SHELLEY MOORE

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NEXWLéLEXM (BOWEN ISLAND)

- The Islands Trust council acknowledges that the lands and waters that encompass the Islands Trust Area have been home to Indigenous peoples since time immemorial and honours the rich history, stewardship, and cultural heritage that embody this place we all call home.

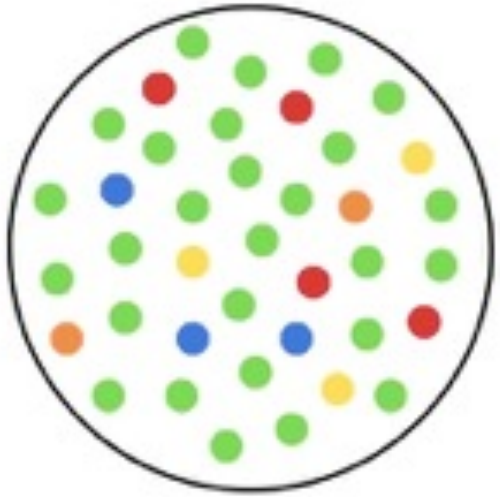
- The Islands Trust council is committed to establishing and maintaining mutually respectful relationships between Indigenous and non-Indigenous peoples. Islands Trust states a commitment to Reconciliation with the understanding that this commitment is a long-term relationship-building and healing process.

- The Islands Trust council will strive to create opportunities for knowledge-sharing and understanding as people come together to preserve and protect the special nature of the islands within the Salish Sea.

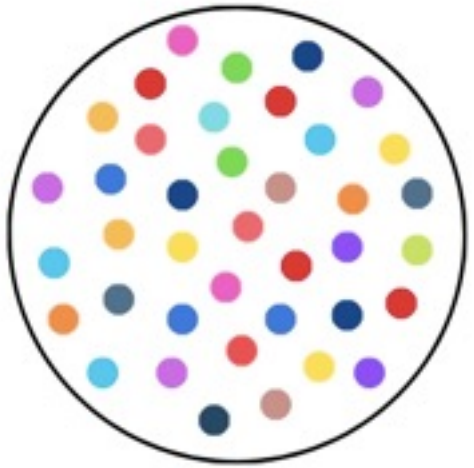
Waterfall

What was your take-away from last session?

What is inclusion?

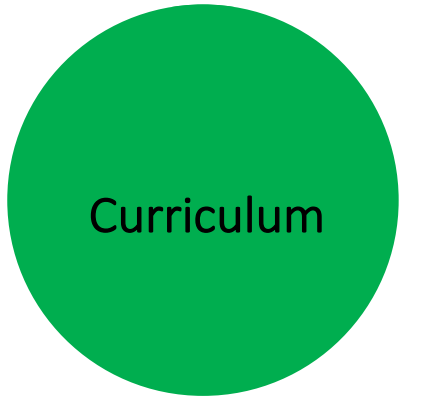


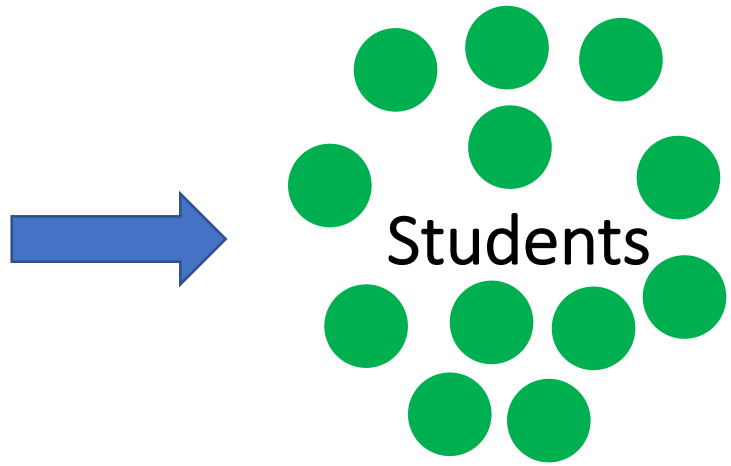
How do we include people who are different

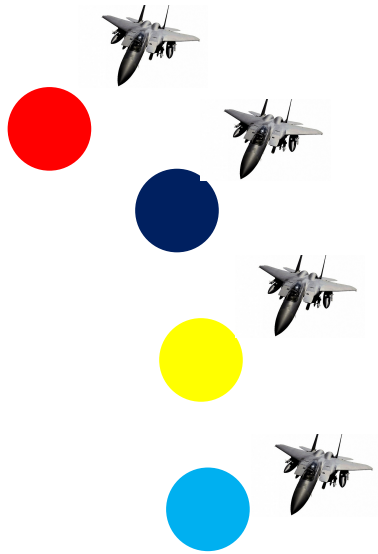


How do we teach to diversity?

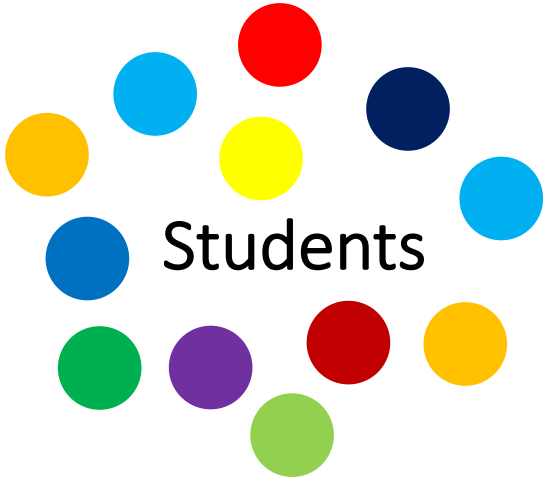
WHAT'S THE DIFFERENCE?

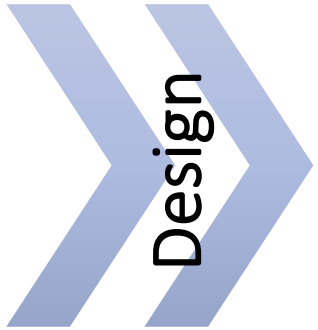


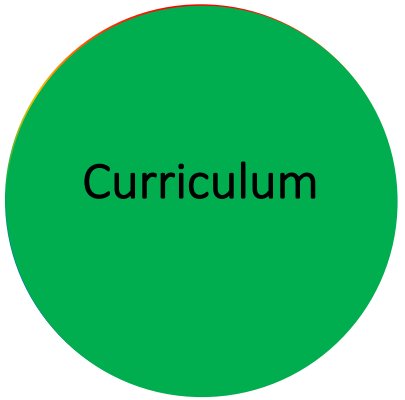




DESIGN: THE MOST UNDERUTILIZED SUPPORT

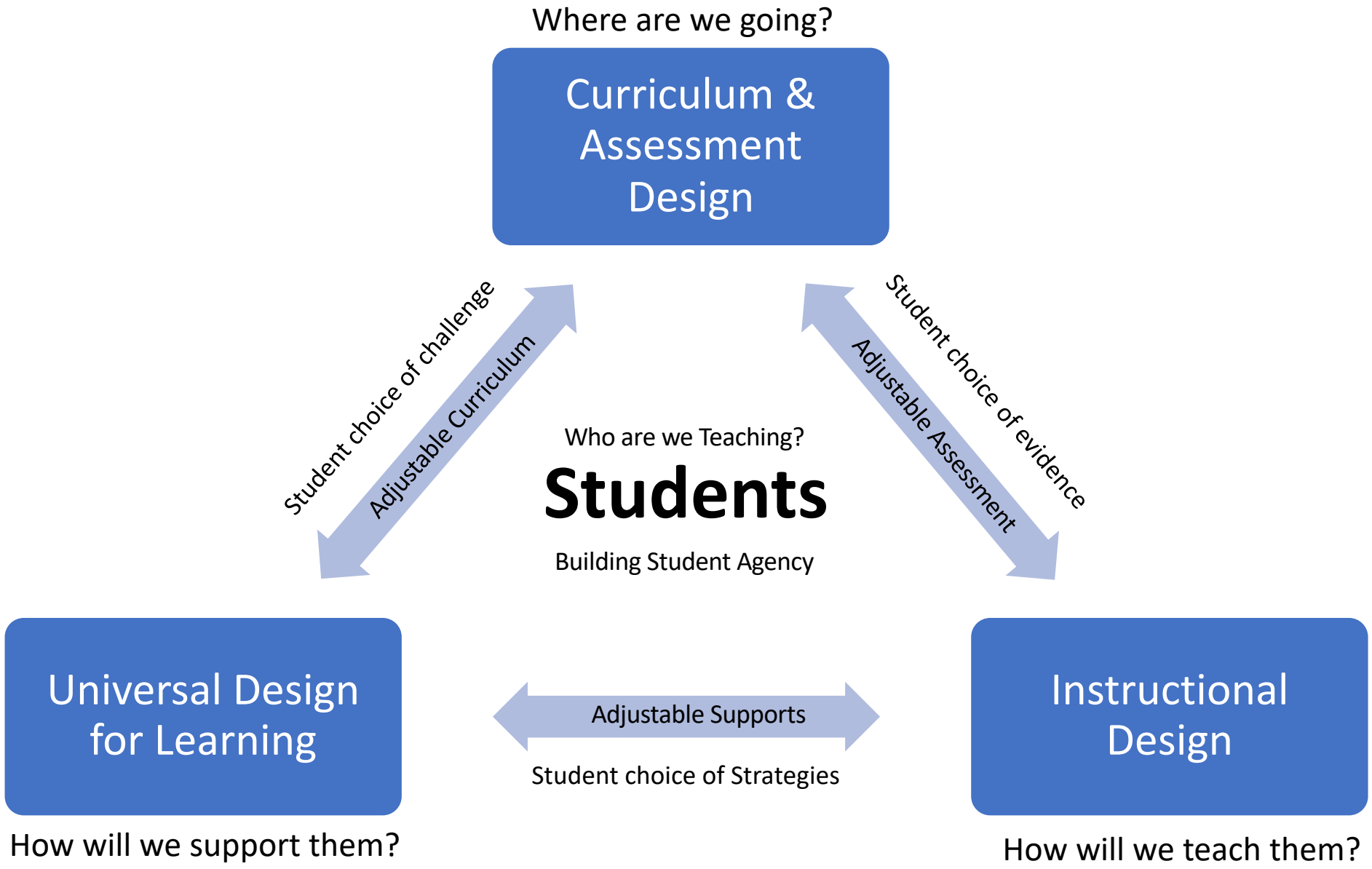






Shelley Moore, 2019

How can we change the system?
Designing with Equity in Mind



Shelley Moore, 2019

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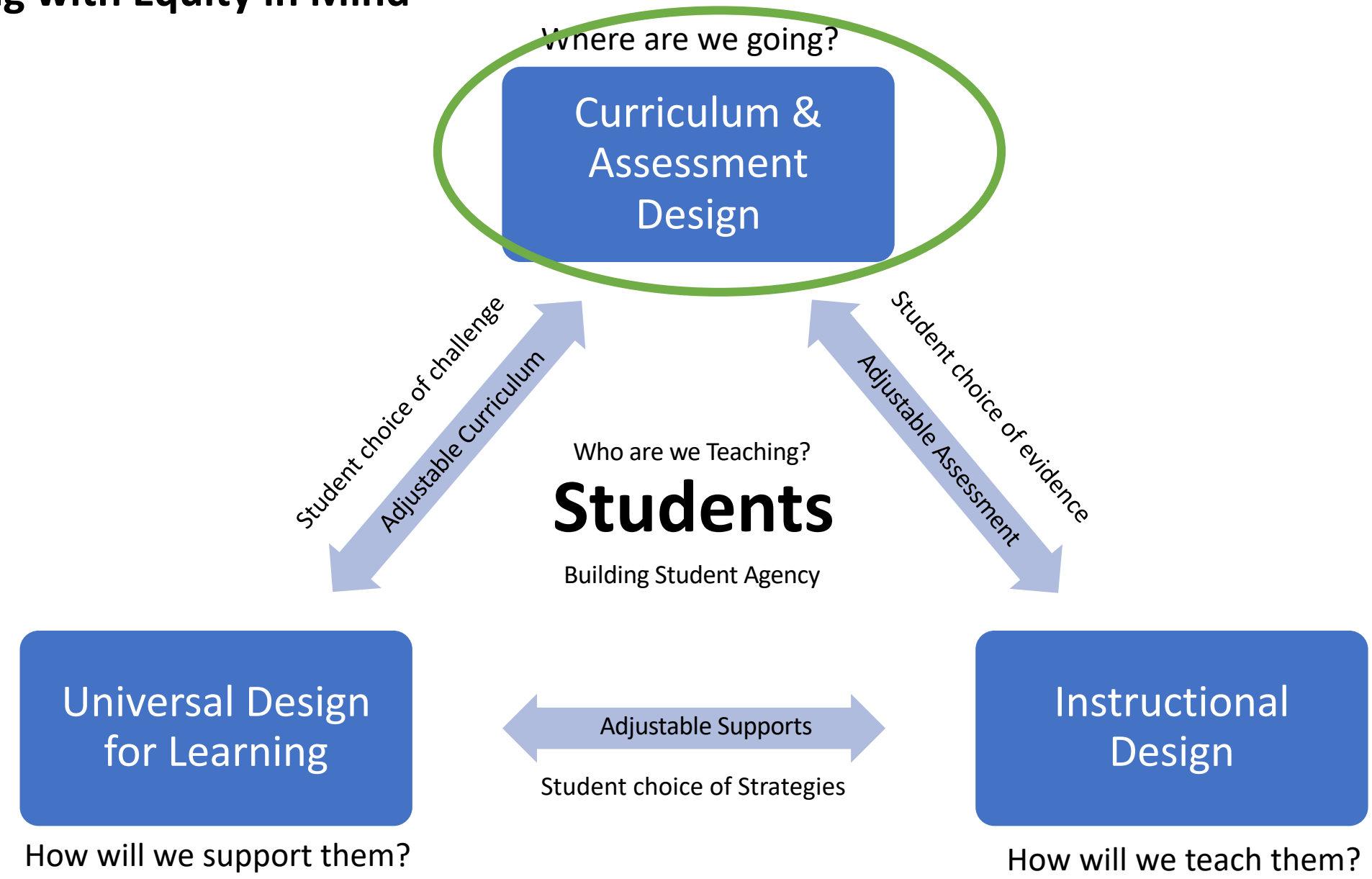
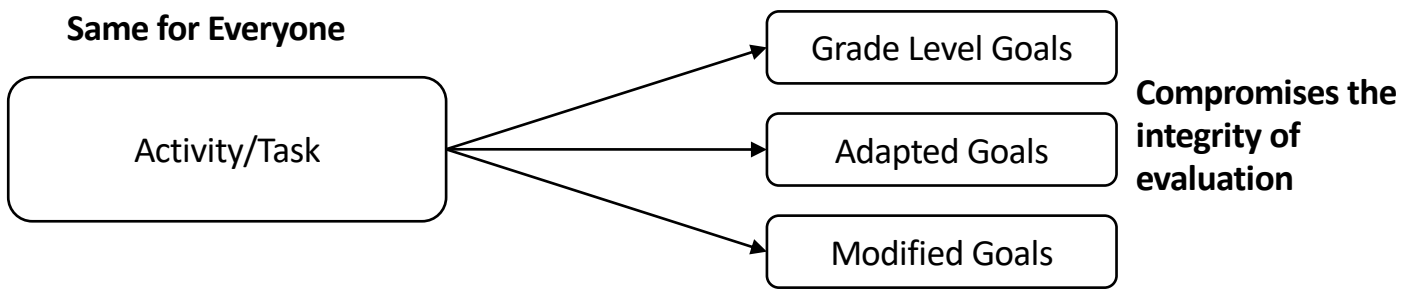


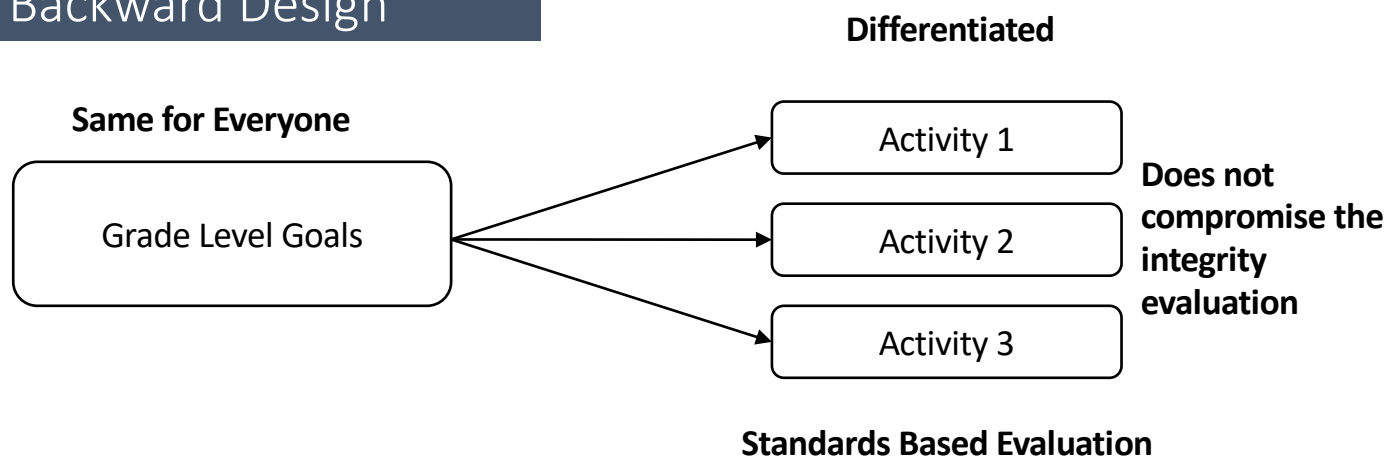
Backwards Design Big Ideas:

- Every curriculum has curricular goals
- We need to choose goals to teach for every unit
- We organize goals around a big idea/question
- We need to translate those goals into student friendly language
- Students need to know the goals
- Learning activities are EVIDENCE of learning
- We evaluate goals NOT activities
- Student choose their best examples of evidence (triangulation)

Forward Design



Backward Design



McTigue, 2010

Backwards Design: What are the GOALS?

- **Content**
  - What do we need to know?
- **Process**
  - What do we need to do?

Backwards Design:
What are the GOALS?

- **Backwards Design**
  - **Big Idea**
    - What do we need to understand?
  - **Content**
    - What do we need to know?
  - **Process & Skills**
    - What do we need to do?
  - **Competencies**
    - Who do we need to be?

Backward Design Unit Planning Template: Building the Curricular Airplane

Class/ Subject/ Course	**Topic**	**Planning Team:**
Big Idea(s):		**Unit Guiding Question(s):**
Type of Goal	Curricular Learning Standards/ Outcomes	Student Friendly Language

Backwards Design Planning: Manitoba

	Learning Context		Teacher Evaluation		Student Evaluation
Subject	**Topic**	**Big Idea**	**Knowledge/ Content**	**Skills**	**Competencies**
In Math it is called:	**Topic**	**Enduring Understandings / General Learning Outcome**		**Specific Learning Outcome/**	**Processes**
In Social Studies it is called:	**Cluster**	**Use cluster overview description**	**Knowledge/ Content**	**Skills**	**Values**
In Science in is called:	**Cluster #**	**Use cluster/unit overview description**	**Specific Learning Outcome (Students will…)**	**Cluster 0 – Overall scientific and technological Skills**	**Cluster 0 – Overall scientific and technological attitudes**

Backward Design Unit Planning Template: Building the Curricular Airplane

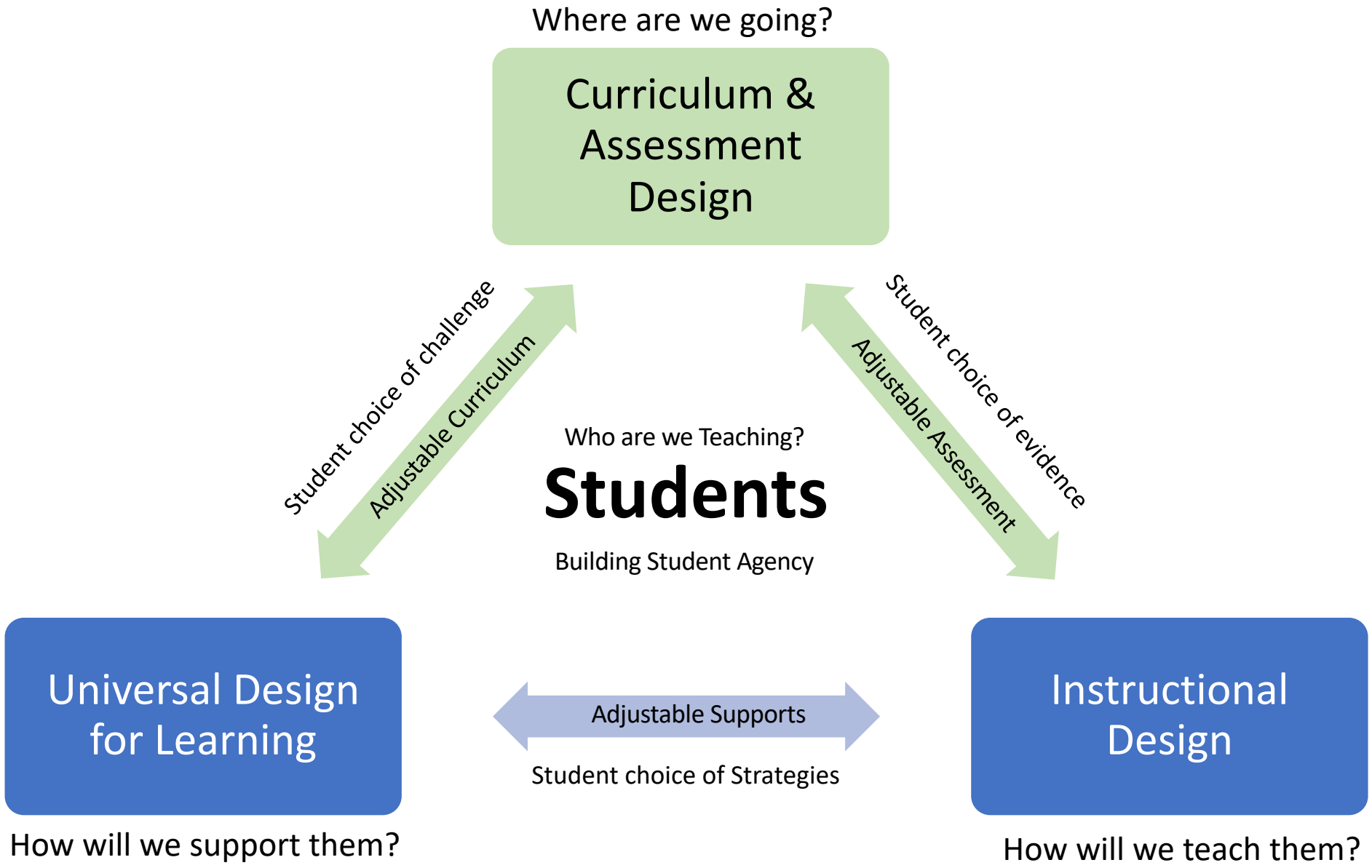
Class/ Subject/ Course: Grade 9 Math	**Topic: Patterns & Relations**	**Planning Team:**
Big Idea(s): Use patterns to describe the world and solve problems		**Unit Guiding Question(s): How can patterns help us to describe and solve problems in the world?**
Type of Goal	Curricular Learning Standards/ Outcomes	Student Friendly Language
Skills (Specific Learning Outcome)	9.PR.1. Generalize a pattern rising from a problem-solving context using linear equations and verify by substitution.	I can use a pattern to solve a linear equation I can use substitution to verify
Competencies (Processes)	[C, CN, PS, R, V] – Student/ Class chosen	

Popcorn

How could Backwards Design planning support inclusive classrooms?

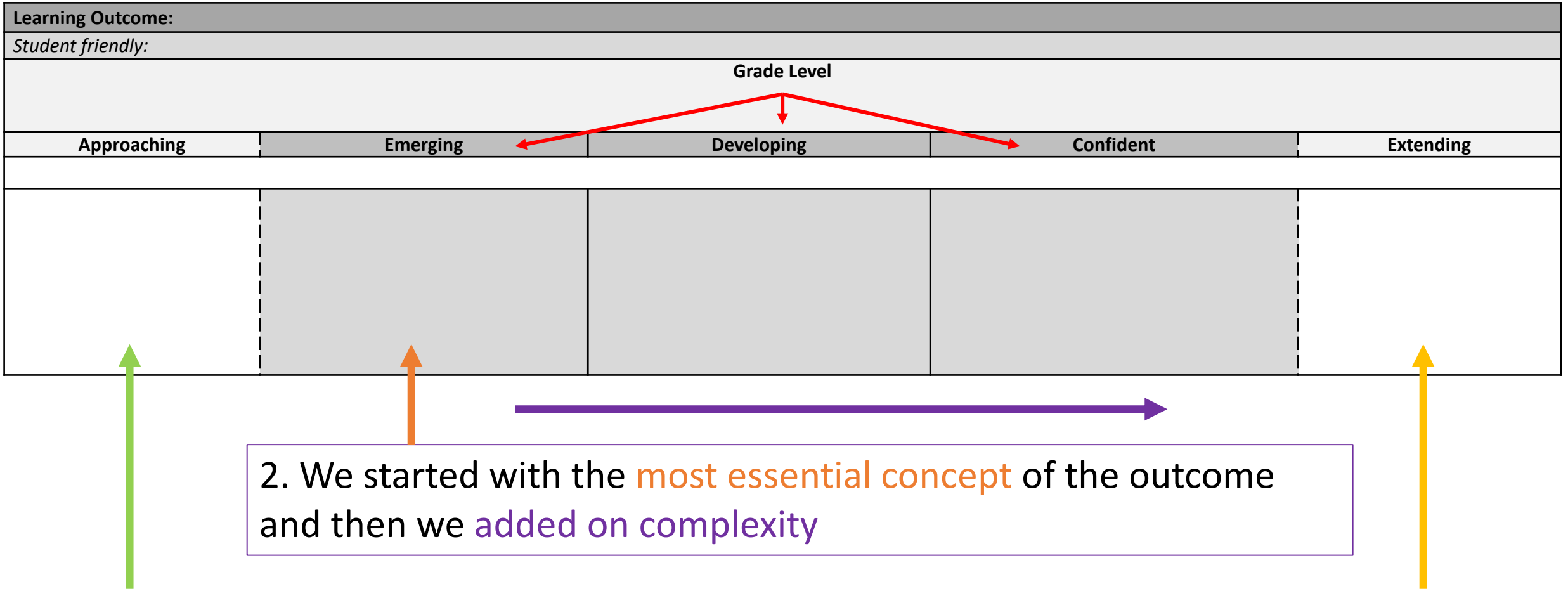
Shelley Moore, 2019

How can we change the system?
Designing with Equity in Mind



Our Co-Planning Journey: Learning Continuums

1. Using the elaborations for each learning outcome, we constructed a grade-level scaffold in *student friendly language*



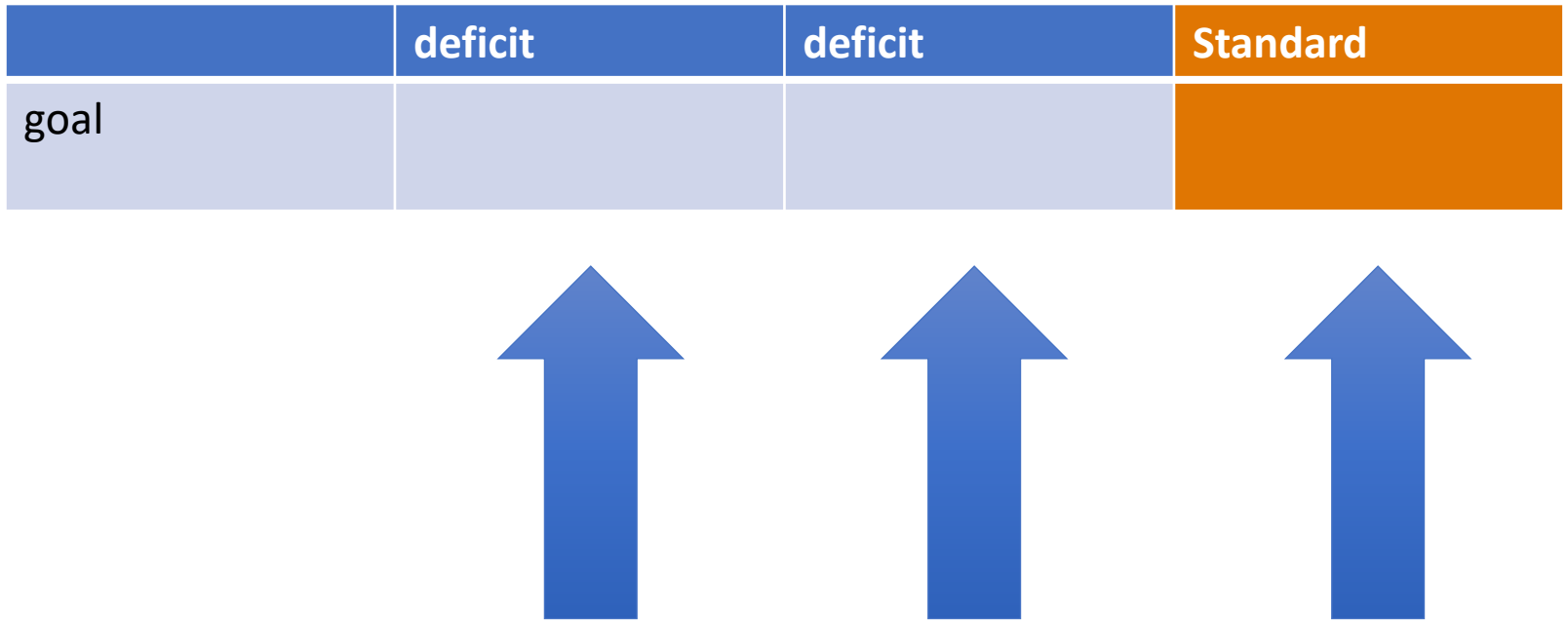
2. We started with the most essential concept of the outcome and then we added on complexity

3. We extended the grade level scaffold to include an access point and challenge point

Learning Maps

- Adjustable curriculum
- More than one “standard” designed for the average
- Multiple exit points
- Multiple achievement measures
- Start from access, add on challenge
- Different from a rubric

Rubrics vs. Learning Maps



THE SCRUMPTIOUS RUBRIC REFERENCE

BARELY HANGING ON

The customer wants a refund. Bread alone is not a sandwich. It's like you gave the bread and pop out just to show you were listening.

Translation: You only did the small stuff to suffice turning it in. The artwork is missing all important details and signs of understanding or perseverance.

NEEDS SOME UMPH

Your sandwich disappoints the customer. There's no flavor and not enough meat, if any at all. About the only thing great is the Citrus Drop.

Translation: You are missing important details within your artwork. Expectations are not met. Improvement is needed and lack of understanding is present.

GETS THE POINT

Your sandwich met expectations. It has flavor but nothing too exciting. You included the meat but gee, a side of chips would be nice.

Translation: Your artwork meets expectations, you went as far as the requirements expected and you used what knowledge you had to do so.

RIGHT ON!

Your sandwich went beyond expectations. You threw in some extra flavor and tomatoes and surprised the customer with a side of chips.

Translation: Your artwork exceeds all expectations; you used creativity, went beyond the basic requirements and showed obvious understanding.

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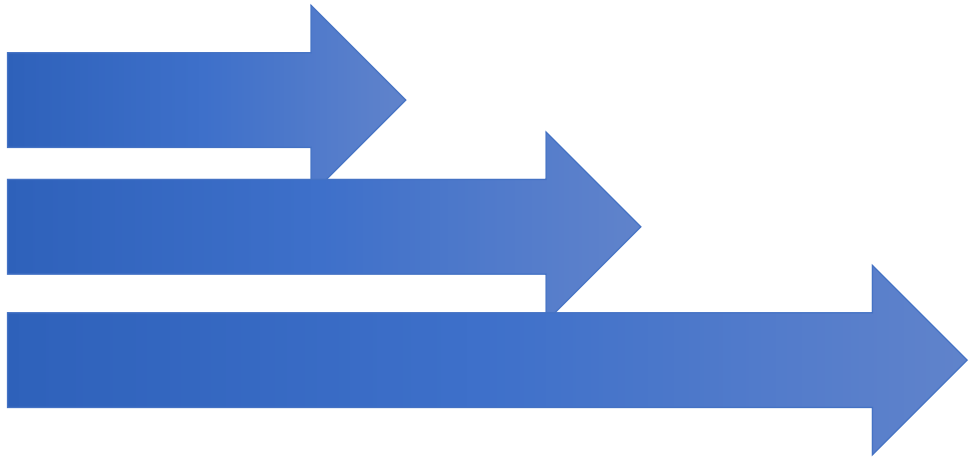
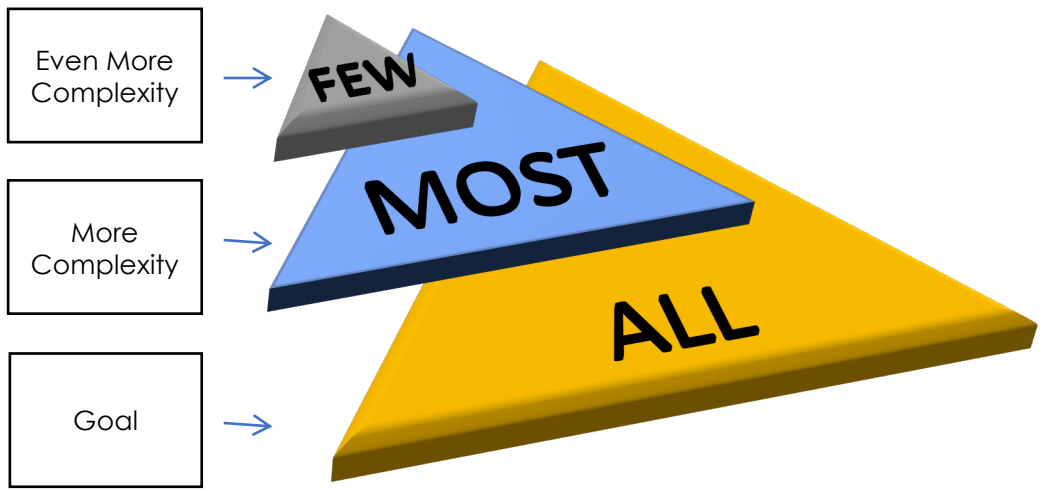
Inclusive Education: It's not more work, it's different work!

Rubrics vs. Learning Maps

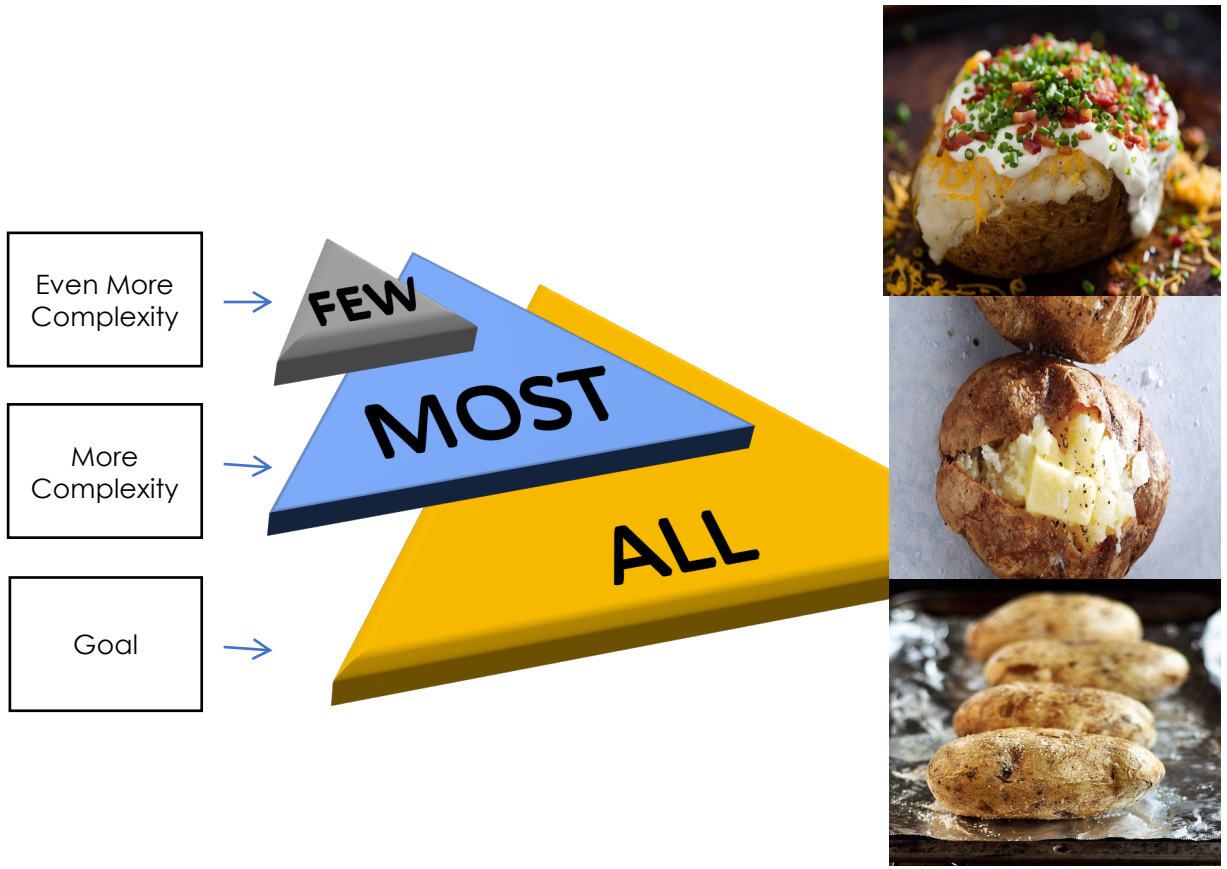
	Standard	More complex	More complex
goal			



Adjustable Curriculum: Planning Pyramid



Adjustable Curriculum: Planning Pyramid

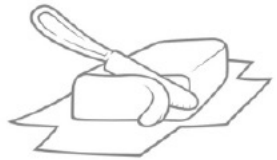


Baked Potato Planning Pyramid: Designing for a range of complexity

Goal:

Goal for **ALL**

Goal for **MOST**



Goal for **FEW**

Shelley Moore, 2019

Creating Access AND Challenge

Challenge

Even more goals

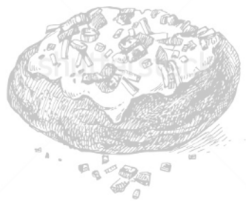
More goals

Goals

Access

The Baked Potato Planning Strategy:

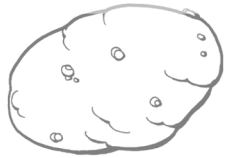
Goal:



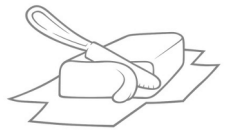
Elaborations/ Achievement Indicators

Goal for ALL (Essential)

Access



Goal for MOST (add complexity)

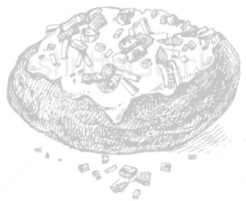


Goal for FEW (add complexity)

Challenge

The Baked Potato Planning Strategy:

Goal:



Elaborations/ Achievement Indicators

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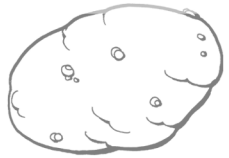

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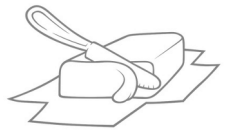


Goal for FEW (add complexity)

Challenge

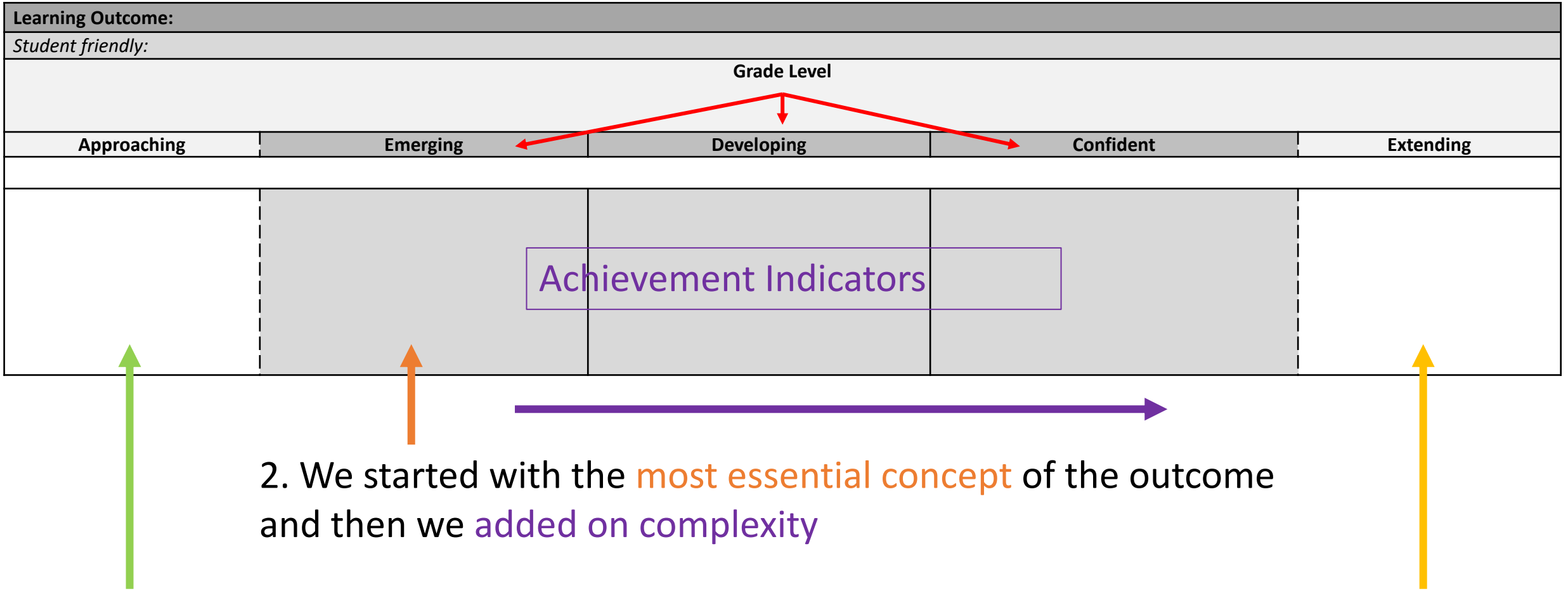
Our Co-Planning Journey: Learning Continuums

1. Using the elaborations for each learning outcome, we constructed a grade-level scaffold in *student friendly language*

Learning Outcome:				
Student friendly:				
		Grade Level		
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
	Achievement Indicators			

Our Co-Planning Journey: Learning Continuums

1. Using the elaborations for each learning outcome, we constructed a grade-level scaffold in *student friendly language*



2. We started with the most essential concept of the outcome and then we added on complexity

3. We extended the grade level scaffold to include an access point and challenge point

Rubric: Science – The problem is frequency

Content Goal: properties of familiar materials				
Student friendly: I know how to interact with objects and materials by using my senses by:				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
• I know properties of familiar objects with support	• I am beginning to know properties of familiar objects	• I am sometimes know properties of familiar objects	• I consistently know properties of familiar objects	• I always know properties of familiar objects

Fake Learning Continuum: Science – the problem is subjectively and lack of clarity

Content Goal: properties of familiar materials			
Student friendly: I know how to interact with objects and materials by using my senses by:			
1	**2**	**3**	**4**
• I have an emerging understanding of the learning outcome	• I have a developing understanding of the learning outcome	• I have a proficient understanding of the learning outcome	• I have a sophisticated understanding of the learning outcome

Learning Continuum: Science

Content Goal: properties of familiar materials				
Student friendly: I know how to interact with objects and materials by using my senses by:				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
→				
• Showing (or matching) that I know what rocks, fabric, soil, wood, sand, plastic, paper, sponges, metal are	• Using colour & texture to describe objects and materials • Describing roots, bark, trunk and needs of a cedar) • Describing fabric and soil	• Using hardness and flexibility to describe objects and materials • Describing wood, sand, plastic • Describing rocks	• Using absorbency to describe objects and materials • Describing paper, sponges • Describing berries (frozen), dyed fabric	• Using lustre to describe objects and materials • Describing metals • Describing bones, fur

Rubric: Science

Content Goal: properties of familiar materials				
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Fake Learning Continuum: Science

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Learning Continuum: Science

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Learning Continuums: Science

Content Goal: properties of familiar materials

Student friendly: I know how to **interact** with objects and materials by using my **senses by:**

Approaching	Emerging	Developing	Confident	Extending
Showing (or matching) that I know what fabric, soil, wood, sand, plastic, paper, sponges, metal	Using colour & texture to describe objects and materials Describing fabric and soil Describing roots, bark, trunk and needs of a cedar)	Using hardness and flexibility to describe objects and materials Describing wood, sand, plastic Describing rocks	Using absorbency to describe objects and materials Describing paper, sponges Describing berries (frozen), dyed fabric	Using lustre to describe objects and materials Describing metals Describing bones, fur

Content Goal: effects of pushes/pulls

Student friendly: I know different ways that objects move

Approaching	Emerging	Developing	Confident	Extending
I know (can show) push, pull, roll, and bounce	I know what action I am taking and what objects and materials I am using	I know what happens when I (roll, push, bounce etc.) objects over different materials	I know that some objects move better on some materials than others	I know why some objects move better on some materials than others

Content Goal: local First Peoples uses of plants

Student friendly: I know different ways that First Peoples **use** objects and materials

Approaching	Emerging	Developing	Confident	Extending
I know what cedar is, what rocks are etc.	cedar – parts of the cedar, how it is used	Rocks – use of rocks for making gardens, cooking, bentwood boxes	Berries – dying, fabric, art, food	Animals – food, clothing, entire animal, bones, symbolism/ character

Curricular Competency Goal: Planning and conducting: making exploratory observations using senses

Student friendly: I can share what happened by using my senses

Approaching	Emerging	Developing	Confident	Extending
I can look at different objects and materials I can follow a model to move objects	I can use properties of objects and materials to describe what I see and feel	I can observe different objects interact with different materials and describe what I see	I can compare how different objects move on different materials	I can explain which materials and surfaces work better for certain objects to move

Learning Continuums: Art

Content Goal: processes, materials, movements, technologies, tools, and techniques to support arts activities				
Student Friendly: I know how to use materials and objects to **create** art				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
I can create art based on a model.	I can create art based on a model and a limited number of materials and a limited number of steps.	I can create art based on a model and selected materials/ objects and following a step by step process.	I can create unique art using a variety of materials independently and describe the process.	I can create unique art and describe the process. I can tell you what I enjoyed about the process and explain why.

Content Goal: traditional and contemporary Aboriginal arts and arts-making processes (art)				
Student Friendly: I know how First Peoples use materials and objects to make art				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
??? Need help from Indigenous Team				

Curricular Competency Goal: Create artistic works collaboratively and as an individual, using ideas inspired by imagination, inquiry, experimentation, and purposeful play				
Student Friendly: I can **create** art by **playing** and using **different materials by myself** and **with others**.				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
I can create art by myself.	I can create art with others.	I can create art by following a plan by myself and with others.	I can make a plan and follow it when creating art. I can change my plan when I create art with others.	I can plan with others and follow our plan when creating art as a team.

Grade: 9	Subject Area: Social Studies	Planning Team: Heather, Jenny, Shelley
Big Idea: Exploration, expansion, and colonization had varying consequences for different groups		**Unit Guiding Question(s):** Where are the traces of exploration, expansion and/or colonialization in our community and the world? What artifacts remain and/or are being created to honour the past, present and future in ethical ways?
	Curriculum	**Student Friendly Goals**
Content Goal 1:	exploration, expansion, and colonization	I know **exploration** I know **expansion** I know **colonization** I know how they are connected
Curricular Competency Goal:	Determine which causes most influenced particular decisions, actions, or events, and assess their short- and long-term consequences (cause and consequence)	I can describe what influences **causes** (actions and events) I can figure out the short and long term **consequences** (effects)
Curricular Competency Goal:	Explain different perspectives on past or present people, places, issues, or events, and compare the values, worldviews, and beliefs of human cultures and societies in different times and places (perspective)	I can explain different **perspectives** I can compare different perspectives
Curricular Competency Goal:	Make ethical judgments about past events, decisions, or actions, and assess the limitations of drawing direct lessons from the past (ethical judgment)	I can make **ethical judgements** I can **assess historical perspectives**

Social Studies 9: What Can we Learn from Artifacts?

Our Unit Questions

- Where are the **traces** of **exploration**, **expansion** and/or c**olonialization** in our community and the world?
- What **artifacts** remain and/or are being created to **honour** the past, present and future in e**thical** ways?
- How can we communicate and educate other about the **traces** of **colonialism**?

Important vocabulary to know and use

exploration	**resources**	**short term**
expansion	**civilizations**	**long term**
colonization	**cause & consequence**	**perspective**
values & beliefs	**worldview**	**ethical judgement**
artifacts	**traces**	**honour**

What are the goals and how will we meet them?

Our Goals for this Unit	**Summative Task Activities**
Content Goal: I know **exploration**, **expansion**, and **colonization**	Choose an artifact that was created and celebrated in the name of exploration, expansion and/or colonialization
Curricular Competency Goal: I can determine which causes most influenced particular decisions, actions, or events, and assess their **short-and long-term** consequences (**cause and consequence**)	Why was this artifact created? What was it celebrating?
Curricular Competency Goal: I can explain different **perspectives** on past or present people, places, issues, or events, and compare the **values**, **worldviews**, and **beliefs** of human cultures and societies in different times and places (**perspective**)	What do you think the response to this artifact would have been at the time? What are some alternative perspectives of the celebration of this artifact?
Curricular Competency Goal: I can make **ethical judgments** about past events, decisions, or actions, and assess the limitations of drawing direct lessons from the past (**ethical judgment**)	What would be your ethical judgement, as to whether or not this artifact should continue to be celebrated and/or maintained?

One point rubric

Name:	Date:

Unit Guiding questions:
Where are the traces of exploration, expansion and/or colonialization in our community and the world? What artifacts remain and/or are being created to honour the past, present and future in ethical ways?

I still need support	I can do this!	I need some challenge
	I know **exploration** I know **expansion** I know **colonization** I know how they are connected	
	I can describe what influences **causes** I can figure out the short- and long-term **consequences**	
	I can explain different **perspectives** I can compare different perspectives	
	I can make **ethical judgements** I can **assess historical perspectives**	

Collecting Evidence of my Learning

Our Unit Questions

- Where are the **traces** of **exploration**, **expansion** and/or c**olonialization** in our community and the world?
- What **artifacts** remain and/or are being created to **honour** the past, present and future in e**thical** ways?
- How can we communicate and educate other about the **traces** of **colonialism**?

Content Goal: I know exploration, expansion, and colonization

Approaching	Emerging	Developing	Confident	Extending
I know a time or a place that I have explored I know some explorers in history	I know what exploration & expansion is I know civilizations that have been explored & expanded	I know what colonialization is I know civilizations that have been colonialized in the past	I know the connections between exploration, expansion and colonialization	I know civilizations that have been and still are colonialized in the past and present

Curricular Competency Goal: I can determine which causes most influenced particular decisions, actions, or events, and assess their short-and long-term consequences (cause and consequence)

Approaching	Emerging	Developing	Confident	Extending
I can figure out the effect of a cause (decision, action or event) connected to something I am familiar with	I can determine causes of a decision, action or an event	I can determine what influenced a (cause) decision, action or an event	I can assess short term consequences of a cause (decision, action, event)	I can assess long term consequences of a cause (decision, action, event)

Curricular Competency Goal: I can explain different perspectives on past or present people, places, issues, or events, and compare the values, worldviews, and beliefs of human cultures and societies in different times and places (perspective)

Approaching	Emerging	Developing	Confident	Extending
I can describe a different point of view in an event that I am familiar with	I can describe different perspectives of places, issues and events	I can describe different perspectives of places, issues and events over time and how these perspectives change over time	I can compare the perspectives of different values, worldviews and beliefs	I can compare the perspectives of different values, worldviews and beliefs over time and how the perspectives they change

Course/Subject/Grade(s): Socials 8				Planning Team: Heather, Jenny, Shelley		
Unit Guiding Question: How has/is exploration **impacting** different groups of people around the world? How are **exploration**, **expansion** and **colonialization** connected?						
Goals		Approaching (Replacement IEP/I)	Emerging (C-/ C)	Developing (B-/ B)	Confident (A-/A)	Extending (A+)
Content: I know exploration, expansion, and colonization		I know a time or a place that I have explored I know some explorers in history	I know what exploration is I know civilizations that have been explored	I know what expansion is I know civilizations that have been expanded	I know what colonialization is I know civilizations that have been colonialized in the past	I know the connections between exploration, expansion and colonialization I know civilizations that have been and still are colonialized in the past and present
I know interactions and exchanges of resources, ideas, arts, and culture between and among different civilizations		I know what a resource is I know resources in my local community	I know resources of different civilizations	I know how resources interact with local and different civilizations (effect)	I know how resources are exchanged within and between different civilizations	I know why resources are exchanged within and between different civilizations
Curricular Competencies	I can determine which causes most influenced particular decisions, actions, or events, and assess their short-and long-term consequences (cause and consequence)	I can figure out the effect of a cause (decision, action or event) connected to something I am familiar with	I can determine causes of a decision, action or an event	I can determine what influenced a (cause) decision, action or an event	I can assess short term consequences of a cause (decision, action, event)	I can asses long term consequences of a cause (decision, action, event)
	I can explain different perspectives on past or present people, places, issues, or events, and compare the values, worldviews, and beliefs of human cultures and societies in different times and places (perspective)	I can describe a different point of view in an event that I am familiar with	I can describe different perspectives of places, issues and events	I can describe different perspectives of places, issues and events over time and how these perspectives change over time	I can compare the perspectives of different values, worldviews and beliefs	I can compare the perspectives of different values, worldviews and beliefs over time and how the perspectives they change
	I can make ethical judgments about past events, decisions, or actions, and assess the limitations of drawing direct lessons from the past (ethical judgment)	I can make an opinion (agree or disagree) with an event, action or decision	I can make a judgement about a past event, action or decision	I can make an ethical judgement about a past event, action or decision	I can learn a lesson about a past event, action or decision	I can assess the limitations of a lesson learned from a past event, action or decision

Assessment: Non-Graded

Activities to Collect Possible Evidence of Student Learning

- Examining rocks
- Brick and stick house
- Science center: exploring materials with 5 senses
- Exploring rocks & trees
- Journal Writing: how Indigenous Peoples use rocks
- Journal Writing: creating stories
- Stories: The Two Rock Sisters
- Cedar art drawing & labelling

Activity:

Evidence: drawings (product), photos (observations)

Content Learning Outcomes

Science: properties of familiar materials
Kid Friendly: I know how to **interact** with objects and materials by using my **senses by:**

Math: concrete or pictorial graphs as a visual tool
Kid Friendly: I know how to show "**how many**" using objects and pictures

Curricular Competency Learning Outcomes

Science: Planning and Conducting: making exploratory observations using senses
Kid Friendly: I can share what happened by using my senses

Unit Guiding Questions

- How do I interact with different materials and objects?
- How can I describe different materials and objects?
- How can I be curious about play with different materials and objects?
- How can I use different materials and objects to share stories about myself and my family?
- How can I choose specific materials and objects to represent my family?

Learning Continuum: Science Content

Content Goal: properties of familiar materials				
Student friendly: I know how to interact with objects and materials by using my senses by:				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
→				
• Showing (or matching) that I know what rocks, fabric, soil, wood, sand, plastic, paper, sponges, metal are	• Using colour & texture to describe objects and materials • Describing roots, bark, trunk and needs of a cedar) • Describing fabric and soil	• Using hardness and flexibility to describe objects and materials • Describing wood, sand, plastic • Describing rocks	• Using absorbency to describe objects and materials • Describing paper, sponges • Describing berries (frozen), dyed fabric	• Using lustre to describe objects and materials • Describing metals • Describing bones, fur

Learning Continuum: Math Content

Content Goal: concrete or pictorial graphs as a visual tool				
Student friendly: I know how to show "**how many**" using objects and pictures				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
→				
• I can count the objects or pictures.	• I can draw a desired number of objects.	• I can use symbols (digits) to indicate "how many." I can compare quantities by counting the objects.	• I can compare quantities by using objects and symbols. I can identify 'fewer' and 'more' than.	• I can compare quantities by using symbols. I can identify "fewer" and "more" by reading numbers.

Learning Continuum: Science Curricular Competency

Content Goal: Planning and conducting: making exploratory observations using senses				
Student friendly: I can share what happened by using my senses				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
→				
I can look at different objects and materials I can follow a model to move objects	• I can use properties of objects and materials to describe what I see and feel	• I can observe different objects interact with different materials and describe what I see	• I can compare how different objects move on different materials	• I can explain which materials and surfaces work better for certain objects to move

Assessment: Graded

Math 10 C

MATHEMATICS 10C

[C] Communication	**[PS]** Problem Solving
[CN] Connections	**[R]** Reasoning
[ME] Mental Mathematics and Estimation	**[T]** Technology
	[V] Visualization

Measurement	
General Outcome	**Specific Outcomes** *It is expected that students will:*
Develop spatial sense and proportional reasoning.	1. Solve problems that involve linear measurement, using: • SI and imperial units of measure • estimation strategies • measurement strategies. [ME, PS, V] 2. Apply proportional reasoning to problems that involve conversions between SI and imperial units of measure. [C, ME, PS] 3. Solve problems, using SI and imperial units, that involve the surface area and volume of 3-D objects, including: • right cones • right cylinders • right prisms • right pyramids • spheres. [CN, PS, R, V] 4. Develop and apply the primary trigonometric ratios (sine, cosine, tangent) to solve problems that involve right triangles. [C, CN, PS, R, T, V]

Grade: Math 10C	Topic: Measurement	Planning Team:
Big Idea(s): What do I need to Understand? Students understand spatial sense and proportional reasoning		Unit Guiding Question(s): What is spatial sense? What is proportional reasoning? How are they connected?
Key Vocabulary:		

	Curricular Language	Student Friendly Language
What do students need to know? Knowledge goals		I know SI units I know Imperial Unite I know measurement strategies and how to use them to solve problems I know what 3D objects are and different types of 3D objects I know sine, cosign & tangent are trigonomic ratios and how to use them to solve problems
What do students need to do? Skills/Process Goals	Solve problems that involve linear measurement, using: • SI and imperial units of measure • estimation strategies • measurement strategies.	I can solve problems by: - Using different units of measure - Estimating - Using measurement strategies
What do students need to do? Skills/Process Goals	Apply proportional reasoning to problems that involve conversions between SI and imperial units of measure.	I can convert between SI and Imperial units of measure
What do students need to do? Skills/Process Goals	Solve problems, using SI and imperial units, that involve the surface area and volume of 3-D objects, including: • right cones • right cylinders • right prisms • right pyramids • spheres.	I can find the surface area and volume of 3D objects including: - Right cones - Right cylinders - Right prisms - Right pyramids - spheres
What do students need to do? Skills/Process Goals	Develop and apply the primary trigonometric ratios (sine, cosine, tangent) to solve problems that involve right triangles	I can use trigonomic ratios to solve problems that have a right triangle
What subject specific competencies do students need to develop?	I am/can _____ to help me understand. ME, PS, CN, R, V , C, T	I can use mental math strategies and estimation I am a problem solver I can make connections I can reason I can visualize I can use technology

Name:	Date:	Unit Topic: Measurement
General Learning Outcome/ Unit Guiding questions: **What is spatial sense? What is proportional reasoning? How are they connected?**		
I still need support	**I can do this!**	**I need some challenge**

- I know know SI units
- I know Imperial Unite
- I know measurement strategies and how to use them to solve problems
- I know what 3D objects are and different types of 3D objects
- I know sine, cosign & tangent are trigonomic ratios and how to use them to solve problems

1. I can solve problems by:

- Using different units of measure
- Estimating
- Using measurement strategies

2. I can find the surface area and volume of 3D objects including:

- Right cones
- Right cylinders
- Right prism
- Right pyramids
- Spheres

3. I can convert between SI and Imperial units of measure

4. I can use trigonomic ratios to solve problems that have a right triangle

I can …

use mental math strategies and estimation	solve problems	make connections	reason	visualize	use technology

…to help me understand

Backward Design

McTigue, 2010

Differentiated Activities: Opportunities to create evidence
(Formative & Summative)

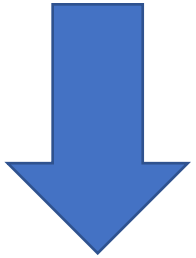
Everyone

Goals

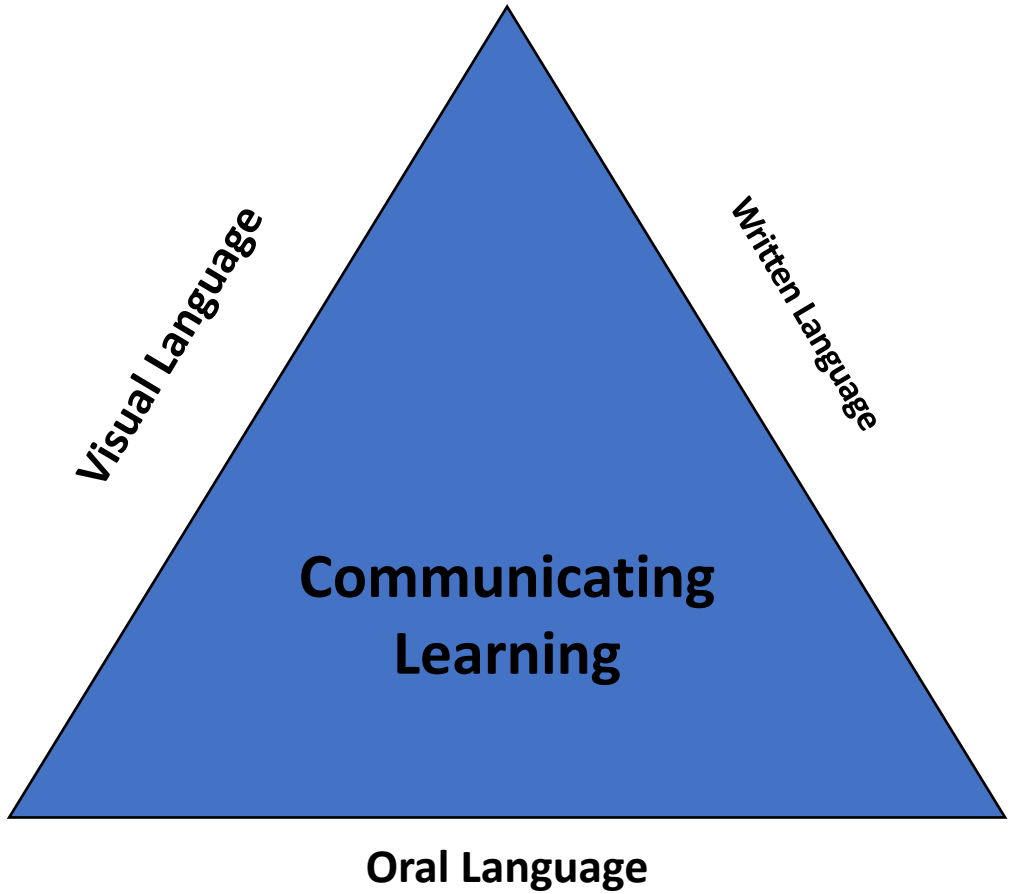
- Activity — Quiz, tests, unit exam
- Activity — Real life hands-on problem
- Activity — Visual performance task

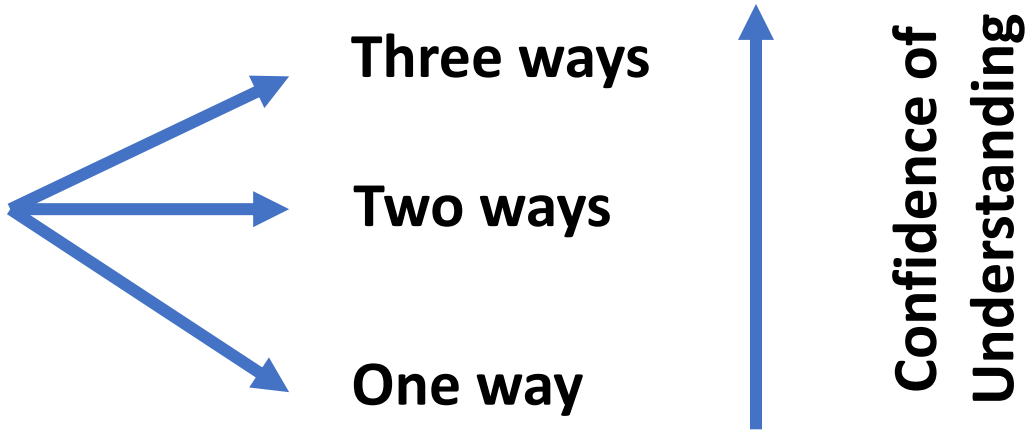
1. **I can solve problems**
2. **I can find the surface area and volume of 3D objects**
3. **I can convert between SI and Imperial units of measure**
4. **I can use trigonomic ratios to solve problems that have a right triangle**

Student choose their BEST evidence to justify their learning

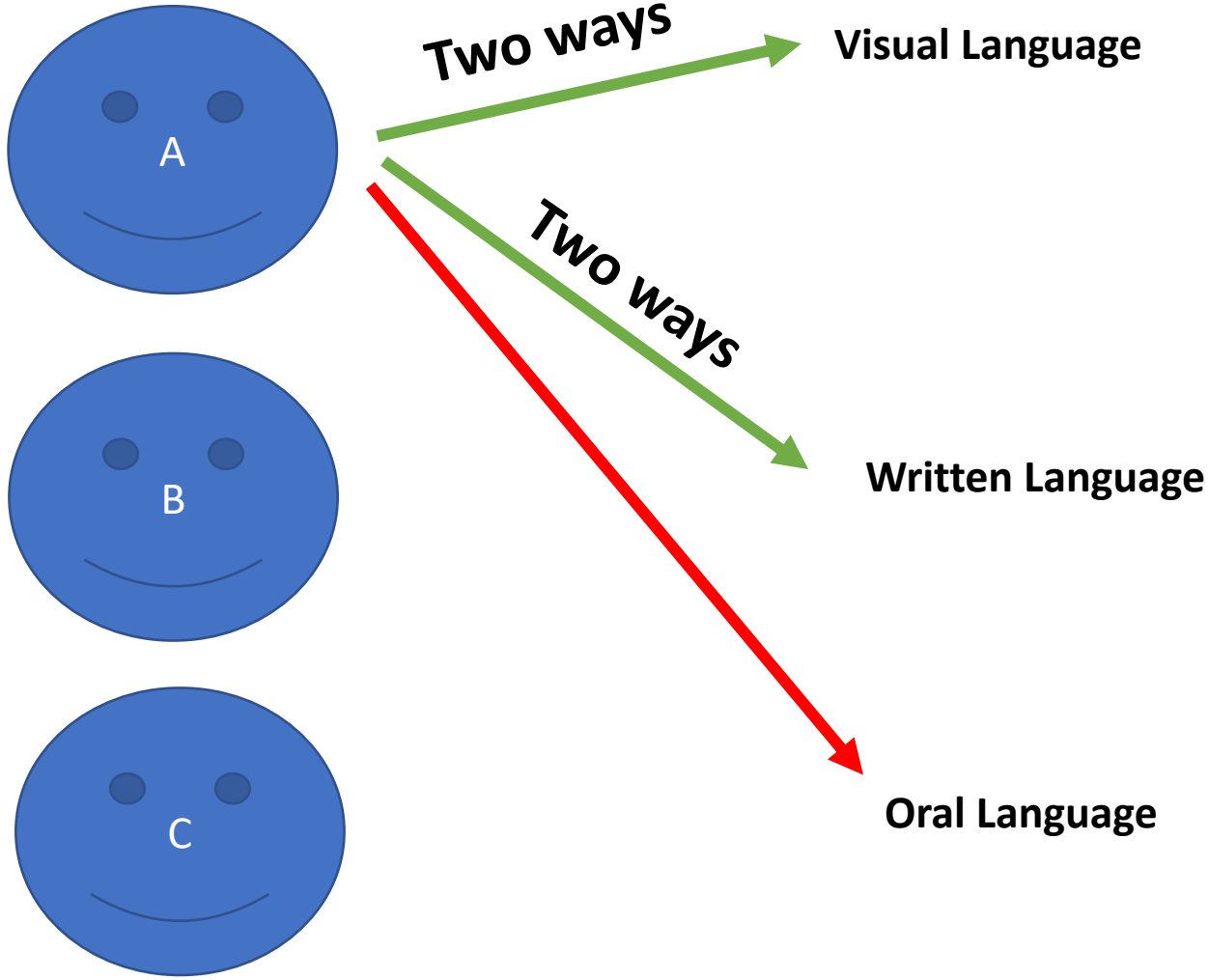


How do student show what they know?





All Languages are Treated Equal!



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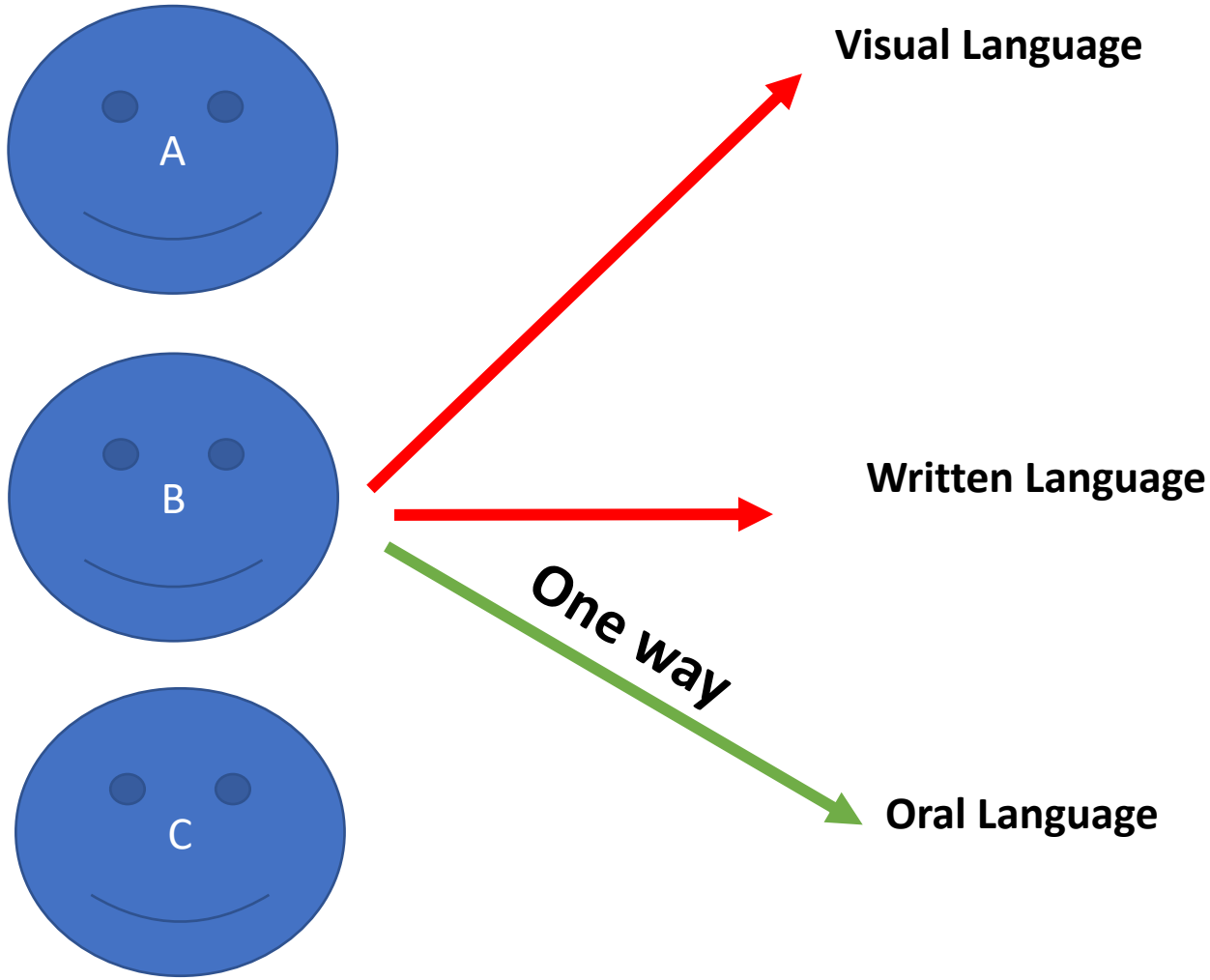

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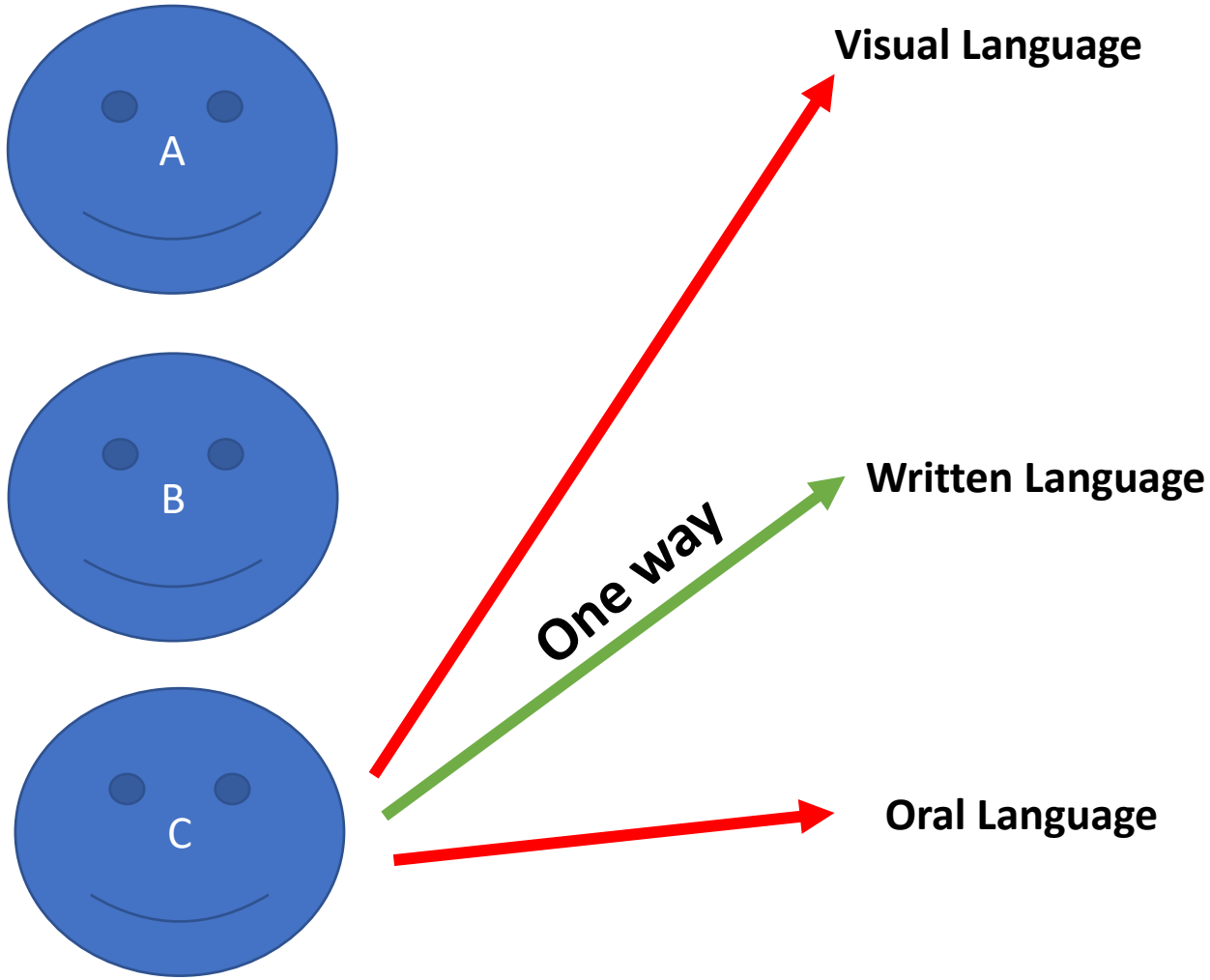

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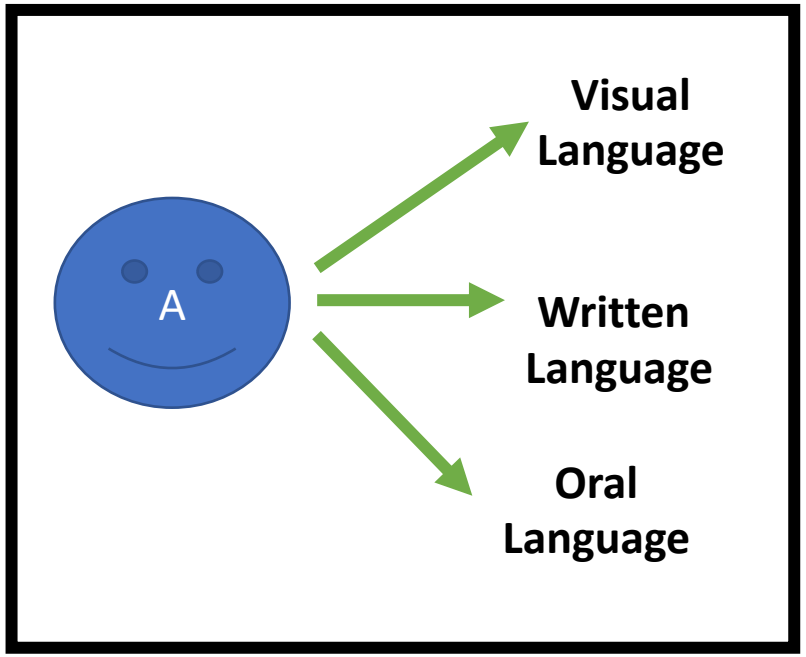
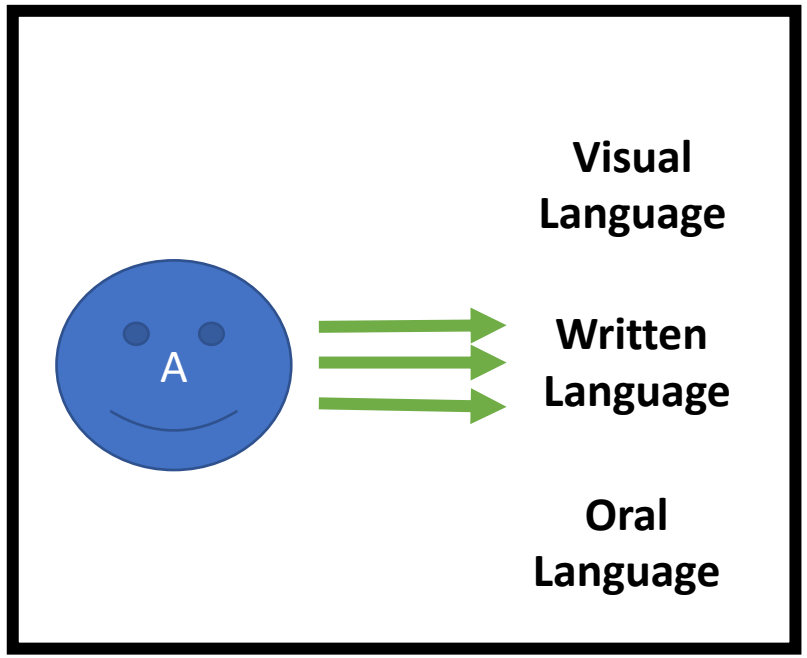


The MORE WAYS students can demonstrate learning, the more confident we are of meeting a goal

Instead of

The NUMBER OF TIMES, a student can show their learning in one way, the more confident we are of meeting a goal

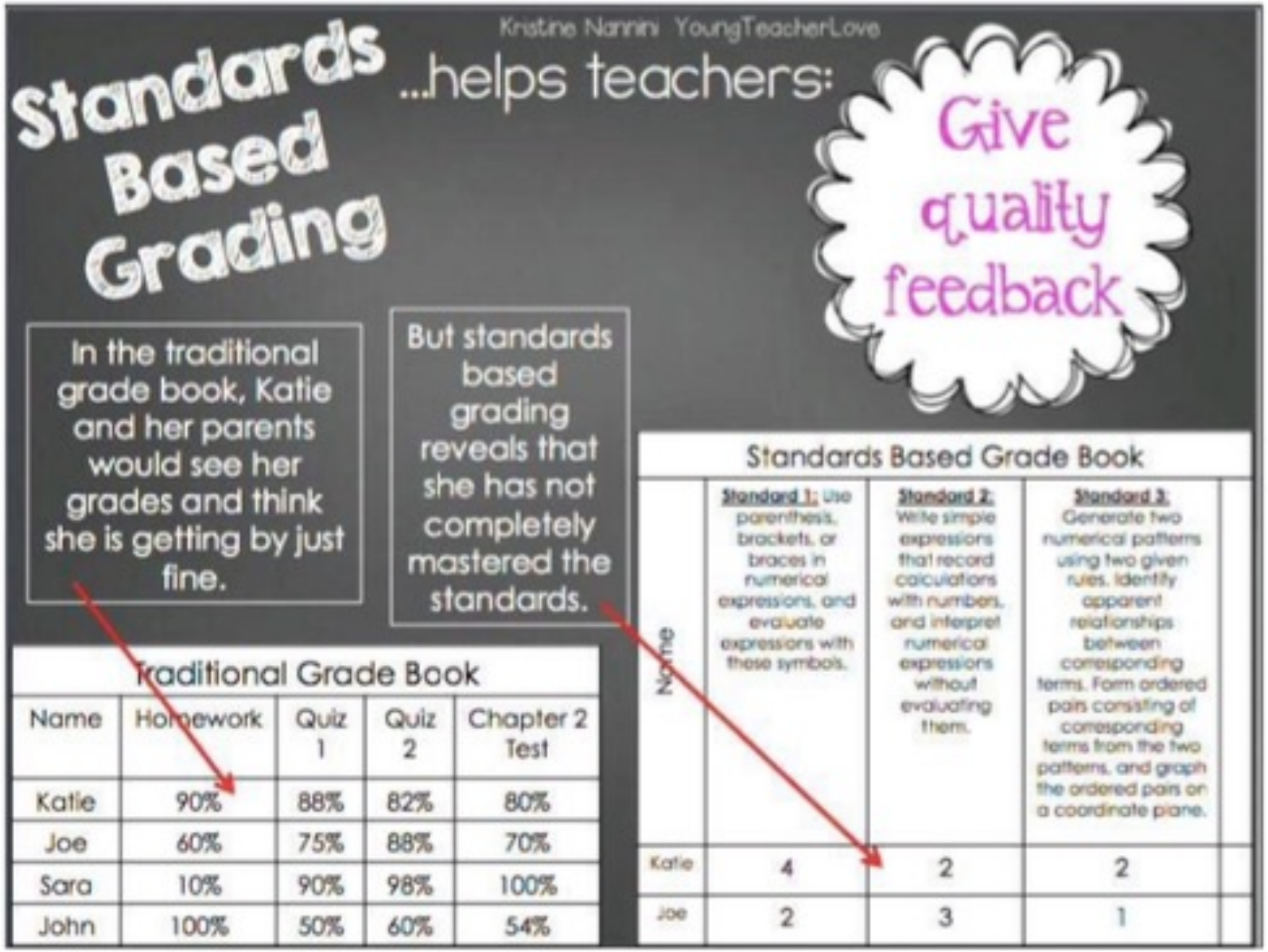


Name:	Math 10 C	Date:	Topic: Measurement

Unit Guiding Question: What is spatial sense? What is proportional reasoning? How are they connected?

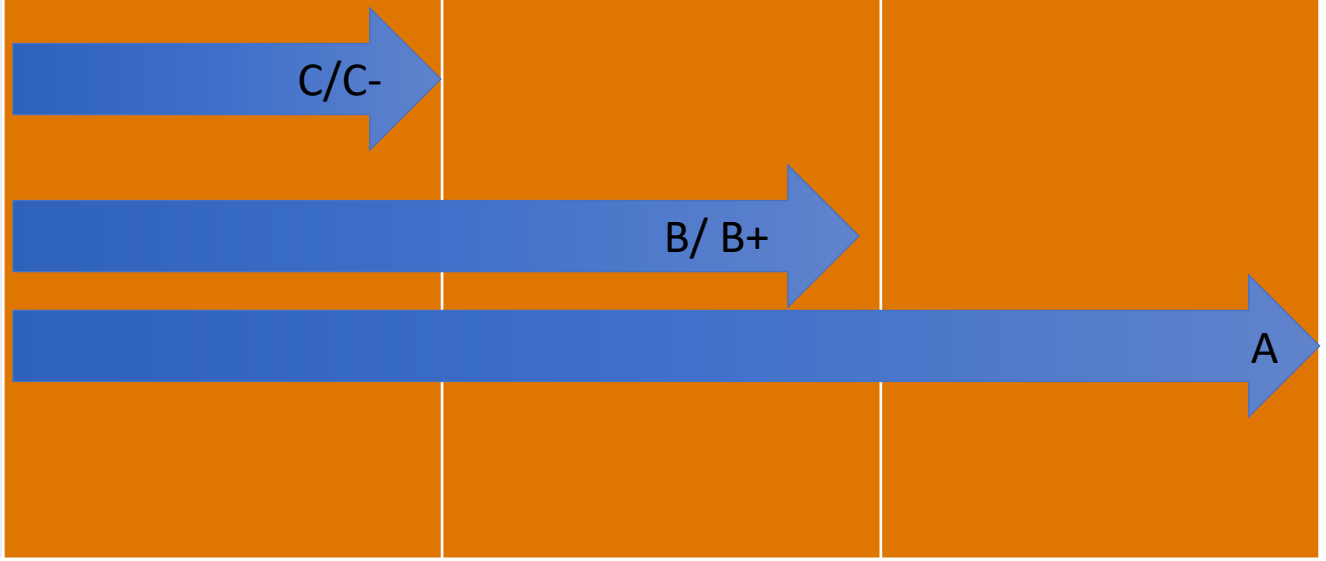
Goals	My evidence of learning	Showing my Learning			I Need Support	I Need Challenge
	Actvtivities/ tasks	concrete	pictorial	abstract		
• I know know SI units • I know Imperial Unite • I know measurement strategies and how to use them to solve problems • I know what 3D objects are and different types of 3D objects • I know sine, cosign & tangent are trigonomic ratios and how to use them to solve problems						
1. I can solve problems by: • Using different units of measure • Estimating • Using measurement strategies						
2. I can find the surface area and volume of 3D objects including: • Right cones • Right cylinders • Right prism • Right pyramids • Spheres						
3. I can convert between SI and Imperial units of measure						
4. I can use trigonomic ratios to solve problems that have a right triangle						
I can: • use mental math strategies and estimation • solve problems • make connections • Reason • Visualize • use technology						

1. Standards based vs. standardized curriculum



An Additive Continuum of Proficiency

Assessment Language	Grade Level Emerging	Grade Level Developing	Grade Level Confident
Grade Level Learning Standard	Essential Concept	More complexity	More complexity



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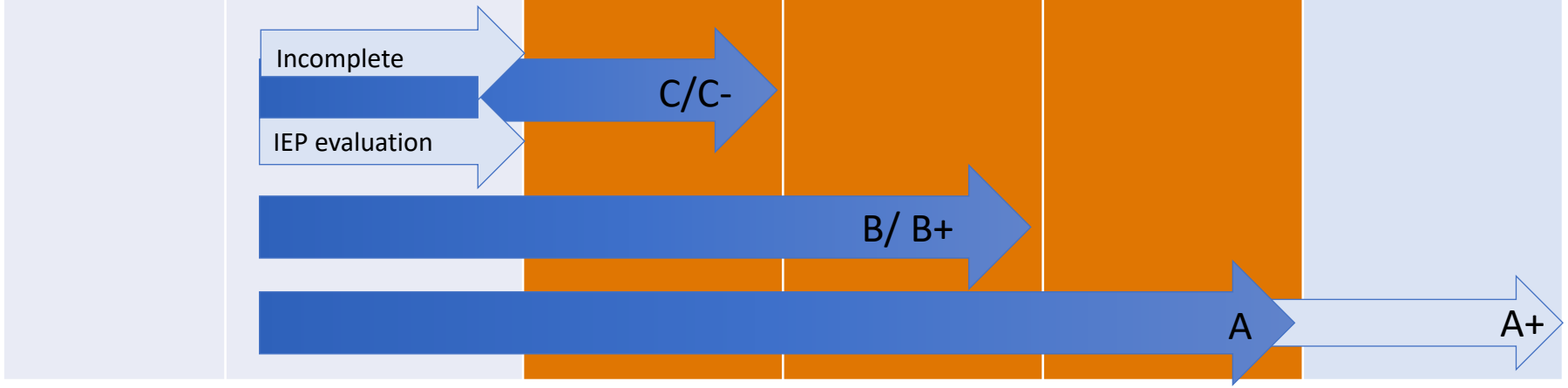
Inclusive Education: It's not more work, it's different work!

An Additive Continuum of Proficiency

Grade Level Learning Standard	Approaching Grade Level	Grade Level Emerging	Grade Level Developing	Grade Level Confident	Extending Grade Level
Assessment Language	Access Point (Curricular IEP Goal)	Essential Concept	More complexity	More complexity	Creating Challenge



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Inclusive Education: It's not more work, it's different work!

Standards Based Grade Book – Math 10 C: Measurement

Essential Understanding: Students understand spatial sense and proportional reasoning																				
Learning Outcomes	**1. I can solve problems by:** • Using different units of measure • Estimating • Using measurement strategies					**2. I can find the surface area and volume of 3D objects including:** • Right cones • Right cylinders • Right prism • Right pyramids • Spheres					**3. I can convert between SI and Imperial units of measure**					**4. I can use trigonomic ratios to solve problems that have a right triangle**				
Levels of Complexity	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending
Student																				
Student																				
Student																				
Student																				
Student																				

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Levels of Complexity	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending
Student																				
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Levels of Complexity	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending
Student	•	•				•	•				•	•				•				
Student	•					•					•	•				•				
Student	•	•	•	•		•	•				•	•								
Student	•	•	•			•										•				
Student	•					•	•				•	•	•							

Standards Based Grade Book – Math 10 C: Measurement

Essential Understanding: Students understand spatial sense and proportional reasoning

Learning Outcomes	**1. I can solve problems by:** • Using different units of measure • Estimating • Using measurement strategies					**2. I can find the surface area and volume of 3D objects including:** • Right cones • Right cylinders • Right prism • Right pyramids • Spheres					**3. I can convert between SI and Imperial units of measure**					**4. I can use trigonomic ratios to solve problems that have a right triangle**				
Levels of Complexity	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending
	ALL	**ALL**	**MOST**	**SOME**	**FEW**	**ALL**	**ALL**	**MOST**	**SOME**	**FEW**	**ALL**	**ALL**	**MOST**	**SOME**	**FEW**	**ALL**	**ALL**	**MOST**	**SOME**	**FEW**
Student	•	•				•	•				•	•				•				
Student	•					•					•	•				•				
Student	•	•	•	•		•	•				•	•								
Student	•	•	•			•										•				
Student	•					•	•				•	•	•							

Standards Based Grade Book – Math 10 C: Measurement

Essential Understanding: Students understand spatial sense and proportional reasoning

Learning Outcomes	**1. I can solve problems by:** • Using different units of measure • Estimating • Using measurement strategies					**2. I can find the surface area and volume of 3D objects including:** • Right cones • Right cylinders • Right prism • Right pyramids • Spheres					**3. I can convert between SI and Imperial units of measure**					**4. I can use trigonomic ratios to solve problems that have a right triangle**				
Levels of Complexity	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending
	ALL	**ALL**	**MOST**	**SOME**	**FEW**	**ALL**	**ALL**	**MOST**	**SOME**	**FEW**	**ALL**	**ALL**	**MOST**	**SOME**	**FEW**	**ALL**	**ALL**	**MOST**	**SOME**	**FEW**
Student	•	•				•	•				•	•				•				
Student	•					•					•	•				•				
Student	•	•	•	•		•	•				•	•								
Student	•	•	•			•										•				
Student	•					•	•				•	•	•							

Standards Based Grade Book – Math 10 C: Measurement

Essential Understanding: Students understand spatial sense and proportional reasoning

Learning Outcomes	**1. I can solve problems by:** • Using different units of measure • Estimating • Using measurement strategies					**2. I can find the surface area and volume of 3D objects including:** • Right cones • Right cylinders • Right prism • Right pyramids • Spheres					**3. I can convert between SI and Imperial units of measure**					**4. I can use trigonomic ratios to solve problems that have a right triangle**				
Levels of Complexity	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending
	ALL	**ALL**	**MOST**	**SOME**	**FEW**	**ALL**	**ALL**	**MOST**	**SOME**	**FEW**	**ALL**	**ALL**	**MOST**	**SOME**	**FEW**	**ALL**	**ALL**	**MOST**	**SOME**	**FEW**
Student	•	•				•	•				•	•				•				
Student	•					•					•	•				•				
Student	•	•	•	•		•	•				•	•								
Student	•	•	•			•										•				
Student	•					•	•				•	•	•							

Standards Based Grade Book – Math 10 C: Measurement

Essential Understanding: Students understand spatial sense and proportional reasoning

Learning Outcomes	**1. I can solve problems by:** • Using different units of measure • Estimating • Using measurement strategies					**2. I can find the surface area and volume of 3D objects including:** • Right cones • Right cylinders • Right prism • Right pyramids • Spheres					**3. I can convert between SI and Imperial units of measure**					**4. I can use trigonomic ratios to solve problems that have a right triangle**				
Levels of Complexity	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending
	ALL	ALL	MOST	SOME	FEW	ALL	ALL	MOST	SOME	FEW	ALL	ALL	MOST	SOME	FEW	ALL	ALL	MOST	SOME	FEW
Student	•	•				•	•				•	•				•				
Student	•	•				•	•				•	•				•				
Student	•	•	•	•		•	•				•	•				•				
Student	•	•	•			•	•									•				
Student	•	•				•	•				•	•	•			•	•			

Standards Based Grade Book – Math 10 C: Measurement

Essential Understanding: Students understand spatial sense and proportional reasoning

Learning Outcomes	**1. I can solve problems by:** • Using different units of measure • Estimating • Using measurement strategies					**2. I can find the surface area and volume of 3D objects including:** • Right cones • Right cylinders • Right prism • Right pyramids • Spheres					**3. I can convert between SI and Imperial units of measure**					**4. I can use trigonomic ratios to solve problems that have a right triangle**					Evaluation Date:			
Levels of Complexity	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Approaching	Minimally Meeting / Emerging	Meeting/ Developing	Fully Meeting/ Proficient	Extending	Total	Out of	%	Letter Grade
	2.5		3	4	5	2.5		3	4	5	2.5		3	4	5	2.5		3	4	5	20	20		
	ALL	ALL	MOST	SOME	FEW	ALL	ALL	MOST	SOME	FEW	ALL	ALL	MOST	SOME	FEW	ALL	ALL	MOST	SOME	FEW				
Student	•	•				•	•				•	•				•	•				10	20	50%	Pass
Student	•	•	•	•		•	•	•	•		•	•	•	•		•	•	•	•		16	20	80%	A-
Student	•	•	•	•		•	•				•	•				•		•			IEA	20		IE
Student	•	•	•	•		•	•	•	•	•		•	•			•	•	•			15	20	75%	B
Student	•	•	•	•		•	•				•	•	•			•	•	•	•		13.5	20	68%	C+

Reflection

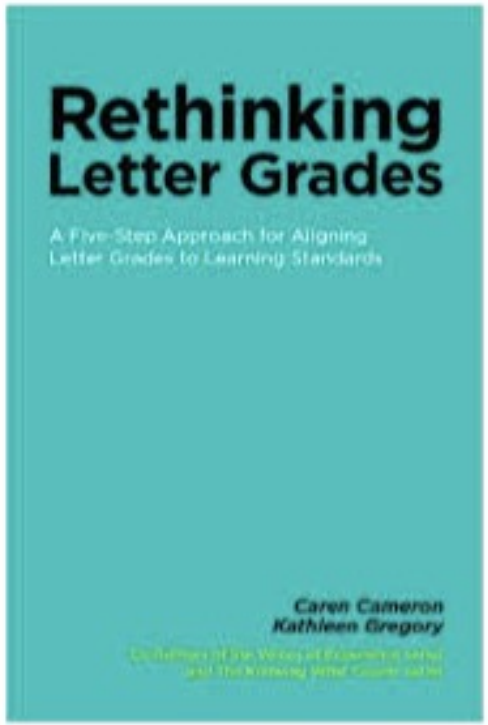
How does **Backwards Design** increase student success in curriculum?

How does **Standards Based Grading** increase student success in curriculum?

Next Time

Supporting teacher shifts in practice and thinking!

Rethinking Letter Grades



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