐
9	**Provide options for Self-Regulation**	**Goal**	**I can support learners to effective at coping and engaging successfully with the learning environment by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
9.1	• Promote expectations and beliefs that optimize motivation	**Objective**	• helping students set learning goals that build confidence and help them take ownership of their learning	☐	☐	☐
9.2	• Facilitate personal coping skills and strategies	**Objective**	• teaching how to manage emotional responses & about healthy emotional responses and interactions	☐	☐	☐
9.3	• Develop self-assessment and reflection	**Objective**	• by helping students to increase their awareness of how they are progressing towards their goal & how to learn from their mistakes	☐	☐	☐
Our UDL Team Target Goal is:						

Teacher Team UDL Guidelines Self-Assessment & Target Goal Planner **Date:**

UDL Language		Accessible Language		Teacher Team UDL Reflection & Self-Assessment		
UDL Guideline	**Providing Multiple Means of Representation**	**Goal Area**	**Sharing "what" students are learning**			
1	**Provide options for perception**	**Goal**	**We can present new information to students so that they understand it by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
1.1	• Offer ways of customizing the display of information	**Objective**	• Sharing information in formats that are flexible	☐	☐	☐
1.2	• Offer alternatives for auditory information	**Objective**	• Utilizing modalities that compliment auditory information (visuals, tactile, movements etc.)	☐	☐	☐
1.3	• Offer alternatives for visual information	**Objective**	• Utilizing modalities that compliment visual information (descriptions, objects, auditory clues, reader)	☐	☐	☐
2	**Providing options for language and symbols**	**Goal**	**We can share different options/ examples of language and symbols to support student understanding by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
2.1	• Clarify vocabulary and symbols	**Objective**	• Pre-teaching important vocabulary, symbols, numbers labels in many ways (written, oral, visual examples)	☐	☐	☐
2.2	• Clarify syntax and structure	**Objective**	• Highlighting and teaching patterns and properties in systems (e.g. grammar, notation, taxonomies, equations etc.)	☐	☐	☐
2.3	• Support decoding of text, mathematical notation and symbols	**Objective**	• Teaching and using supports and strategies for students to understand written text, mathematical notation and symbol use (unless the goal is de-coding ability)	☐	☐	☐
2.4	• Promote understanding across languages	**Objective**	• Teaching and using translators, descriptions, movement & visuals to support understanding in unfamiliar and multiple languages	☐	☐	☐
2.5	• Illustrate through multi media	**Objective**	• Using multi-media to support understanding (videos, graphics, activities)	☐	☐	☐

UDL Guidelines – Engagement, CAST 2019 adapted by Shelley Moore, 2019

3	**Provide options comprehension**	**Goal**	**We can provide options to help students understand new information by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
3.1	• activate or supply background knowledge	**Objective**	• building prior knowledge before teaching new information	☐	☐	☐
3.2	• Highlight patterns, critical features, big ideas and relationships	**Objective**	• Connecting new learning to big ideas, other learning, other contexts (familiar and unfamiliar)	☐	☐	☐
3.3	• Guide information processing and visualization	**Objective**	• Including learning tasks that allow students to process new information (e.g. summarizing, categorizing, prioritizing)	☐	☐	☐
3.4	• Maximize transfer and generalization	**Objective**	• Giving students opportunities to connect how they learned and how they can transfer those learning skills/ strategies/ supports to new settings	☐	☐	☐
Our UDL Team Target Goal is:						

Teacher Team UDL Guidelines Self-Assessment & Target Goal Planner **Date:**

UDL Language		Accessible Language		Teacher Team UDL Reflection & Self-Assessment		
UDL Guideline	**Providing Multiple Means of Action & Expression**	**Goal Area**	**Sharing and representing new information for student learning**			
4	**Providing options for physical action**	**Goal**	**We can provide options for students to communicate using tools and assistive technology by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
4.1	• Vary the methods for response and navigation	**Objective**	• providing tools/ assistive technologies to support motor skills to interact with instructional materials (i.e. alternatives to pencil/paper)	☐	☐	☐
4.2	• Optimize access to tools and assistive technologies	**Objective**	• providing support and teaching how to use tools effectively (i.e. teaching how to use tools/assistive technologies as supports)	☐	☐	☐
5	**Provide options for expression and communication**	**Goal**	**We can provide options for students to show what they know & communicate their learning by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
5.1	• Use multi-media for communication	**Objective**	• teaching new formats to develop a wider range of expression using multimedia and materials (oral/visual/written) (concrete/pictoral/abstract)	☐	☐	☐
5.2	• Use media tools for construction and composition	**Objective**	• offering supports and strategies for students to create written output (word prediction, text-to-speech, mapping tools, sentence starters etc.)	☐	☐	☐
5.3	• Build fluencies with graduated levels of support of support for practice and performance	**Objective**	• supporting increasing fluency by offering scaffolded options of challenge and supports to increase independence	☐	☐	☐
6	**Provide options for executive functions**	**Goal**	**We can provide options for students to know and set goals and make decisions about what supports they need to meet the goals by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
6.1	• Guide appropriate goals setting	**Objective**	• guiding students through reflection, self-assessment and goal setting around curricular goal complexities and competency goal setting	☐	☐	☐
6.2	• Support planning and strategy development	**Objective**	• modelling how to use supports and strategies and empowering students to make individual decisions about what they need to meet goals	☐	☐	☐
6.3	• Enhance managing information and resources	**Objective**	• teaching students to organize their evidence and determine their best examples of learning	☐	☐	☐
6.4	• Enhance capacity for monitoring progress	**Objective**	• using assessment checklists, learning maps, one-point rubrics and student work samples to provide feedback to students and model self-assessment			
Our UDL Team Target Goal is:						

Universal Design for Learning: Lesson Design

Mini Lesson

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

Guiding Unit Question:

Lesson Goal(s):

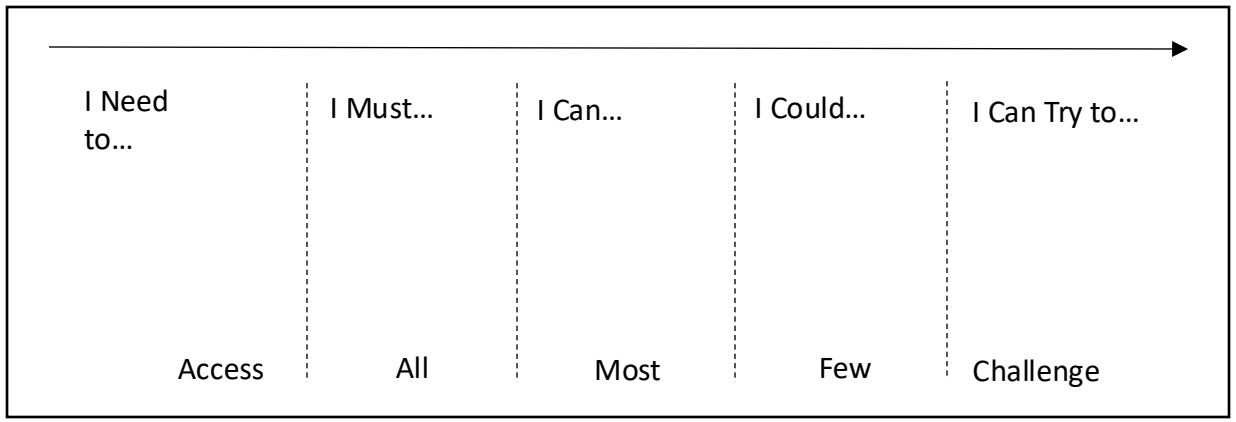
Date

Connecting Activity:

Supports

Mini Lesson:

Processing Tasks:



Transforming & Personalizing Activity:

Universal Design for Learning: Lesson Design

Mini Lesson

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

Backwards Design Planning

Grade: 5	Subject Area: Science	Strand/Topic: Structure and Properties of Matter
Learning Standard: 5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen		**Unit Guiding Question(s):** How can I use a model to help me understand that some matter is made up of particles that are too small to see?
Content Vocabulary: model, matter, particles, idea, bulk matter		**Skills Vocabulary: create, build, change, solve a problem, observe**
Learning Goals	**Curricular Language** **What do Students need to Know and Do?**	**Student Friendly Language**
Science and Engineering Practices (skills)	**Developing and Using Models** building and revising simple models and using models to represent events and design solutions. Use models to describe phenomena.	• I can create and improve a model • I can use a model to show an idea • I can use a model to solve a problem
Disciplinary Core Ideas (knowledge)	**PS1.A: Structure and Properties of Matter** Matter of any type can be subdivided into particles that are too small to see matter still exists and can be detected by other means. A model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations including the inflation and shape of a balloon and the effects of air on larger particles or objects.	• I know that matter can be broken apart into tiny particles that are too small to see • I know that even if tiny particles are too small for my eyes to see, there are other ways to observe them • I know that a model is a way to observe tiny particles too small to see • I know some examples of models that can help me observe tiny particles that are too small to see
Crosscutting Concepts (understanding)	**Scale, Proportion, and Quantity** Natural objects exist from the very small to the immensely large.	I understand that there are things that are very tiny and very large

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Subject Area: Science	**Strand: Matter and Its Interactions**	**Grade: 5**
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Foundations	Student Friendly Language	Access Point	Essential	Confident	Extend
Science & Engineering Practices	I can make a model to help me understand an idea by:	following/ participating in creating a model	planning and creating a model	creating a model to solve a problem	Adjusting or revising a model I have created
Disciplinary Core Ideas	I know that matter is made up of particles that are too small to see by: I know that models can help us see particles that are too small to see by:	describing what matter is describing that there are different states of matter describing examples of different kinds of matter in the world	describing what bulk matter is describing that matter (that I can see) is made up of tiny particles (that are too small to see) describing examples of models that help to observe particles that are too small to see	describing how collecting many tiny particles can help us observe how matter takes up space describing which part of the model is bulk matter, and which part of the model is particles	describing the relationship between matter and particles using the model to describe the relationship between matter and how particles move when they are collected
Crosscutting Concepts	I know that objects in the world can be very large and very small by:	describing objects in the world that are very small and very large	describing what microscopic and macroscopic is and examples of each in the world	describing what is similar and what is different between microscopic and macroscopic objects in the world	describing what scale is and how it helps us understand microscopic and macroscopic objects

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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:

Lesson Goal(s):

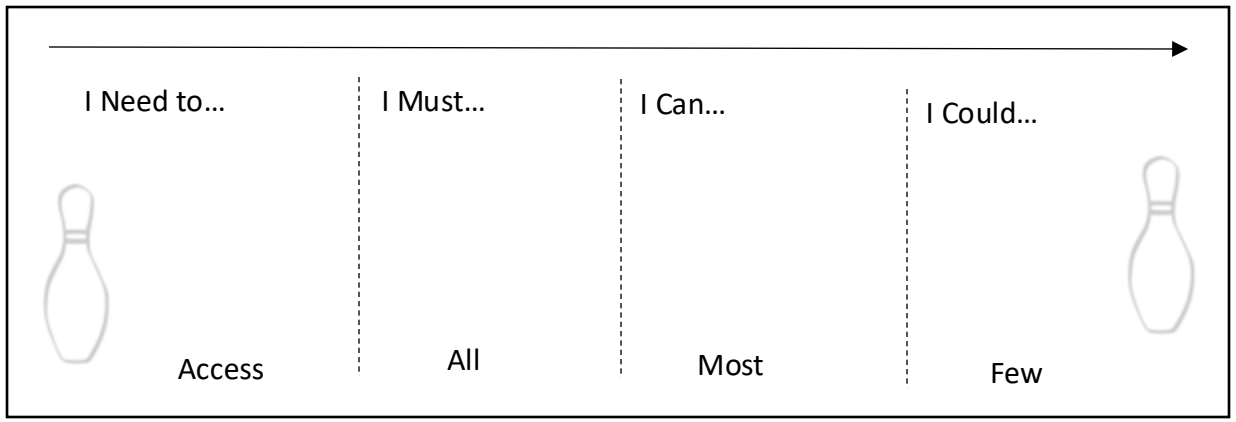
Date

Connecting Activity:

Supports

Mini Lesson:

Processing Tasks



Transforming & Personalizing Activity:

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 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)

Backwards Design Planning

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Disciplinary Core Ideas (knowledge)	**PS1.A: Structure and Properties of Matter** Matter of any type can be subdivided into particles that are too small to see matter still exists and can be detected by other means. A model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations including the inflation and shape of a balloon and the effects of air on larger particles or objects.	• I know that matter can be broken apart into tiny particles that are too small to see • I know that even if tiny particles are too small for my eyes to see, there are other ways to observe them • I know that a model is a way to observe tiny particles too small to see • I know some examples of models that can help me observe tiny particles that are too small to see
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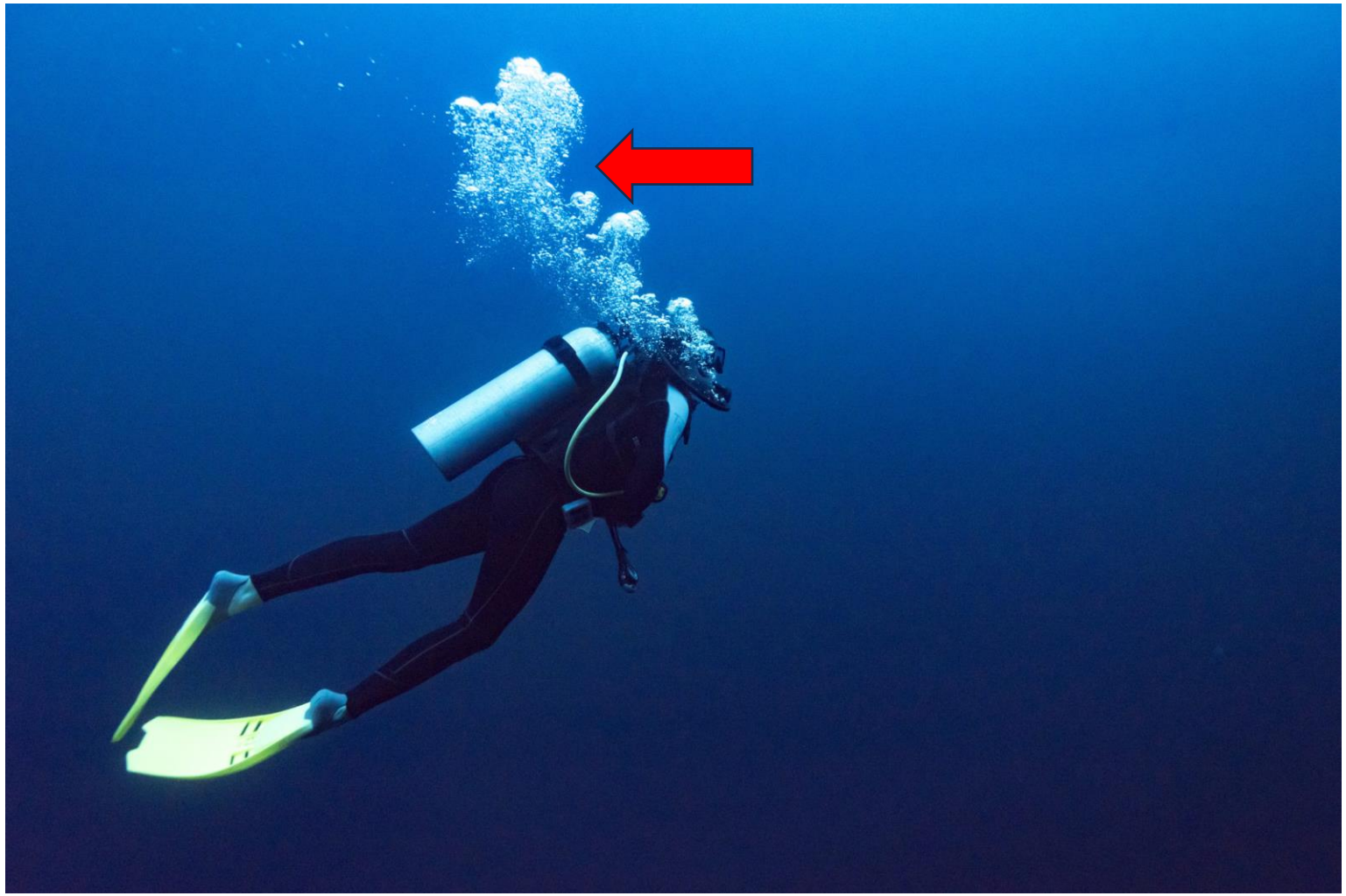
Foundations	Student Friendly Language	Access Point	Essential	Confident	Extend
Science & Engineering Practices	I can make a model to help me understand an idea by:	following/ participating in creating a model	planning and creating a model	creating a model to solve a problem	Adjusting or revising a model I have created
Disciplinary Core Ideas	I know that matter is made up of particles that are too small to see by: I know that models can help us see particles that are too small to see by:	describing what matter is describing that there are different states of matter describing examples of different kinds of matter in the world	describing what bulk matter is describing that matter (that I can see) is made up of tiny particles (that are too small to see) describing examples of models that help to observe particles that are too small to see	describing how collecting many tiny particles can help us observe how matter takes up space describing which part of the model is bulk matter, and which part of the model is particles	describing the relationship between matter and particles using the model to describe the relationship between matter and how particles move when they are collected
Crosscutting Concepts	I know that objects in the world can be very large and very small by:	describing objects in the world that are very small and very large	describing what microscopic and macroscopic is and examples of each in the world	describing what is similar and what is different between microscopic and macroscopic objects in the world	describing what scale is and how it helps us understand microscopic and macroscopic objects

***Description: can include but are not limited to written, oral, pictorial, and kinesthetic**

UDL Lesson Plan: Connect Phase

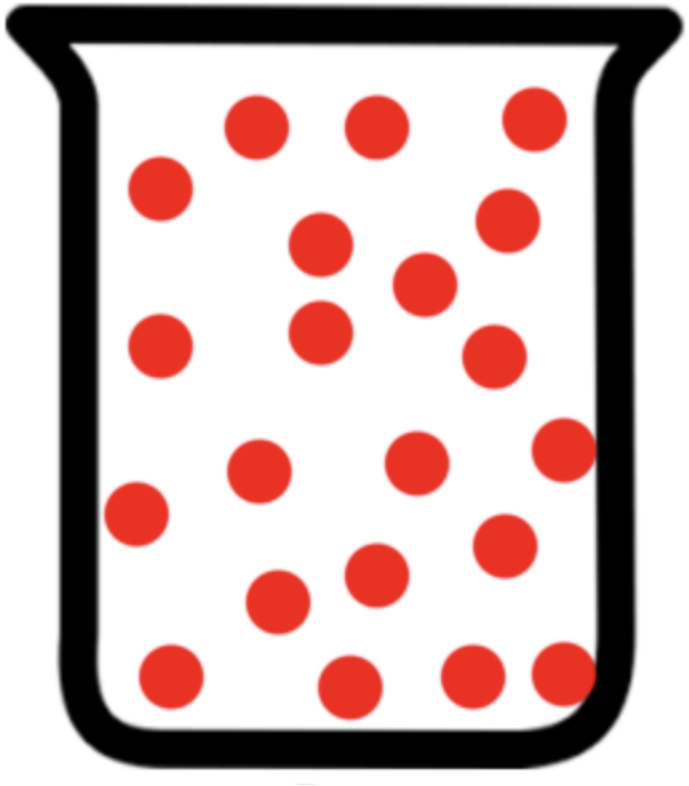
Universal Strategies	UDL Indicators Targeted	Support Needs Impacted	Students in Mind
Picture set	7.2, 8.3, 1.1, 1.2, 1.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 4.1, 5.1, 5.3	Attention, anxiety, communication, engagement/ motivation, executive functioning, intellectual ability, language, literacy, memory, self 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.

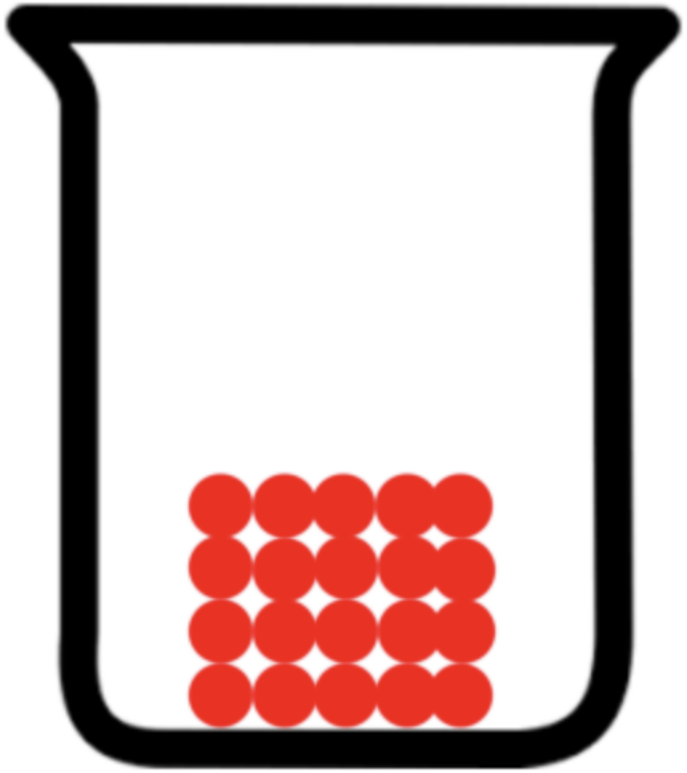
How is this image different or the same as the other images?

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?

Dr. Shelley Moore, 2024

Describe what you see.

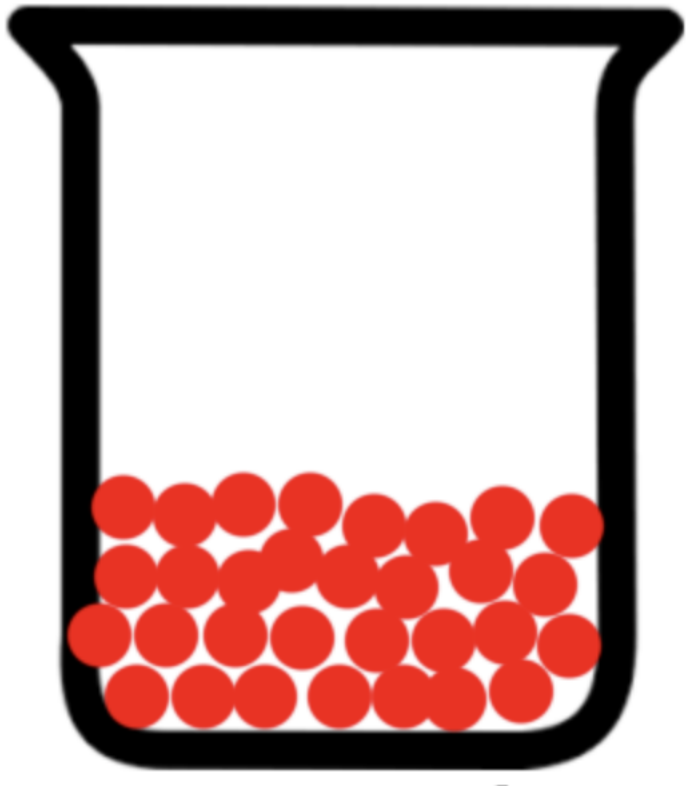
How is this image different or the same as the other images?

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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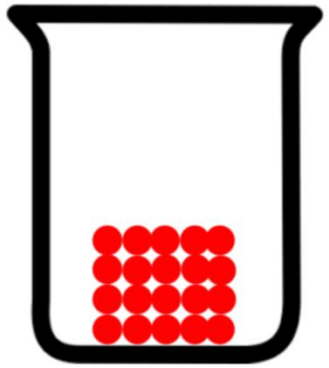
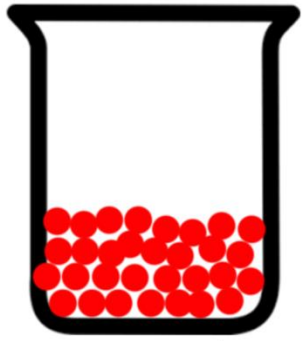
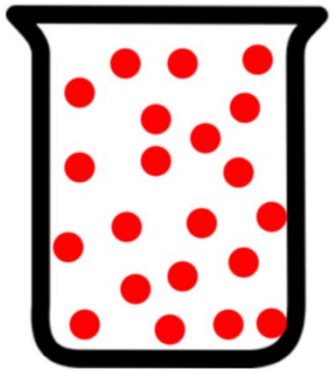
What do all these images have in common?







All the images are different
states of matter

SOLID

LIQUID

GAS

Dr. Shelley Moore, 2024

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

SOLID

LIQUID

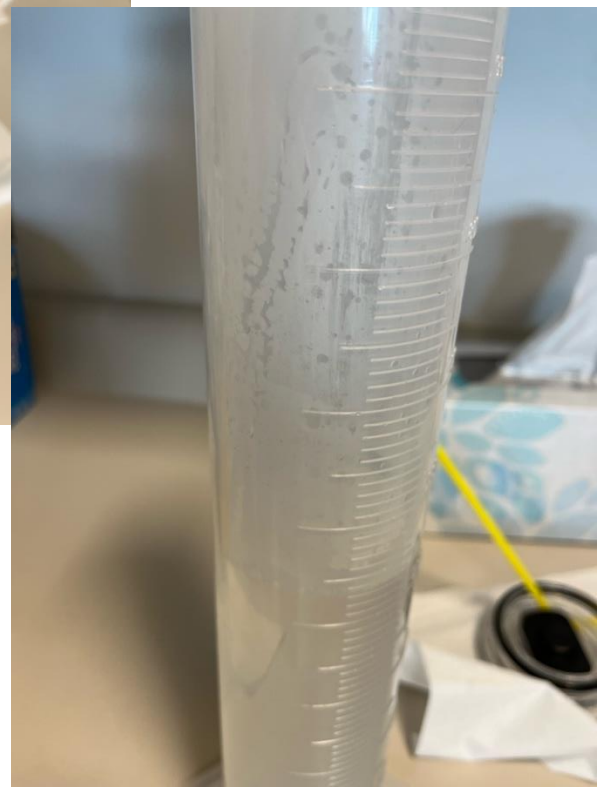
GAS

Dr. Shelley Moore, 2024

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?

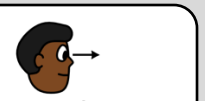
Learning Goal: I know that matter can be broken apart into tiny particles that are too small to see

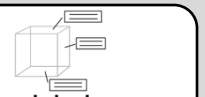
Task: Observe a science demonstration

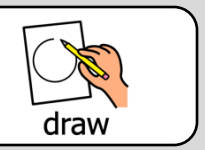
Everyone starts together

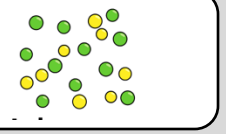
Go as far as you can!

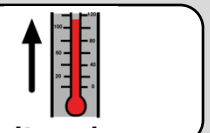
I **NEED** to:	• Watch the science demonstration • Create a diagram that shows the science demonstration that you watched
I **MUST**:	• Label your diagram with vocabulary words
I **CAN**:	• For each state of matter, draw the tiny particles that are too small to see
I **COULD**:	• Show on your drawing,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











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

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)

Dr. Shelley Moore, 2024

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 make this lesson inclusive?

How did UDL make the grade level curriculum accessible for ALL?

Shelley MOORE PH.D.
2023

Grade: 2	Subject Area: Science	Planning Team: Kim (CT2), Shelley, Jessica (PA), Raime (P), Kendra (DI)
Big Idea(s): Water is essential to all living things, and it cycles through the environment.		**Unit Guiding Question(s):** Why is water important to living things and the environment?
Key Vocabulary: wetlands, stream, underground water, Indian Ocean, glacier, Arctic Ocean, river, dug out/ pond, Pacific Ocean, Earth, fresh water Lake, Atlantic Ocean, Southern Ocean, salt water		

	Learning Standard	Student Friendly Language
What do students need to know? Content	water sources including local watersheds	I know different kinds of water sources on the Earth
Content	local First People's knowledge of water: connection to other systems	I know the local Frist Peoples' understanding of water
What do students need to do? Curricular Competencies Questioning and predicting	Ask questions about familiar objects and events	I can ask question about things I am curious about
What do students need to do? Curricular Competencies Processing and analyzing data and information	Sort and classify data and information using drawings, pictographs and provided tables	I can sort organize my learning in different ways
What do students need to do? Curricular Competencies Communicating	Communicate observations and ideas using oral or written language, drawing, or role-play	I can share my learning and ideas in different ways
Who do student need to be? Core Competency Goals	**I am a critical thinker…**	

Grade: 2	Subject Area: Science	Planning Team: Kim (CT2), Shelley, Jessica (PA), Raime (P), Kendra (DI)
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Who do student need to be? **Core Competency Goals**	**I am a critical thinker…**	

Content Goal: water sources including local watersheds				
Student friendly: I know different kinds of water sources on the Earth				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
I know the difference between land and water on the Earth I know that Earth has salt water and fresh water	I know that water is a natural resource that is found in oceans, lakes, ponds, rivers, streams, wetlands, and glaciers	I know that freshwater habitats are found in rivers, ponds, lakes, and wetlands I know that saltwater habitats are found in oceans and seas	I know that much of Earth's fresh water is in the form of ice and snow at the north and south poles, found in glaciers, or stored underground (groundwater)	I know that clean fresh water has no taste, colour, or smell

Curricular Competency Goal: **Processing and analyzing data and information** Sort and classify data and information using drawings, pictographs and provided tables				
Student friendly: I can sort and organize information in different ways				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
I can sort information into familiar categories using concrete familiar objects	I can sort information by a category or theme I can organize information visually by following a model	I can organize information visually with pictures and drawings I can organize information in a table by following a model	I can create a table or visual to organize information and data	I can organize data with multiple variables visually or on a table

Guiding Unit Question: Why is water important to living things and the environment?

Lesson Goal(s):
I know different kinds of water sources on the Earth
I can sort and organize information in different ways

Date

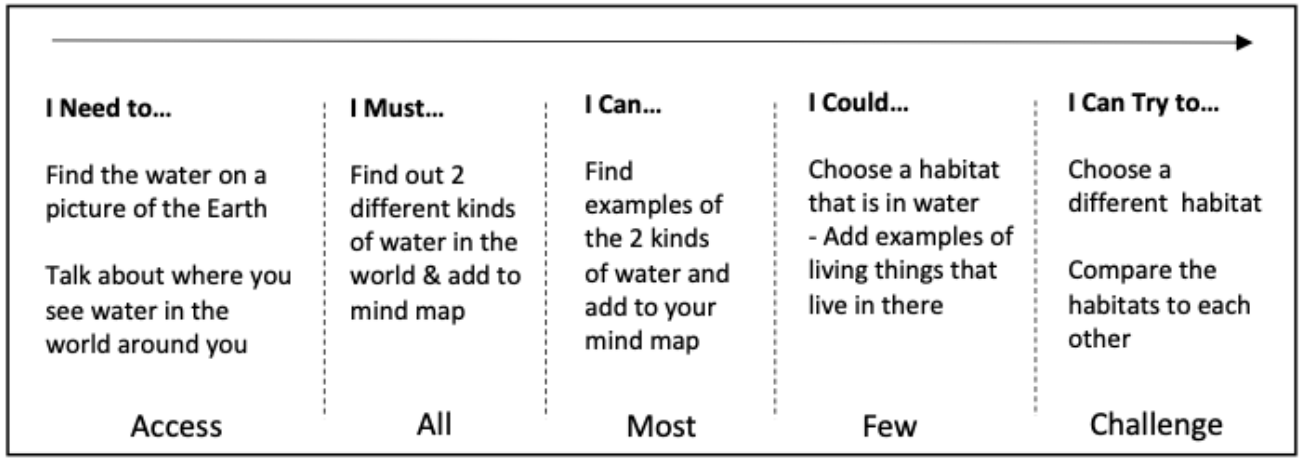
Connecting Activity: picture/word sort using unit vocabulary

Supports

- Visuals (JR, KM, JO)
- Graphic organizer (LP, IM, RE, JR, JO)
- Different levels of text (JR, LL)
- Pre teach vocab (KM, JO, JR)
- Hands on (J, KO)
- Step by step instructions (IM, RE, JR, KO)
- Options for challenge (SD)
- Accessible entry point (JR)
- Model to refer to(JR, KM, JO, LL) (writing)

Mini Lesson: Watch a video about the different kinds and sources of water

Processing Tasks: Modelling the building of a mind maps to organize different kinds and sources of water



Transforming & Personalizing Activity:
Connect 1/Connect 2 – what did we learn about water today?

Content Goal: water sources including local watersheds				
Student friendly: I know different kinds of water sources on the Earth				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
→				
I know the difference between land and water on the Earth I know that Earth has salt water and fresh water	I know that water is a natural resource that is found in oceans, lakes, ponds, rivers, streams, wetlands, and glaciers	I know that freshwater habitats are found in rivers, ponds, lakes, and wetlands I know that saltwater habitats are found in oceans and seas	I know that much of Earth's fresh water is in the form of ice and snow at the north and south poles, found in glaciers, or stored underground (groundwater)	I know that clean fresh water has no taste, colour, or smell

Curricular Competency Goal: **Processing and analyzing data and information** Sort and classify data and information using drawings, pictographs and provided tables				
Student friendly: I can sort and organize information in different ways				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
→				
I can sort information into familiar categories using concrete familiar objects	I can sort information by a category or theme I can organize information visually by following a model	I can organize information visually with pictures and drawings I can organize information in a table by following a model	I can create a table or visual to organize information and data	I can organize data with multiple variables visually or on a table

The Lesson

Why is water important to living things and the environment?

Our Goals Today!

I know different kinds of water sources on the Earth

I can sort and organize information in different ways

Important Words

wetlands
stream
underground water
Indian Ocean
glacier
salt water
Arctic Ocean
river

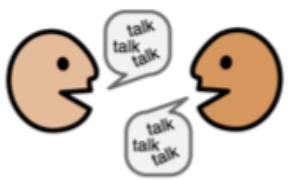
dug out/ pond
Pacific Ocean
Earth
fresh water
lake
Atlantic Ocean
Southern Ocean

Connect Activity

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?



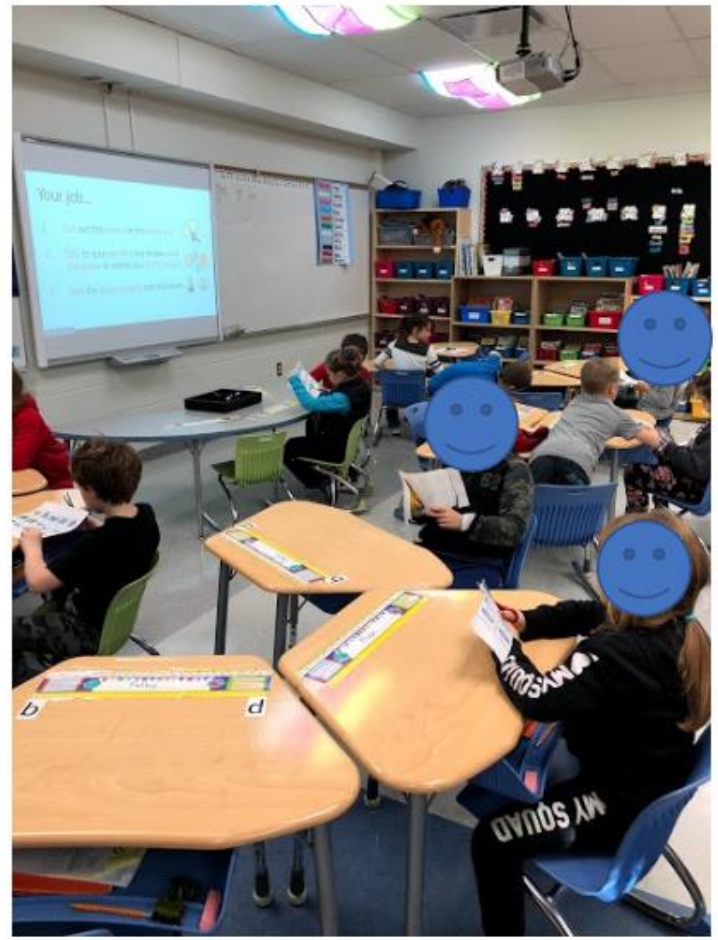
3. Sort the picture words into the boxes

Connect Activity

I know these words!

I’m not sure about these words.

Connect Activity



Mini Lesson

Video

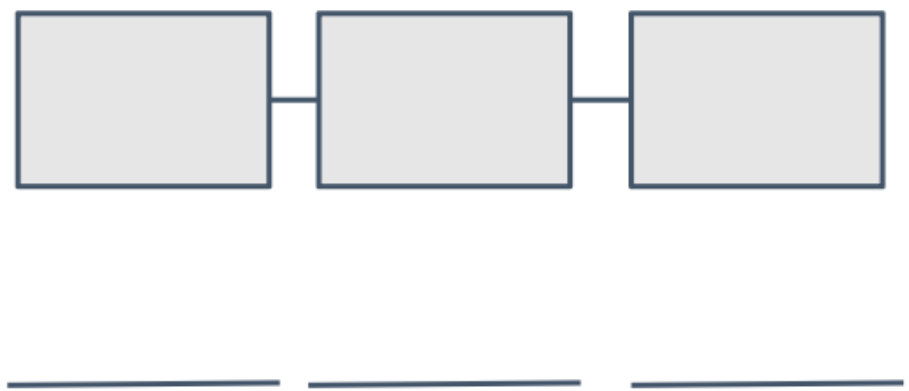
https://www.youtube.com/watch?v=bNWuQD7QHBc


Earth
Water
On the Way to the Beach
BY HENRY COLE
Splash in a Pond
ENV

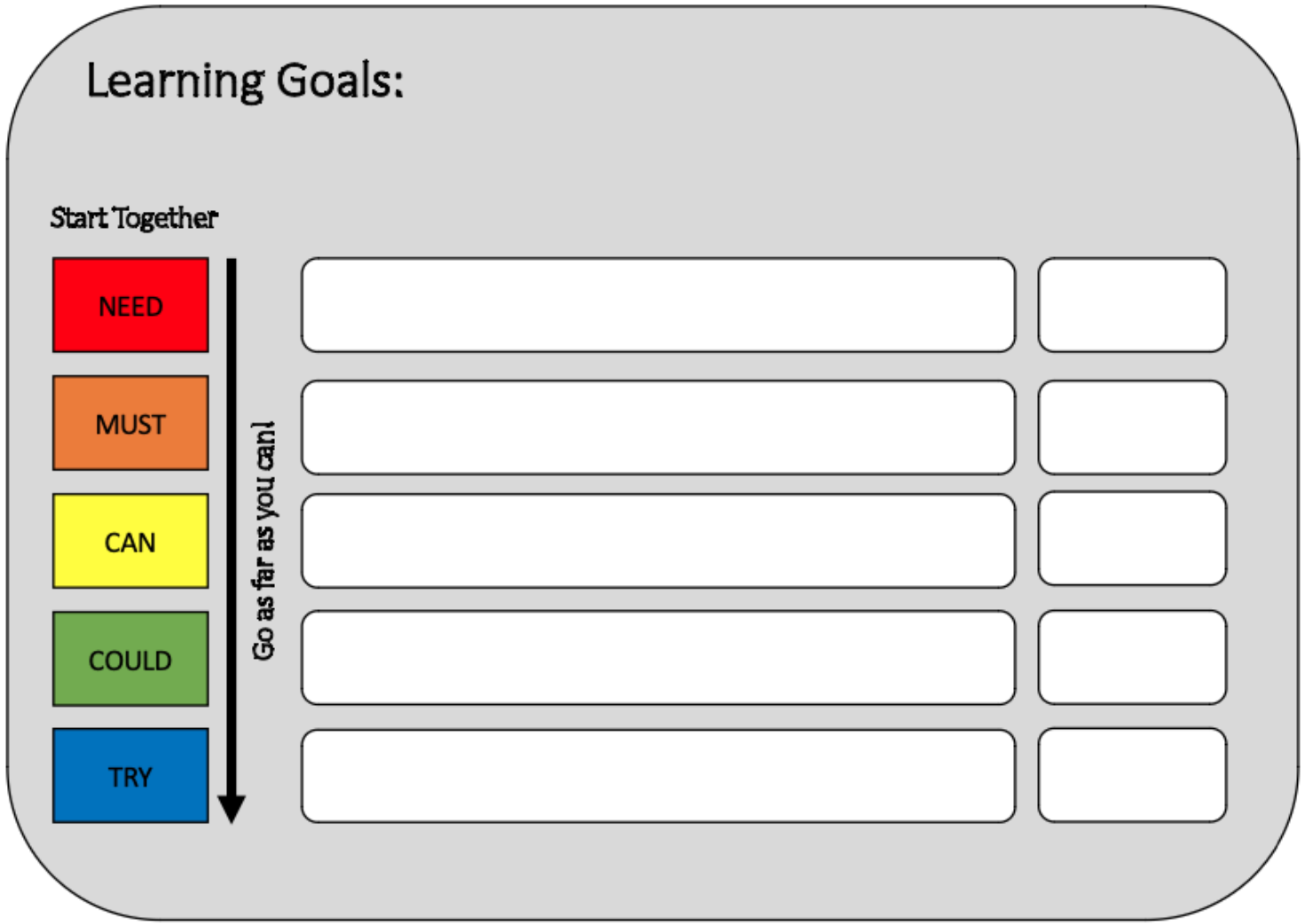

Let's Explore
Seashore and Tides
Life in a Pond
The Water Cycle
OCEAN SEA
Protecting Global Environments
ENV

Processing Activity

What can we learn about water?



Template: Activity Scaffold

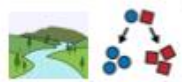


Processing Activity

I know different kinds of water sources on the Earth
I can sort and organize information in different ways

Start Together

Go as far as you can!

NEED	Find water on a picture of the Earth Figue out whiich part of the Earth is water and whiich is land?	
MUST	Find the different kinds of water on the Earth Label the mind map with these two categories	
CAN	Find the examples where to find the different kind of water on the Earth Sort the pictures on the mind map	
COULD	Choose a habitat that is in water Sort & organize examples of living things that live on the mnid map	
TRY	Choose another habitat that is in water Sort & organize examples of living things that live on the mnid map and compare th habitats	

NEED

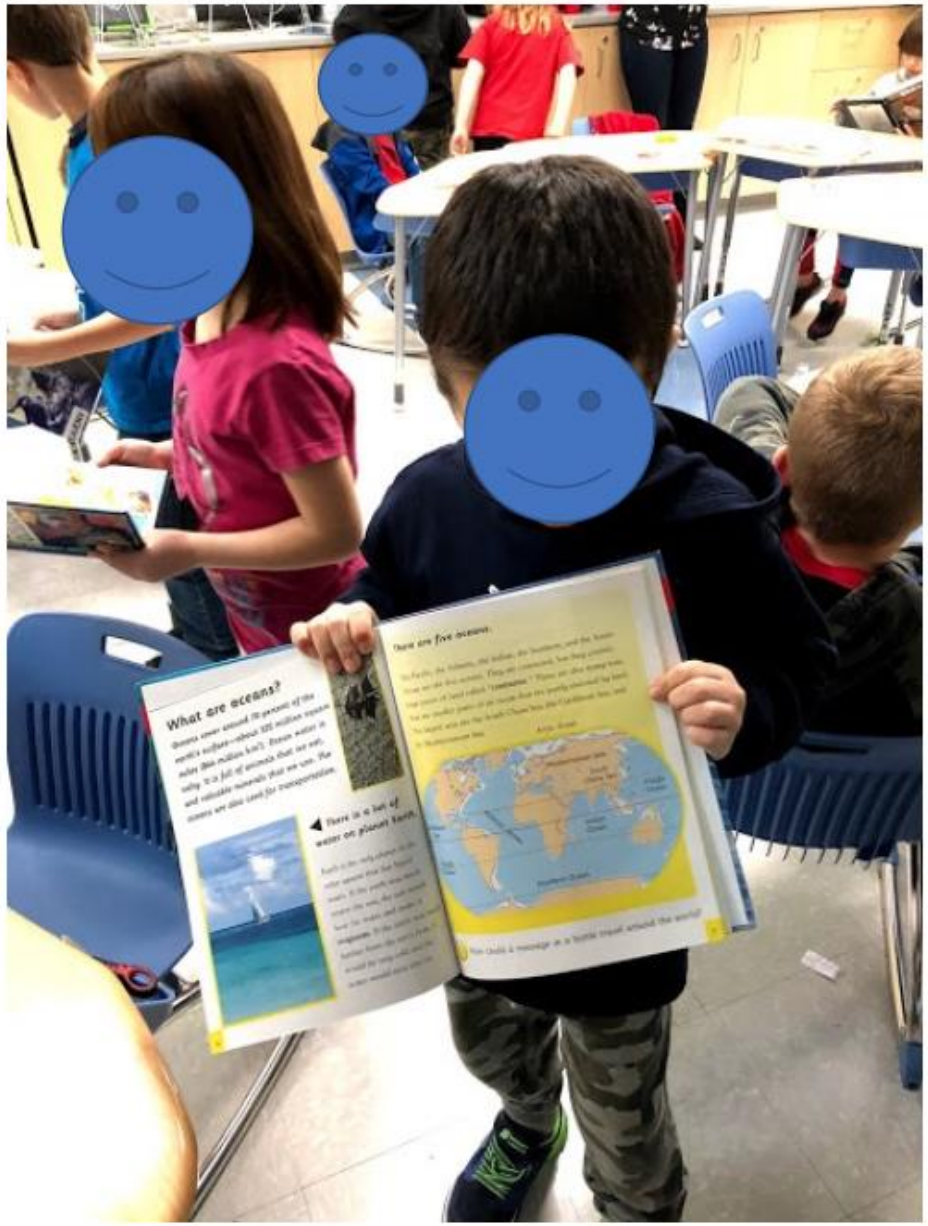
Find water on a picture of the Earth

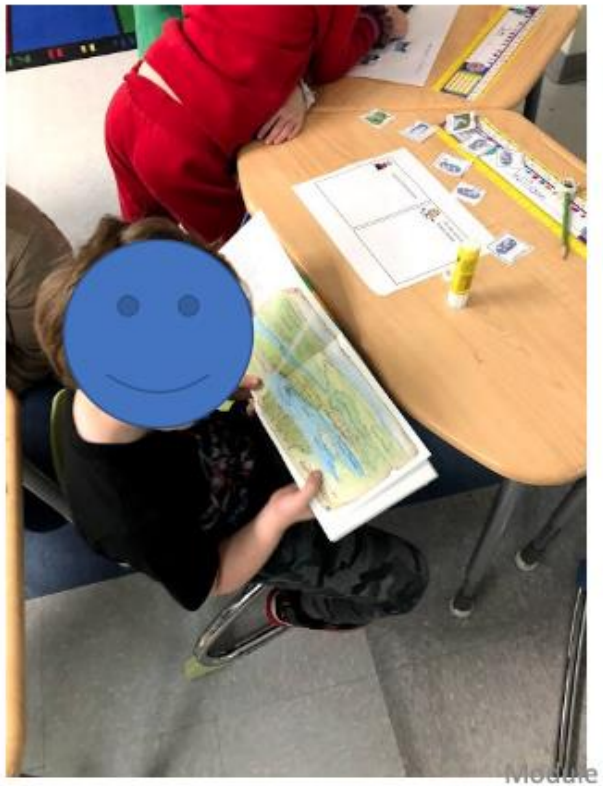
Figue out whiich part of the Earth is water and whiich is land

MUST

Find the different kinds of water on the Earth

Sort on the mind map





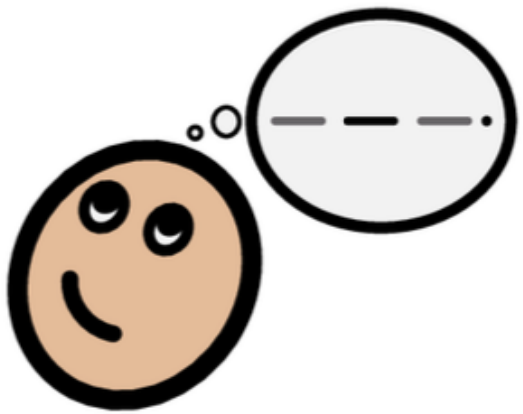
CAN

Find the examples where to find the different kind of water on the Earth
Sort the pictures on the mind map

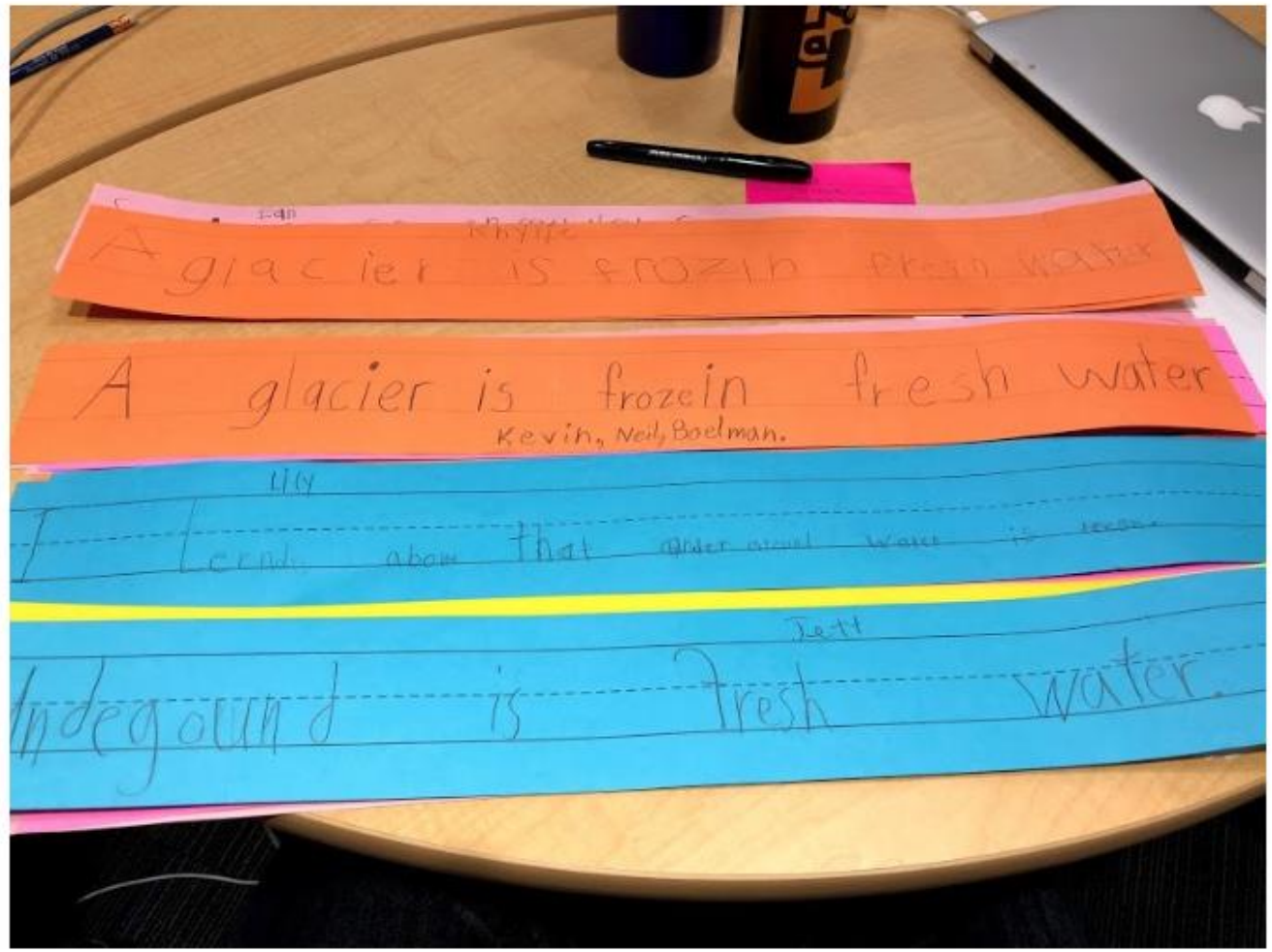
Transforming & Personalizing Activity

What did we learn about water?

1. Choose a word that you know!
2. Use the word to make a learning sentence
3. Use two words to make a learning sentence



Transforming & Personalizing Activity



Teacher Team UDL Guidelines Self-Assessment & Target Goal Planner **Date:**

UDL Language: Engagement		Accessible Language		Teacher Team UDL Reflection & Self-Assessment		
UDL Guideline	**Providing Multiple Means of Engagement**	**Goal Area**	**Student Engagement**			
7	**Provide options for recruiting interest**	**Goal**	**I can support students to be interested in what we are learning about by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
7.1	• Optimizing individual choice and autonomy	**Objective**	• giving students choice and control over what they are learning about (e.g. content, examples used)	☐	☐	☐
7.2	• Optimizing relevance, value & authenticity	**Objective**	• making learning relevant to the student's lives and connecting it to real world problems that are important to the students	☐	☐	☐
7.3	• Minimize threats & distractions	**Objective**	• reducing distractions in the classroom and building a safe place for students to take risks	☐	☐	☐
8	**Providing options for sustaining Effort & Persistence**	**Goal**	**I can support students to be motivated by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
8.1	• Heighten Salience of goals and objectives	**Objective**	• clearly communicating learning goals/ intentions and why tasks and activities matter	☐	☐	☐
8.2	• Vary demands and resources to optimize challenge	**Objective**	• scaffolding learning by starting with accessibility and adding on challenge in goals and tasks	☐	☐	☐
8.3	• Foster collaboration and community	**Objective**	• building a community where learners work together by teaching collaboration and group work skills	☐	☐	☐
8.4	• Increase mastery-oriented feedback	**Objective**	• providing ongoing formative feedback that is relevant, clear, accessible and timely	☐	☐	☐
9	**Provide options for Self-Regulation**	**Goal**	**I can support learners to effective at coping and engaging successfully with the learning environment by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
9.1	• Promote expectations and beliefs that optimize motivation	**Objective**	• helping students set learning goals that build confidence and help them take ownership of their learning	☐	☐	☐
9.2	• Facilitate personal coping skills and strategies	**Objective**	• teaching how to manage emotional responses & about healthy emotional responses and interactions	☐	☐	☐
9.3	• Develop self-assessment and reflection	**Objective**	• by helping students to increase their awareness of how they are progressing towards their goal & how to learn from their mistakes	☐	☐	☐
Our UDL Team Target Goal is:						

UDL Guidelines – Engagement, CAST 2019 adapted by Shelley Moore, 2019

Teacher Team UDL Guidelines Self-Assessment & Target Goal Planner **Date:**

UDL Language: Representation		Accessible Language		Teacher Team UDL Reflection & Self-Assessment		
UDL Guideline	Providing Multiple Means of Representation	Goal Area	Sharing "what" students are learning			
1	**Provide options for perception**	**Goal**	**We can present new information to students so that they understand it by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
1.1	• Offer ways of customizing the display of information	**Objective**	• Sharing information in formats that are flexible	☐	☐	☐
1.2	• Offer alternatives for auditory information	**Objective**	• Utilizing modalities that compliment auditory information (visuals, tactile, movements etc.)	☐	☐	☐
1.3	• Offer alternatives for visual information	**Objective**	• Utilizing modalities that compliment visual information (descriptions, objects, auditory clues, reader)	☐	☐	☐
2	**Providing options for language and symbols**	**Goal**	**We can share different options/ examples of language and symbols to support student understanding by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
2.1	• Clarify vocabulary and symbols	**Objective**	• Pre-teaching important vocabulary, symbols, numbers labels in many ways (written, oral, visual examples)	☐	☐	☐
2.2	• Clarify syntax and structure	**Objective**	• Highlighting and teaching patterns and properties in systems (e.g. grammar, notation, taxonomies, equations etc.)	☐	☐	☐
2.3	• Support decoding of text, mathematical notation and symbols	**Objective**	• Teaching and using supports and strategies for students to understand written text, mathematical notation and symbol use (unless the goal is de-coding ability)	☐	☐	☐
2.4	• Promote understanding across languages	**Objective**	• Teaching and using translators, descriptions, movement & visuals to support understanding in unfamiliar and multiple languages	☐	☐	☐
2.5	• Illustrate through multi media	**Objective**	• Using multi-media to support understanding (videos, graphics, activities)	☐	☐	☐

Teacher Team UDL Guidelines Self-Assessment & Target Goal Planner **Date:**

UDL Language: Expression		Accessible Language		Teacher Team UDL Reflection & Self-Assessment		
UDL Guideline	**Providing Multiple Means of Action & Expression**	**Goal Area**	**Sharing and representing new information for student learning**			
4	**Providing options for physical action**	**Goal**	**We can provide options for students to communicate using tools and assistive technology by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
4.1	• Vary the methods for response and navigation	**Objective**	• providing tools/ assistive technologies to support motor skills to interact with instructional materials (i.e. alternatives to pencil/paper)	☐	☐	☐
4.2	• Optimize access to tools and assistive technologies	**Objective**	• providing support and teaching how to use tools effectively (i.e. teaching how to use tools/assistive technologies as supports)	☐	☐	☐
5	**Provide options for expression and communication**	**Goal**	**We can provide options for students to show what they know & communicate their learning by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
5.1	• Use multi-media for communication	**Objective**	• teaching new formats to develop a wider range of expression using multimedia and materials (oral/visual/written) (concrete/pictoral/abstract)	☐	☐	☐
5.2	• Use media tools for construction and composition	**Objective**	• offering supports and strategies for students to create written output (word prediction, text-to-speech, mapping tools, sentence starters etc.)	☐	☐	☐
5.3	• Build fluencies with graduated levels of support of support for practice and performance	**Objective**	• supporting increasing fluency by offering scaffolded options of challenge and supports to increase independence	☐	☐	☐
6	**Provide options for executive functions**	**Goal**	**We can provide options for students to know and set goals and make decisions about what supports they need to meet the goals by:**	**We can do this!**	**We want to keep working on this!**	**This is our next step!**
6.1	• Guide appropriate goals setting	**Objective**	• guiding students through reflection, self-assessment and goal setting with curricular and core competencies	☐	☐	☐
6.2	• Support planning and strategy development	**Objective**	• modelling how to use supports and strategies and empowering students to make individual decisions about what they need to meet goals	☐	☐	☐
6.3	• Enhance managing information and resources	**Objective**	• teaching students to organize their evidence of learning and determine their best examples of learning	☐	☐	☐
6.4	• Enhance capacity for monitoring progress	**Objective**	• using assessment checklists, learning maps, one-point rubrics and student work samples to provide feedback to students and model self-assessment			
Our UDL Team Target Goal is:						

What make this lesson inclusive?

How did UDL make the grade level curriculum accessible for ALL?

Shelley MOORE PH.D.
2023

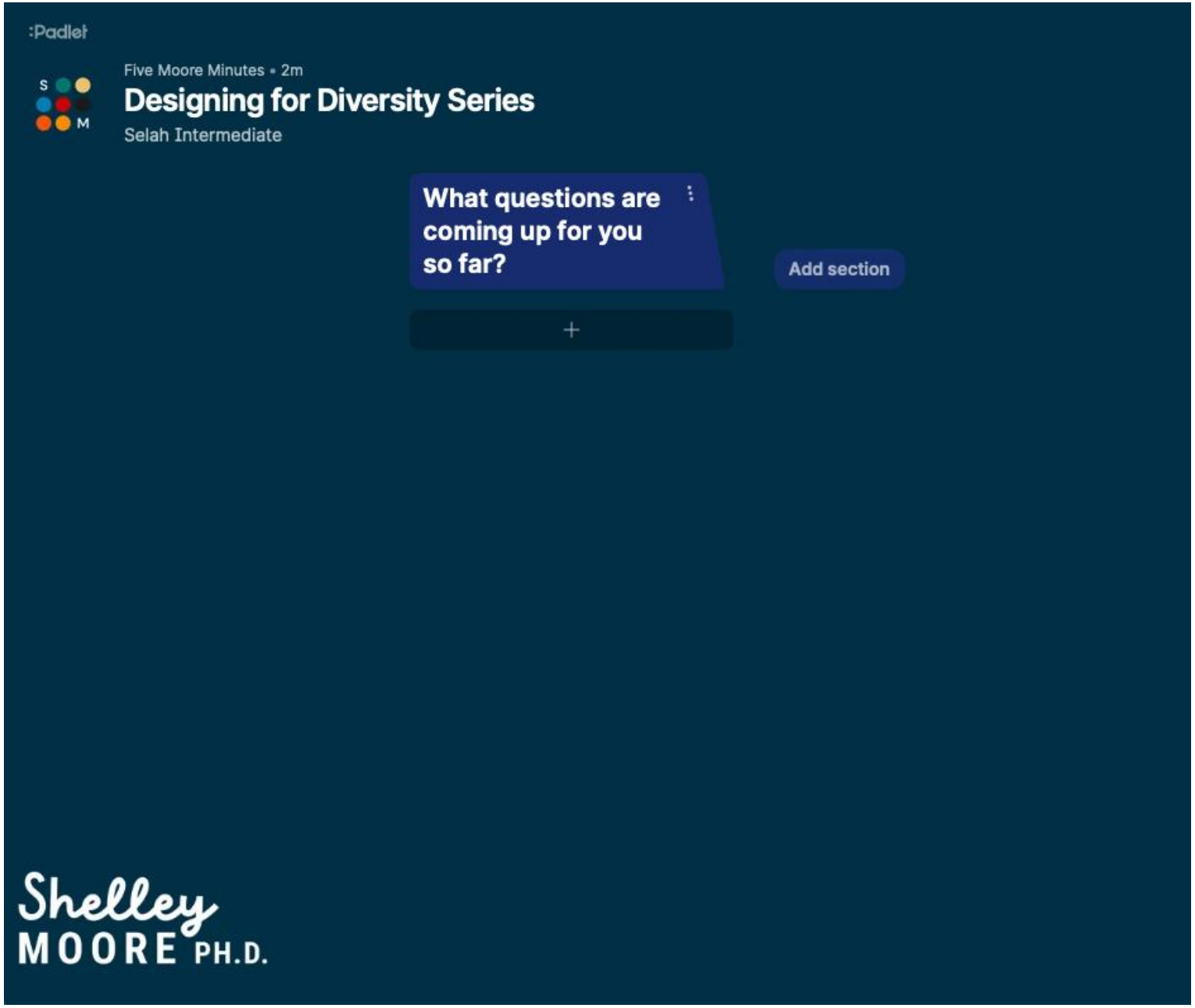
Designing for ALL

- Determine the big idea and guiding questions reflecting the learning standard(s) you want to target in your unit

- Stretch the standard! Create a 4-point learning continuum using the sub standards and extend the grade level to create an access and challenge point

- Target the sub standards that you want to target in your lesson

- Design a series of lesson that reduces barriers using UDL principles and strategies



What is one thing you are learning?

Homework

- Try something new!
- Notice what happens when you try something new? (in yourself, in your students)
- Bring back something to share (a story, an example, student evidence etc.)

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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