

Shelley MOORE PH.D.



@tweetsomemoore



@fivemooreminutes



@fivemooreminutes



www.fivemooreminutes.com

www.blogsomemoore.com

Who are you?

- Where is **home** for you?
- What is the **traditional territory** where you live?
- What are some of your **roles**?
- What are some of your **identities**?
- What are your **interests** and hobbies?
- What is **important** to you?
- What is a **life event** that shaped who you are?
- What is something that you want others to **know about you**?



5 min

WHAT DOES

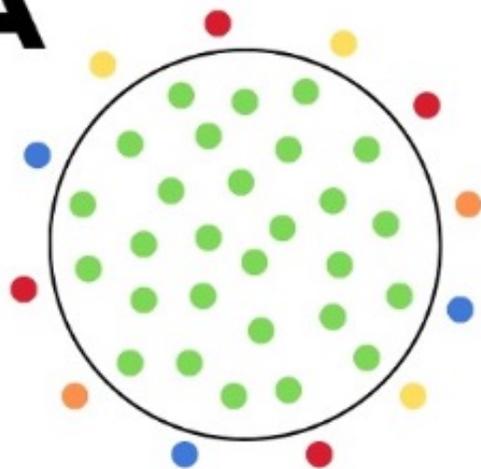
inclusion

MEAN?

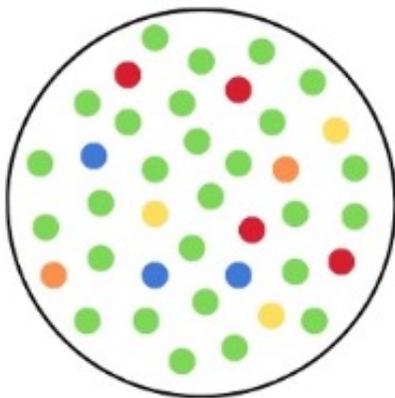
LOOK LIKE?

WHAT IS *Inclusion*?

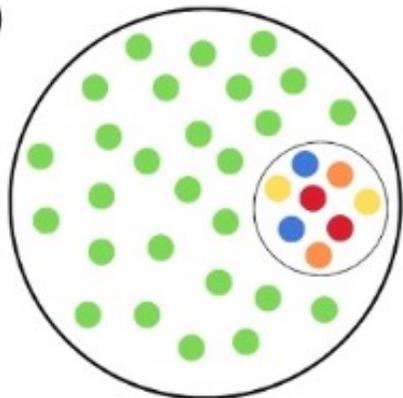
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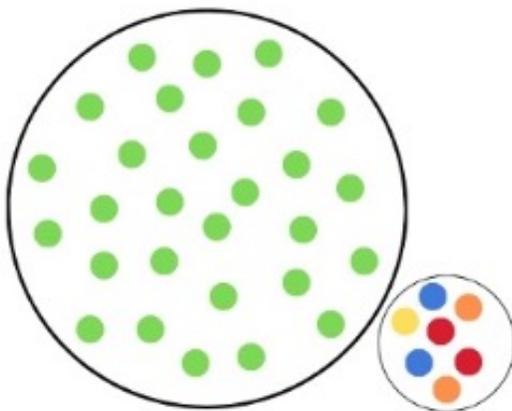
C



B



D



exclusion

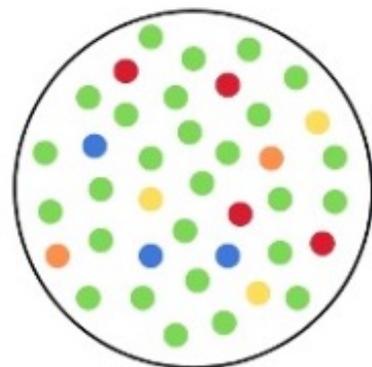
integration

inclusion

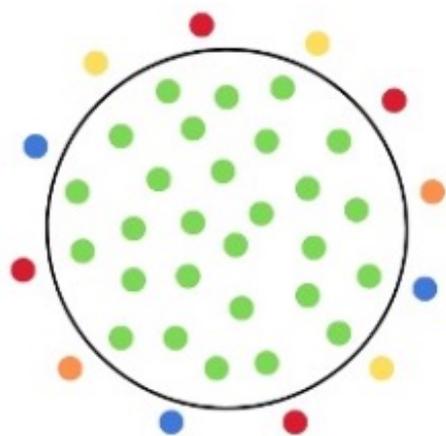
congregation

segregation

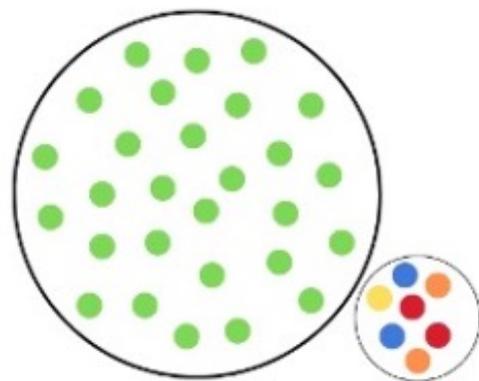
WHAT IS *inclusion*?



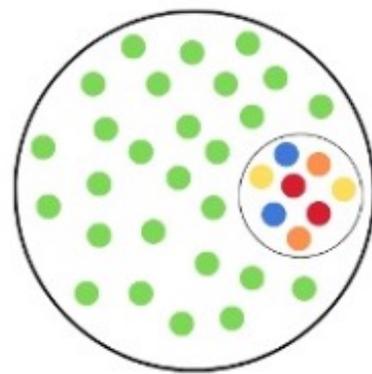
inclusion



exclusion

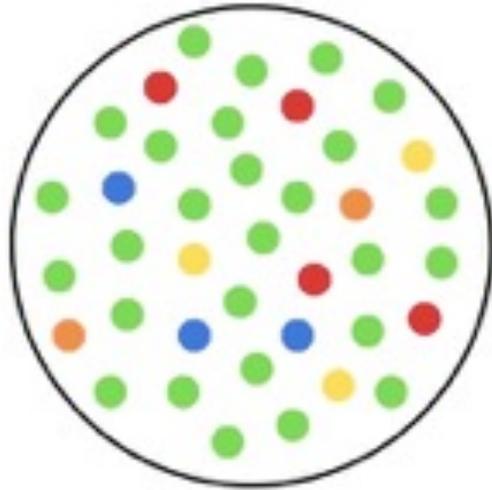


segregation

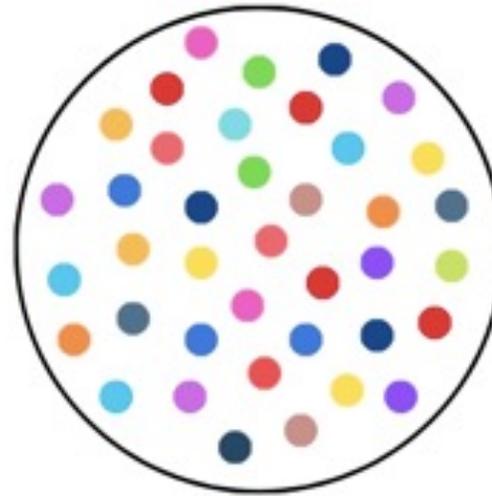
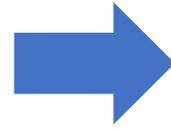


integration

WHAT IS *inclusion* ?



How do we
include people
with disabilities?



How do we teach
to *diversity*?



Useful take aways so far



How do we *plan*
for the ~~disabilities~~ *needs*
of students?

How...

do we shift our thinking?

do we shift our practice?

Reducing Barriers

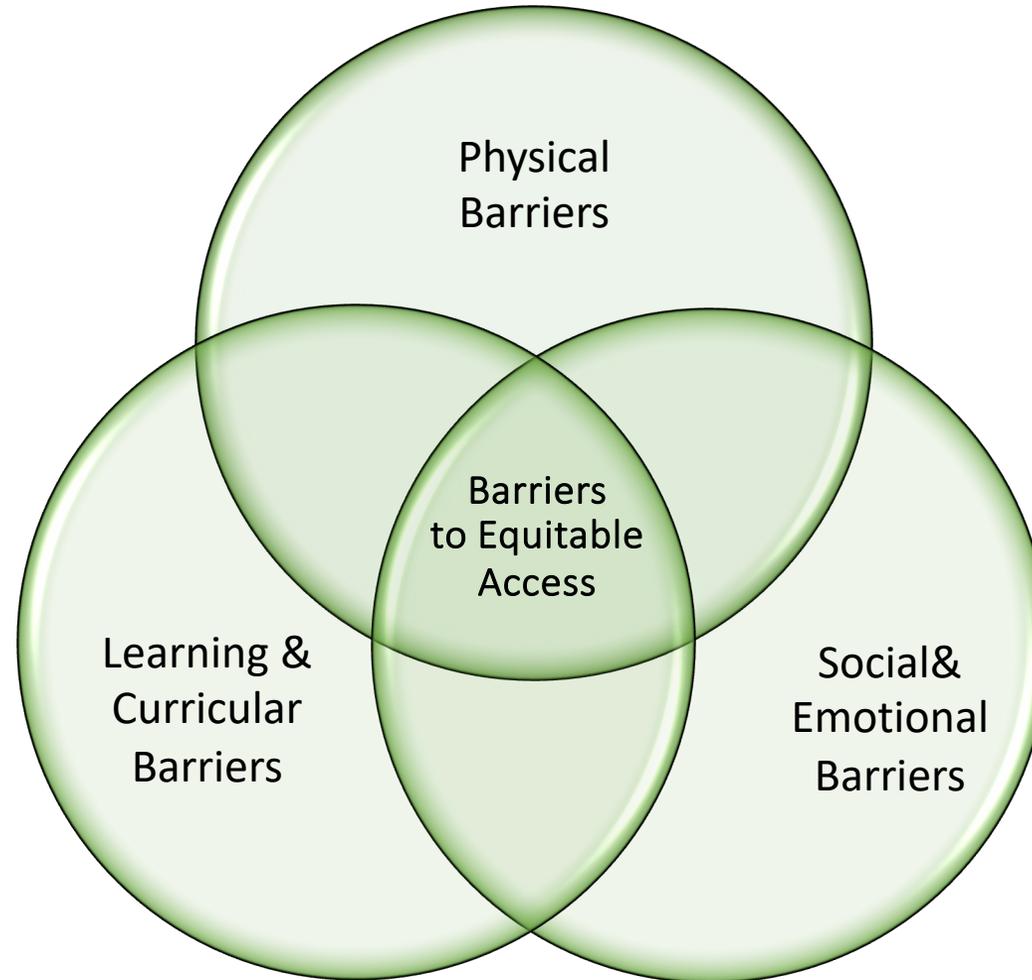


Supporting Needs

First, we reduce barriers



Adding Ramps to Learning



Examples of Initiatives that Reduce Barriers for ALL

Student Self Determination & Agency

Standards Based Assessment

Culturally Responsive Practices

Mind Up/ Zones of Regulation Etc.

First Peoples' Principles of Learning

Needs Based Design

Trauma Sensitive Instruction

Inquiry

Physical Barriers

Student Agency

SEL

Core Competencies

Barriers to Equitable Access

Strength Based Perspectives

Universal Design for Learning

Learning Continuums

Accessible Playgrounds

ICBIEP

Learning & Curricular Barriers

Social & Emotional Barriers

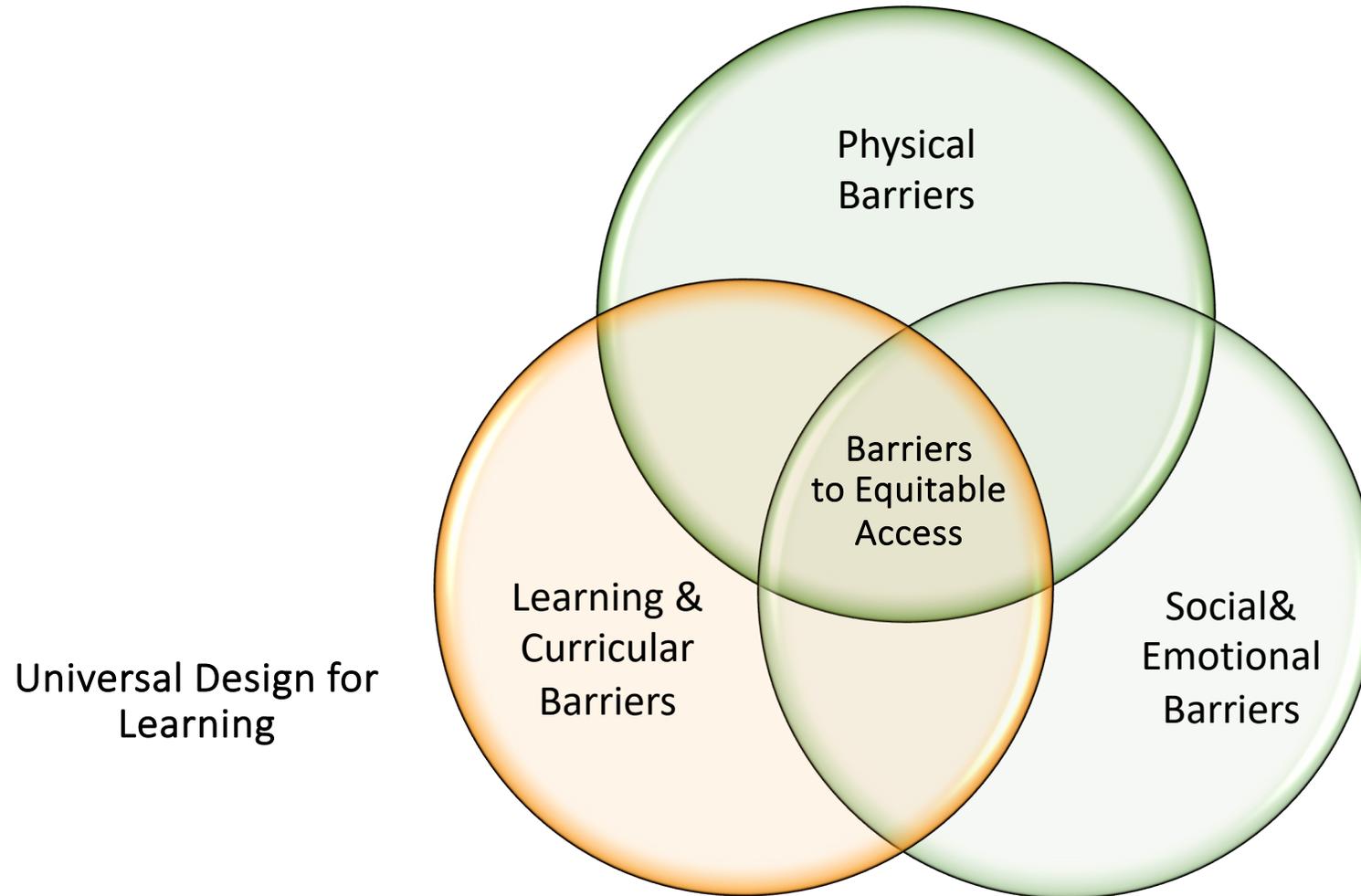
Land-Based Learning

Restorative Justice Practices

School Lunch Programs

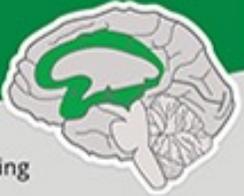
Differentiated Instruction & Curriculum

Adding Ramps to Learning



Universal Design for Learning: The Ramp for Learning

Provide multiple means of
Engagement



Affective Networks
The "WHY" of Learning

This panel features a green background with a white brain icon. The brain has several green-colored regions highlighted, representing affective networks. The text is positioned to the left of the brain icon.

Provide multiple means of
Representation



Recognition Networks
The "WHAT" of Learning

This panel features a purple background with a white brain icon. The brain has several purple-colored regions highlighted, representing recognition networks. The text is positioned to the left of the brain icon.

Provide multiple means of
Action & Expression



Strategic Networks
The "HOW" of Learning

This panel features a blue background with a white brain icon. The brain has several blue-colored regions highlighted, representing strategic networks. The text is positioned to the left of the brain icon.

Teacher Team UDL Guidelines Self-Assessment & Target Area Planner

UDL Language: Engagement			Accessible Language	
UDL Guideline	Providing Multiple Means of Engagement		Student Engagement	
7	Provide options for recruiting interest	Target Area	We can support students to be interested in what they are learning about by:	What this can look like in a _____ context
7.1	<ul style="list-style-type: none"> Optimizing individual choice and autonomy 	<input type="checkbox"/>	<ul style="list-style-type: none"> giving students choice and control over what they are learning about in ways that align with their interests, preferences, and needs 	
7.2	<ul style="list-style-type: none"> Optimizing relevance, value & authenticity 	<input type="checkbox"/>	<ul style="list-style-type: none"> making learning relevant to the student's lives and connecting it to real world problems that are important to the students 	
7.3	<ul style="list-style-type: none"> Minimize threats & distractions 	<input type="checkbox"/>	<ul style="list-style-type: none"> reducing distractions in the classroom and building a safe place for students to take risks 	
8	Providing options for sustaining Effort & Persistence	Target Area	We can support students to be motivated by:	What this can look like in a _____ context
8.1	<ul style="list-style-type: none"> Heighten Salience of goals and objectives 	<input type="checkbox"/>	<ul style="list-style-type: none"> clearly communicating learning goals/ intentions and why tasks and activities matter 	
8.2	<ul style="list-style-type: none"> Vary demands and resources to optimize challenge 	<input type="checkbox"/>	<ul style="list-style-type: none"> scaffolding learning by starting with accessibility and adding on challenge in goals and tasks 	
8.3	<ul style="list-style-type: none"> Foster collaboration and community 	<input type="checkbox"/>	<ul style="list-style-type: none"> building a community where learners work together by teaching collaboration and group work skills 	
8.4	<ul style="list-style-type: none"> Increase mastery-oriented feedback 	<input type="checkbox"/>	<ul style="list-style-type: none"> providing ongoing formative feedback that is relevant, clear, accessible, and timely 	
9	Provide options for Self-Regulation	Target Area	We can support learners to be effective at coping and engaging successfully when learning gets hard by...	What this can look like in a _____ context
9.1	<ul style="list-style-type: none"> Promote expectations and beliefs that optimize motivation 	<input type="checkbox"/>	<ul style="list-style-type: none"> helping students set learning goals that build confidence and help them take ownership of their learning 	
9.2	<ul style="list-style-type: none"> Facilitate personal coping skills and strategies 	<input type="checkbox"/>	<ul style="list-style-type: none"> teaching how to manage emotional responses & about healthy emotional responses and interactions 	
9.3	<ul style="list-style-type: none"> Develop self-assessment and reflection 	<input type="checkbox"/>	<ul style="list-style-type: none"> by helping students to increase their awareness of how they are progressing towards their goal & how to learn from their mistakes 	

Teacher Team UDL Guidelines Self-Reflection & Target Goal Planner

UDL Language: Representation			Accessible Language	
UDL Guideline	Providing Multiple Means of Representation		Student Understanding	
1	Provide options for perception	Target Area	We can present new information to students so that they understand it by:	What this can look like in a _____ context
1.1	<ul style="list-style-type: none"> Offer ways of customizing the display of information 	<input type="checkbox"/>	<ul style="list-style-type: none"> Sharing information in formats that are flexible 	
1.2	<ul style="list-style-type: none"> Offer alternatives for auditory information 	<input type="checkbox"/>	<ul style="list-style-type: none"> Utilizing modalities that compliment auditory information (visuals, tactile, movements etc.) 	
1.3	<ul style="list-style-type: none"> Offer alternatives for visual information 	<input type="checkbox"/>	<ul style="list-style-type: none"> Utilizing modalities that compliment visual information (descriptions, objects, auditory clues, reader) 	
2	Providing options for language and symbols	Target Area	We can share different options/ examples of language and symbols to support student understanding by:	What this can look like in a _____ context
2.1	<ul style="list-style-type: none"> Clarify vocabulary and symbols 	<input type="checkbox"/>	<ul style="list-style-type: none"> Pre-teaching important vocabulary, symbols, numbers ,labels in many ways (written, oral, visual examples) 	
2.2	<ul style="list-style-type: none"> Clarify syntax and structure 	<input type="checkbox"/>	<ul style="list-style-type: none"> Highlighting and teaching patterns and properties in systems (e.g. grammar, notation, taxonomies, equations etc.) 	
2.3	<ul style="list-style-type: none"> Support decoding of text, mathematical <u>notation</u> and symbols 	<input type="checkbox"/>	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Promote understanding across languages 	<input type="checkbox"/>	<ul style="list-style-type: none"> Teaching and using translators, descriptions, movement & visuals to support understanding in unfamiliar and multiple languages 	
2.5	<ul style="list-style-type: none"> Illustrate through multi-media 	<input type="checkbox"/>	<ul style="list-style-type: none"> Using multi-media to support understanding (videos, graphics, activities) 	
3	Provide options comprehension	<input type="checkbox"/>	We can provide options to help students understand new information by:	What this can look like in a _____ context
3.1	<ul style="list-style-type: none"> activate or supply background knowledge 	<input type="checkbox"/>	<ul style="list-style-type: none"> building prior knowledge before teaching new information 	
3.2	<ul style="list-style-type: none"> Highlight patterns, critical features, big ideas and relationships 	<input type="checkbox"/>	<ul style="list-style-type: none"> Connecting new learning to big ideas, other learning, other contexts (familiar and unfamiliar) 	
3.3	<ul style="list-style-type: none"> Guide information processing and visualization 	<input type="checkbox"/>	<ul style="list-style-type: none"> Including learning tasks that allow students to process new information (e.g. summarizing, categorizing, prioritizing) 	
3.4	<ul style="list-style-type: none"> Maximize transfer and generalization 	<input type="checkbox"/>	<ul style="list-style-type: none"> Giving students opportunities to connect how they learned and how they can transfer those learning skills/ strategies/ supports to new settings 	

Teacher Team UDL Guidelines Self-Reflection & Target Goal Planner

UDL Language: Expression			Accessible Language	
UDL Guideline	Providing Multiple Means of Action & Expression		Student Communication of Learning	
4	Providing options for physical action	Target Area	We can provide options for students to communicate using tools and assistive technology by:	What this can look like in a _____ context
4.1	<ul style="list-style-type: none"> Vary the methods for response and navigation 	<input type="checkbox"/>	<ul style="list-style-type: none"> providing tools/ assistive technologies to support motor skills to interact with instructional materials (i.e. alternatives to pencil/paper) 	
4.2	<ul style="list-style-type: none"> Optimize access to tools and assistive technologies 	<input type="checkbox"/>	<ul style="list-style-type: none"> providing support and teaching how to use tools effectively (i.e. teaching how to use tools/assistive technologies as supports) 	
5	<ul style="list-style-type: none"> Provide options for expression and communication 	Target Area	<ul style="list-style-type: none"> We can provide options for students to show what they know & communicate their learning by: 	What this can look like in a _____ context
5.1	<ul style="list-style-type: none"> Use multi-media for communication 	<input type="checkbox"/>	<ul style="list-style-type: none"> teaching new formats to develop a wider range of expression using multimedia and materials (oral/visual/written) (concrete/pictorial/abstract) 	
5.2	<ul style="list-style-type: none"> Use media tools for construction and composition 	<input type="checkbox"/>	<ul style="list-style-type: none"> offering supports and strategies for students to create written output (word prediction, text-to-speech, mapping tools, sentence starters etc.) 	
5.3	<ul style="list-style-type: none"> Build fluencies with graduated levels of support of support for practice and performance 	<input type="checkbox"/>	<ul style="list-style-type: none"> supporting increasing fluency by offering scaffolded options of challenge and supports to increase independence 	
6	<ul style="list-style-type: none"> Provide options for executive functions 	Target Area	<ul style="list-style-type: none"> We can provide options for students to know and set goals and make decisions about what supports they need to meet the goals by: 	What this can look like in a _____ context
6.1	<ul style="list-style-type: none"> Guide appropriate goals setting 	<input type="checkbox"/>	<ul style="list-style-type: none"> guiding students through reflection, self-assessment, and goal setting with curricular and core competencies 	
6.2	<ul style="list-style-type: none"> Support planning and strategy development 	<input type="checkbox"/>	<ul style="list-style-type: none"> modelling how to use supports and strategies and empowering students to make individual decisions about what they need to meet goals 	
6.3	<ul style="list-style-type: none"> Enhance managing information and resources 	<input type="checkbox"/>	<ul style="list-style-type: none"> teaching students to organize their evidence of learning and determine their best examples of learning 	
6.4	<ul style="list-style-type: none"> Enhance capacity for monitoring progress 	<input type="checkbox"/>	<ul style="list-style-type: none"> using assessment checklists, learning maps, one-point rubrics and student work samples to provide feedback to students and model self-assessment 	

UDL Guidelines – Engagement

What does it look like in Kindergarten

Teacher Team UDL Guidelines Self-Assessment & Target Area Planner

Date:

UDL Language: Engagement			Accessible Language	
UDL Guideline	Providing Multiple Means of Engagement		Student Engagement	
7	Provide options for recruiting interest	Target Area	We can support students to be interested in what they are learning about by:	What this can look like in a Kindergarten context
7.1	<ul style="list-style-type: none"> Optimizing individual choice and autonomy 	<input type="checkbox"/>	<ul style="list-style-type: none"> giving students choice and control over what they are learning about in ways that align with their interests, preferences, and needs 	Allow students to choose which center they want to explore; choice of tools and materials to use; choice of seating options, choice of interest-based activity (e.g. dinosaurs, dancing, numbers etc.)
7.2	<ul style="list-style-type: none"> Optimizing relevance, value & authenticity 	<input type="checkbox"/>	<ul style="list-style-type: none"> making learning relevant to the student's lives and connecting it to real world problems that are important to the students 	Thematic units that connect to interests; making learning connections to community and events in the students' world; using inclusive and diverse learning materials and experiences that reflect who the students are; real world problems to solve and performance tasks to show their learning.
7.3	<ul style="list-style-type: none"> Minimize threats & distractions 	<input type="checkbox"/>	<ul style="list-style-type: none"> reducing distractions in the classroom and building a safe place for students to take risks 	Classrooms that are organized and promote a sense of calm, visuals and colours to help students locate and access materials; keeping visual displays purposeful and simple, neutral or calming colours, blinds to reduce brightness; limit use of over-head lighting, reduce noise by using carpets, soft background noise or music, white noise; opportunities for students to create individual work spaces or quiet areas where they can focus, comfortable seating
8	Providing options for sustaining Effort & Persistence	Target Area	We can support students to be motivated by:	What this can look like in a Kindergarten context
8.1	<ul style="list-style-type: none"> Heighten Salience of goals and objectives 	<input type="checkbox"/>	<ul style="list-style-type: none"> clearly communicating learning goals/intentions and why tasks and activities matter 	Visual displays that show learning goals and objectives in student friendly language and visuals, goals of the week or month; graphic organizers to visually show goals and how they can be broken down into smaller steps (learning continuum), Talk through the learning target before each lesson using student friendly language and concrete examples; visual timelines to show the sequence of goals or objectives throughout the day, use visuals to represent each goal or objective; conference with students to help them set their own goals in learning
8.2	<ul style="list-style-type: none"> Vary demands and resources to optimize challenge 	<input type="checkbox"/>	<ul style="list-style-type: none"> scaffolding learning by starting with accessibility and adding on challenge in goals and tasks 	Offer a variety of activities at learning centers that include sensory and kinesthetic learning opportunities, make activities open ended so there is more than one solution, allow students to choose how to engage with learning (drawing, writing, building), offer different levels of complexity in centers and tasks, provide a range of tools and strategies to help students understand concepts (manipulatives, graphic organizers, visual aids etc.); encourage

				students to work together in diverse strength groupings; work with student to set individual learning goals that reflect the complexity of understanding
8.3	<ul style="list-style-type: none"> Foster collaboration and community 	<input type="checkbox"/>	<ul style="list-style-type: none"> building a community where learners work together by teaching collaboration and group work skills 	Cooperative diverse learning groups, weekly or daily buddy systems where students support each other with tasks, finding materials etc.; class meetings to discuss interest, share experiences, practice communication and team work skills; shared reading, writing and math activities where students work together to explore text; long terms collaborative projects where student work together to achieve a common goal; rotating classroom jobs where student have community responsibilities and shared ownership
8.4	<ul style="list-style-type: none"> Increase mastery-oriented feedback 	<input type="checkbox"/>	<ul style="list-style-type: none"> providing ongoing formative feedback that is relevant, clear, accessible, and timely 	Personalized and intentional feedback; offering clear next steps; individual goal setting about learning; learning continuums, asset-based rubrics, checklist that highlight what students can do and where that can move next
9	Provide options for Self-Regulation	Target Area	We can support learners to effective at coping and engaging successfully with the learning environment by:	What this can look like in a Kindergarten context
9.1	<ul style="list-style-type: none"> Promote expectations and beliefs that optimize motivation 	<input type="checkbox"/>	<ul style="list-style-type: none"> helping students set learning goals that build confidence and help them take ownership of their learning 	Create warm and welcoming classroom that fosters a sense of belonging, and positive interactions, display student work, celebrate growth and reinforce positively to 9.1, 7.1 motivate and build self-confidence; clearly communicate learning goals in student friendly way; break large goals and tasks into smaller more manageable steps; provide visual cues that outline learning process of the day and/or week; encourage student choice and agency; foster collaboration – working in pairs or small groups to share ideas, understanding and support one another; connect learning to real life situations and interests; celebrate effort and progress (not just goals or outcomes) to foster a growth mindset
9.2	<ul style="list-style-type: none"> Facilitate personal coping skills and strategies 	<input type="checkbox"/>	<ul style="list-style-type: none"> teaching how to manage emotional responses & about healthy emotional responses and interactions 	Calm corner for all students to use when they need a break or feel overwhelmed, build space with students and include cushions, sensory tools, to help them relax and regain focus; teach students how to recognize and express their emotions; teach simple breathing exercises; SEL routines to build emotional self-regulation & problem solving; visual schedules that outline the daily activities; allow students to choose activities that reflect their comfort levels; mindfulness activities to help students be aware of their thoughts and feelings; teach problem solving strategies to help student think critically, identify problems, brainstorm solutions, make a plan and evaluate outcomes
9.3	<ul style="list-style-type: none"> Develop self-assessment and reflection 	<input type="checkbox"/>	<ul style="list-style-type: none"> by helping students to increase their awareness of how they are progressing towards their goal & how to learn from their mistakes 	Learning journals to help students reflect on their learning experiences (what they learned, challenges they faced, what to do next time); Goal setting, portfolio assessment (collect samples of evidence over time of their learning, have student choose their "best" pieces and share what they are proud of in connection of a learning goal

Your job (15 min)

- Take a look at the guidelines
 - www.blogsomemoore.com
- Which strategies do you understand?
- Jot down a few examples of what each strategy looks like/ could look like in your own classroom/school
- Highlight some strategies that you are not sure about/need to learn more about



**What is ONE UDL strategy
that stood out as useful for
YOUR context?**

How do we “UDL?”

- 1. Get to know the students**
- 2. Determine learning standards and objectives**
- 3. Identify potential barriers**
- 4. Consider universal supports & strategies**
- 5. Design a learning experience**
- 6. Teach, assess, reflect**

How do we “UDL?”

- 1. Get to know the students**
- 2. Determine learning standards and objectives**
- 3. Identify potential barriers**
- 4. Consider universal supports & strategies**
- 5. Design a learning experience**
- 6. Teach, assess, reflect**

Determine learning standards and objectives

Backwards Design/ Understanding by Design (UbD)

BACKWARDS DESIGN



UBD: Determining the Learning Standard

Forward Design

Same for Everyone



Standardized

Differentiated

Grade Level Goals

Adapted Goals

Modified Goals

Compromises the integrity of evaluation

Backward Design

Same for Everyone



Differentiated

Activity 1

Activity 2

Activity 3

Does not compromise the integrity of evaluation

Standards Based

Backwards Design

- 1. Content Knowledge**
- 2. Skills & Processes**

Backwards Design

- 1. Learning Context**
- 2. Big Ideas/ Conceptual Understandings**
- 3. Understandings**
- 4. Knowledge**
- 5. Skills**
- 6. Competencies**

Next Generation Science Standards (NGSS)

What do we need to **UNDERSTAND?**

Big Ideas

What do we need to **KNOW?**

Knowledge

What do we need to **DO?**

Skills

MS. Structure and Properties of Matter		
Students who demonstrate understanding can:		
MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures. [Clarification Statement: Emphasis is on developing models of molecules that vary in complexity. Examples of simple molecules could include ammonia and methanol. Examples of extended structures could include sodium chloride or diamonds. Examples of particulate-level models could include drawings, 3D ball and stick structures, or computer representations showing different substances with different types of atoms.] [Assessment Boundary: Assessment does not include valence electrons and bonding energy, discussing the individual ions composing complex structures, or a complete depiction of all individual atoms in a complex molecule or extended structure.]		
MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. [Clarification Statement: Emphasis is on natural resources that undergo a chemical process to form the synthetic material. Examples of new materials could include new medicine, foods, and alternative fuels.] [Assessment Boundary: Assessment is limited to the qualitative interpretation of evidence provided.]		
MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and phase (state) of a substance when thermal energy is added or removed. [Clarification Statement: Emphasis is on qualitative particulate-level models of solids, liquids, and gases to show that adding or removing thermal energy increases or decreases kinetic energy of the particles until a change of phase occurs. Examples of models could include drawings and diagrams. Examples of particles could include ions, molecules, or atoms. Examples of substances could include sodium chloride, water, carbon dioxide, and helium.]		
MS-PS1-7. Use evidence to illustrate that density is a property that can be used to identify samples of matter. [Clarification Statement: Emphasis should be on students measuring the masses and volumes of regular and irregular shaped objects, calculating their densities, and identifying the samples of matter.]		
MS-PS1-8. Plan and conduct an investigation to demonstrate that mixtures are combinations of substances. [Clarification Statement: Emphasis should be on analyzing the physical changes that occur as mixtures are formed and/or separated. Examples of common mixtures could include salt water, oil and vinegar, and air.] [Assessment boundary: Assessment is limited to separation by evaporation, filtration and magnetism.]		
The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i> .		
Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Developing and Using Models Modeling in 6–8 builds on K–5 and progresses to developing, using and revising models to describe, test, and predict more abstract phenomena and design systems.</p> <ul style="list-style-type: none"> Develop a model to predict and/or describe phenomena. (MS-PS1-1),(MS-PS1-4) <p>Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in 6–8 builds on K–5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or design solutions.</p> <ul style="list-style-type: none"> Plan an investigation individually and collaboratively, and in the design: identify independent and dependent variables and controls, what tools are needed to do the gathering, how measurements will be recorded, and how many data are needed to support a claim. (MS-PS1-8) Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions. (MS-PS1-8) <p>Engaging in Argument from Evidence Engaging in argument from evidence in 6–8 builds from K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world.</p> <ul style="list-style-type: none"> Construct and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem. (MS-PS1-7) <p>Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in 6–8 builds on K–5 and progresses to evaluating the merit and validity of ideas and methods.</p> <ul style="list-style-type: none"> Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence. (MS-PS1-3) 	<p>PS1.A: Structure and Properties of Matter</p> <ul style="list-style-type: none"> (NYSEd) Substances are made of one type of atom or combinations of different types of atoms. Individual atoms are particles and can combine to form larger particles that range in size from two to thousands of atoms. (MS-PS1-1) (NYSEd) Each substance has characteristic physical and chemical properties (for any bulk quantity under given conditions) that can be used to identify it. (MS-PS1-3),(MS-PS1-7) (Note: This Disciplinary Core Idea is also addressed by MS-PS1-2.) (NYSEd) In a solid, the particles are closely spaced and vibrate in position but do not change their relative locations. In a liquid, the particles are closely spaced but are able to change their relative locations. In a gas, the particles are widely spaced except when they happen to collide and constantly change their relative locations. (MS-PS1-4) Solids may be formed from molecules, or they may be extended structures with repeating subunits (e.g., crystals). (MS-PS1-1) (NYSEd) The changes of state that occur with variations in temperature and/or pressure can be described and predicted using these models of matter. (MS-PS1-4) (NYSEd) Mixtures are physical combinations of one or more samples of matter and can be separated by physical means. (MS-PS1-8) <p>PS1.B: Chemical Reactions (NYSEd) Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different particles, and these new substances have different properties from those of the reactants. (MS-PS1-3) (Note: This Disciplinary Core Idea is also addressed by MS-PS1-2 and MS-PS1-5.)</p> <p>PS3.A: Definitions of Energy</p> <ul style="list-style-type: none"> (NYSEd) The term "heat" as used in everyday language refers: both to thermal energy (the motion of particles within a substance) and the transfer of that thermal energy from one object to another. In science, heat is used only for this second meaning; it refers to the energy transferred due to the temperature difference between two objects. (secondary to MS-PS1-4) (NYSEd) Temperature is not a form of energy. Temperature is a measurement of the average kinetic energy of the particles in a sample of matter. (secondary to MS-PS1-4) 	<p>Patterns</p> <ul style="list-style-type: none"> Macroscopic patterns are related to the nature of microscopic and atomic-level structure. (MS-PS1-1),(MS-PS1-7),(MS-PS1-8) Graphs, charts, and images can be used to identify patterns in data. (MS-PS1-1),(MS-PS1-4) <p>Cause and Effect</p> <ul style="list-style-type: none"> Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-PS1-4) <p>Scale, Proportion, and Quantity</p> <ul style="list-style-type: none"> Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small. (MS-PS1-1) <p>Structure and Function</p> <ul style="list-style-type: none"> Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used. (MS-PS1-3) <p>Connections to Engineering, Technology, and Applications of Science</p> <p>Interdependence of Science, Engineering, and Technology</p> <ul style="list-style-type: none"> Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems. (MS-PS1-3) <p>Influence of Science, Engineering and Technology on Society and the Natural World</p> <ul style="list-style-type: none"> The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. Thus technology use varies from region to region and over time. (MS-PS1-3)
<p><i>Connections to other DCIs in this grade-band:</i> MS.LS2.A (MS-PS1-3); MS.LS4.D (MS-PS1-3); MS.ESS2.C (MS-PS1-1),(MS-PS1-4); MS.ESS3.A (MS-PS1-3); MS.ESS3.C (MS-PS1-3); MS.LS4.D (MS-PS1-3); HS.ESS1.A (MS-PS1-1); HS.ESS1.A (MS-PS1-1),(MS-PS1-3),(MS-PS1-4); HS.PS1.B (MS-PS1-4); HS.PS3.A (MS-PS1-4); HS.LS2.A (MS-PS1-3); HS.LS4.D (MS-PS1-3); HS.ESS1.A (MS-PS1-1); HS.ESS3.A (MS-PS1-3)</p>		

Backwards Design Planning

Backwards Design Facet	Science (NGSS)	Math (CC)	English	Social St.
Learning Context	Title		Title (e.g., literature, instructional etc.)	
Learning Standard	Performance Expectation	Bolded letter cluster	Numbers (e.g., 1., 2.)	
Big Idea (I understand)	Cross Cutting Concepts	Grey bar/red writing (domain)	Grey bar (cross grade)	
Knowledge (I know)	Disciplinary Core Ideas	None/ Draw from standard	None/ Draw from standard	
Skills (I can)	Science & Engineering Practices	Number statement (not bolded)	Learning Standard	
Competencies (I am)		Mathematical Practices/ preamble?		

Your job (20 min):

- **Choose another subject area:**
 - **Take a look at a subject area and determine the kinds of goals and what they are called:**
 - **Look for**
 - **Big Ideas? Knowledge goals and/or Skill goals?**
 - **What are the:**
 - **Big ideas called**
 - **Knowledge goals called**
 - **Skill goals called**
- **I will model with Language Arts if you want to join our group**

Backwards Design Planning

Backwards Design Facet	Science (NGSS)	Math	ELA	Social St.
Learning Context	Title			
Learning Standard	Performance Expectation			
Big Idea (I understand)	Cross Cutting Concepts			
Knowledge (I know)	Disciplinary Core Ideas			
Skills (I can)	Science & Engineering Practices			
Competencies (I am)				

Backwards Design Planning

Backwards Design Facet	Science (NGSS)	Math (CC)	English	Social St.
Learning Context	Title		Title (e.g., literature, instructional etc.)	
Learning Standard	Performance Expectation	Bolded letter cluster	Numbers (e.g., 1., 2.)	
Big Idea (I understand)	Cross Cutting Concepts	Grey bar/red writing (domain)	Grey bar (cross grade)	
Knowledge (I know)	Disciplinary Core Ideas	None/ Draw from standard	None/ Draw from standard	
Skills (I can)	Science & Engineering Practices	Number statement (not bolded)	Learning Standard	
Competencies (I am)		Mathematical Practices/ preamble?		

Grade:		Planning Team:	
Context for Learning: 7.2, 8.3, 3.2		Unit Guiding Question(s): Teacher provocations: 7.2, 8.3, 3.2, 3.4	Student generated: 7.1, 7.2, 8.3, 9.1, 3.4
Key Vocabulary: 2.1			
	Learning Goals Curricular Language	Learning Goals Student Friendly Language 8.1, 9.1, 9.3, 6.4	
What do students need to understand?			
What do students need to know?			
What do students need to do?			
Who do student need to be?			

Backwards Design Planning

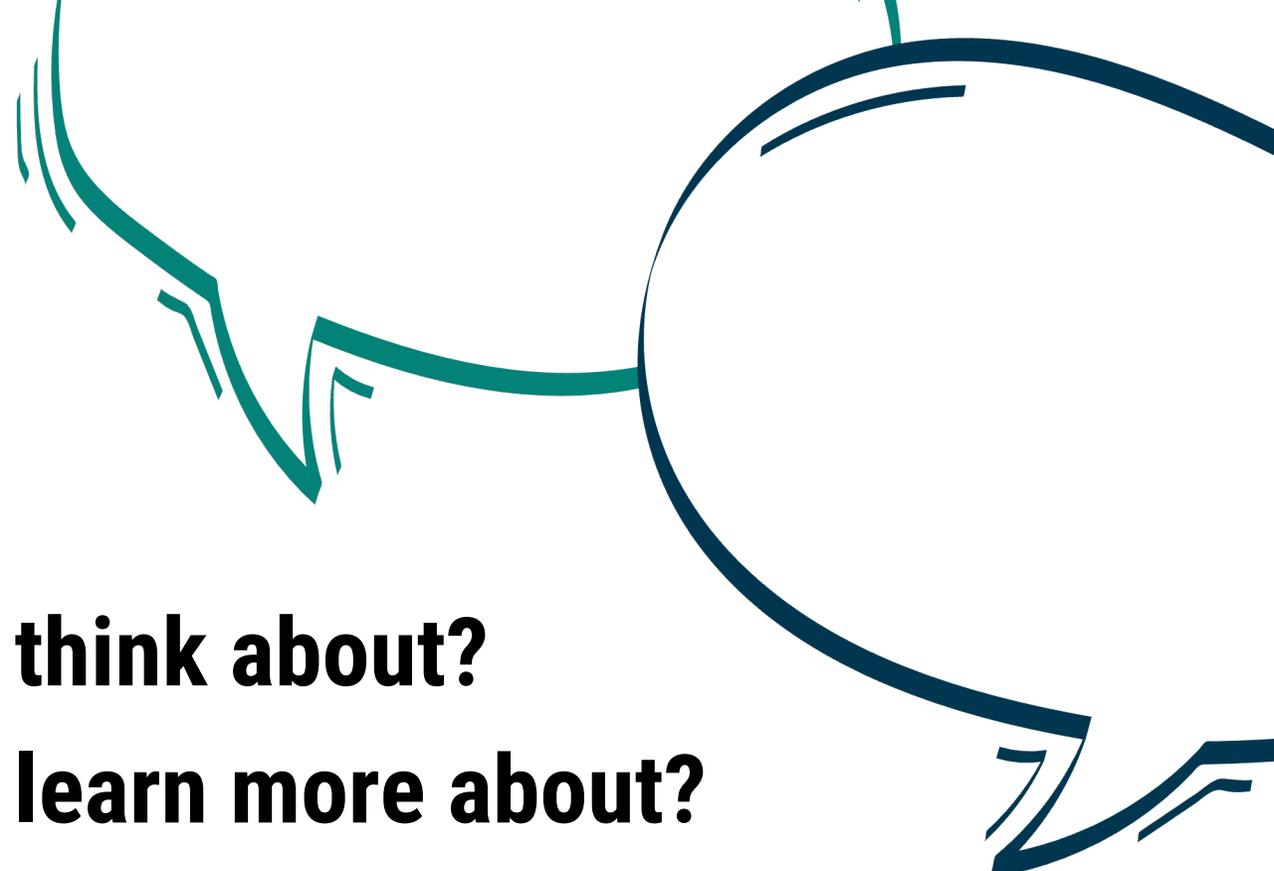
Grade:	Subject Area: Science	Title:	
Performance Expectation	Unit Guiding Question(s): Teacher provocations:		Student generated:
Key Vocabulary:			
Learning Goals	Curricular Language What do Students need to Know and Do?	Student Friendly Language	
Science and Engineering Practices			
Disciplinary Core Ideas			
Crosscutting Concepts			



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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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

Grade:		Subject Area:	Strand/Topic:
Learning Standard:		Unit Guiding Question(s):	
Key Vocabulary:			
Sub Standards	Curricular Language What do Students need to Know and Do?	Student Friendly Language What do Students need to Know and Do?	



What is one useful idea?

What is one thing you want to think about?

What is one thing you want to learn more about?

**What is one thing you want to share with
someone who is not here today?**

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