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Thinking Back & Sharing Out

1. What is standing out from last session?
2. What have you tried?
3. What are you noticing about your thinking & practice?
4. What are you hoping to get out of today?

Today

1. Quick Review
2. Learning Continuums
3. Co-Planning Demonstration
4. Assessment & Evaluation
5. Needs Based Design

Student

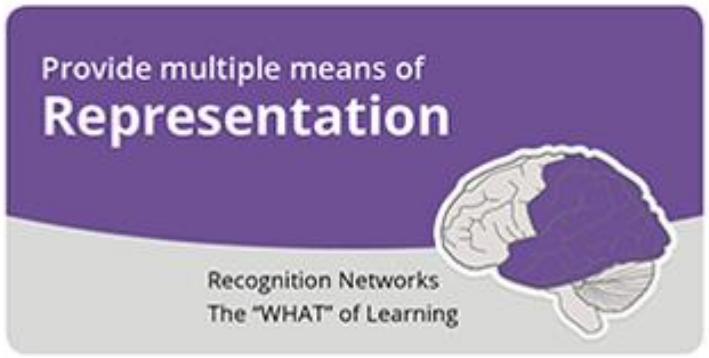
Learning

Ramp: UDL

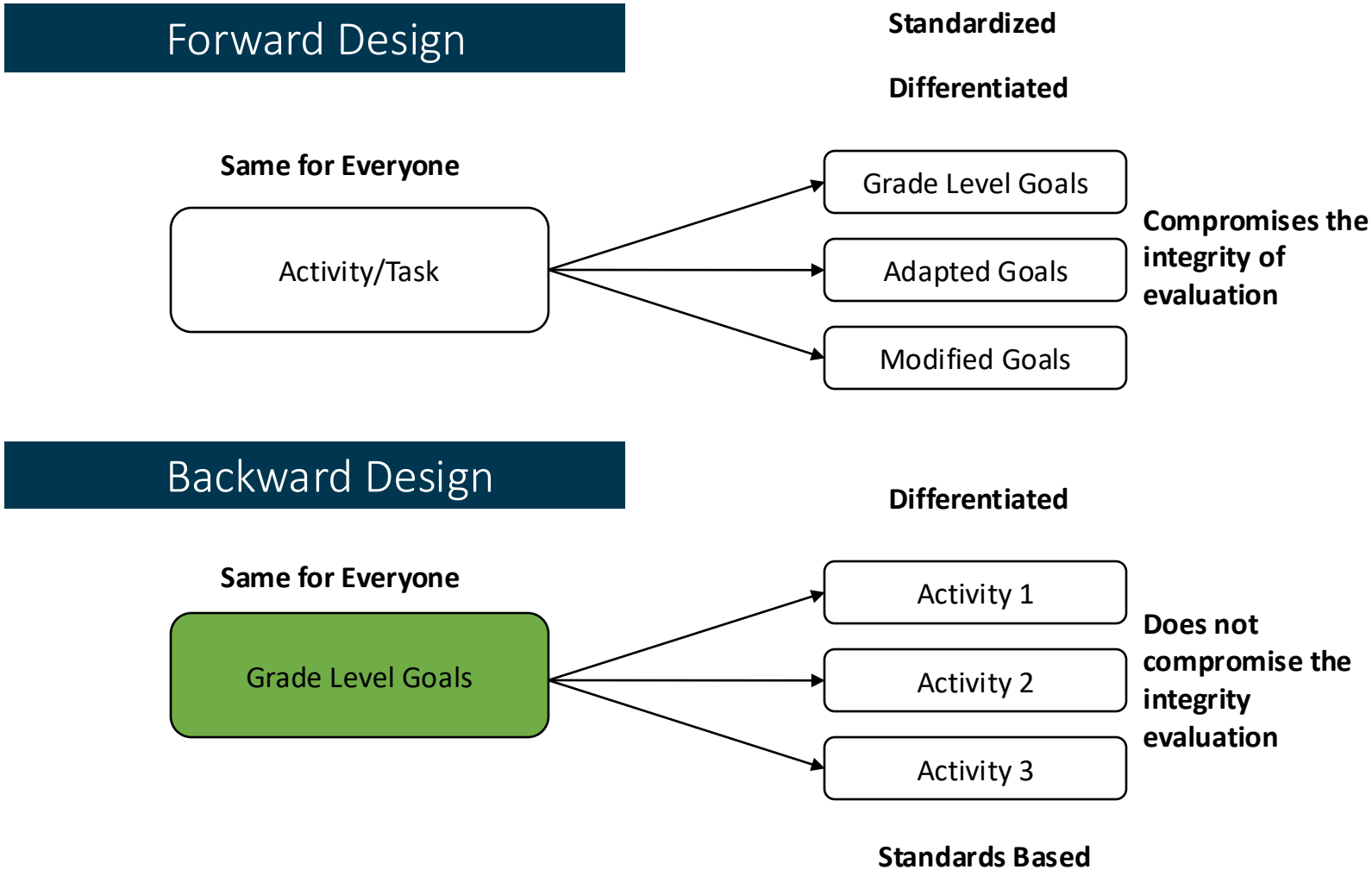
Shelley MOORE PH.D.

2023

Universal Design for Learning: The Ramp for Learning



UBD: Determining the Learning Standard



McTigue, 2010

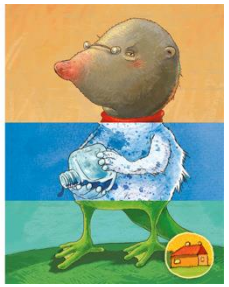
Backwards Design:
What are the GOALS?

- **Backwards Design**
  - **Big Idea**
    - What do we need to understand?
  - **Content**
    - What do we need to know?
  - **Curricular Competencies**
    - What do we need to do?
  - **Core Competencies**
    - Who do we need to become?

Miserable

Two-toed

Lizard



BIG IDEA

Context
Place/ Strengths/ Interests/ Inquiry/ provides context to help students to understand

Teacher Evaluation

Content

Scope & Sequence
Knowledge base needed to develop competencies

Curricular Competencies

Responsive
Formative assessment helps us to determine which competencies skills to develop

Student Evaluation

Core Competencies

Responsive
Students decide/co-decide which core competencies to develop

Grade:	Subject Area:	Planning Team:
Big Idea(s): What do I need to Understand?		Unit Guiding Question(s):
Key Vocabulary:		

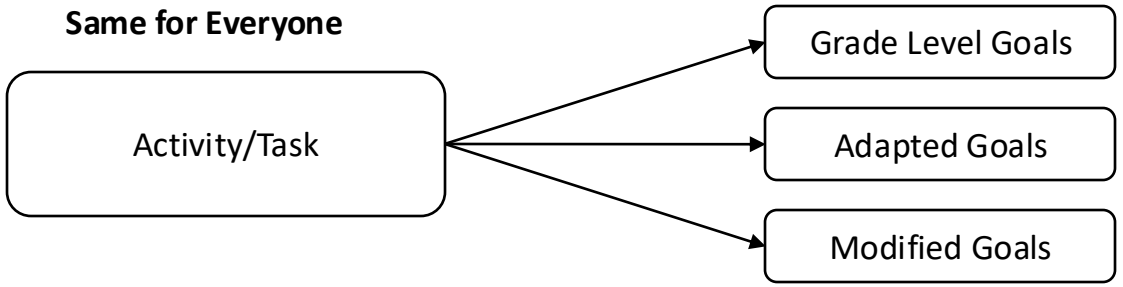
	Learning Standard	Student Friendly Language
What do students need to know? Content		I know
What do students need to do? Curricular Competencies		I can
What do students need to do? Curricular Competencies		I can
What do students need to do? Curricular Competencies		I can
Who do student need to be? Core Competency Goals	I can become/ I am…	

Forward Design

Standardized Evaluation

Differentiated

Same for Everyone

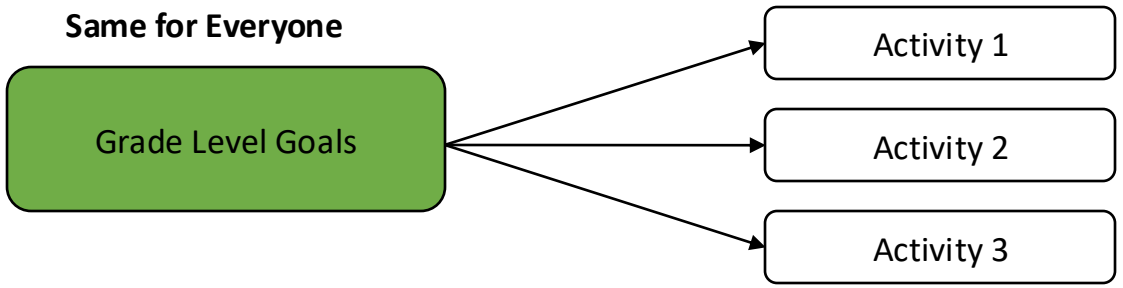


Compromises the integrity of evaluation

Backward Design

Differentiated

Same for Everyone

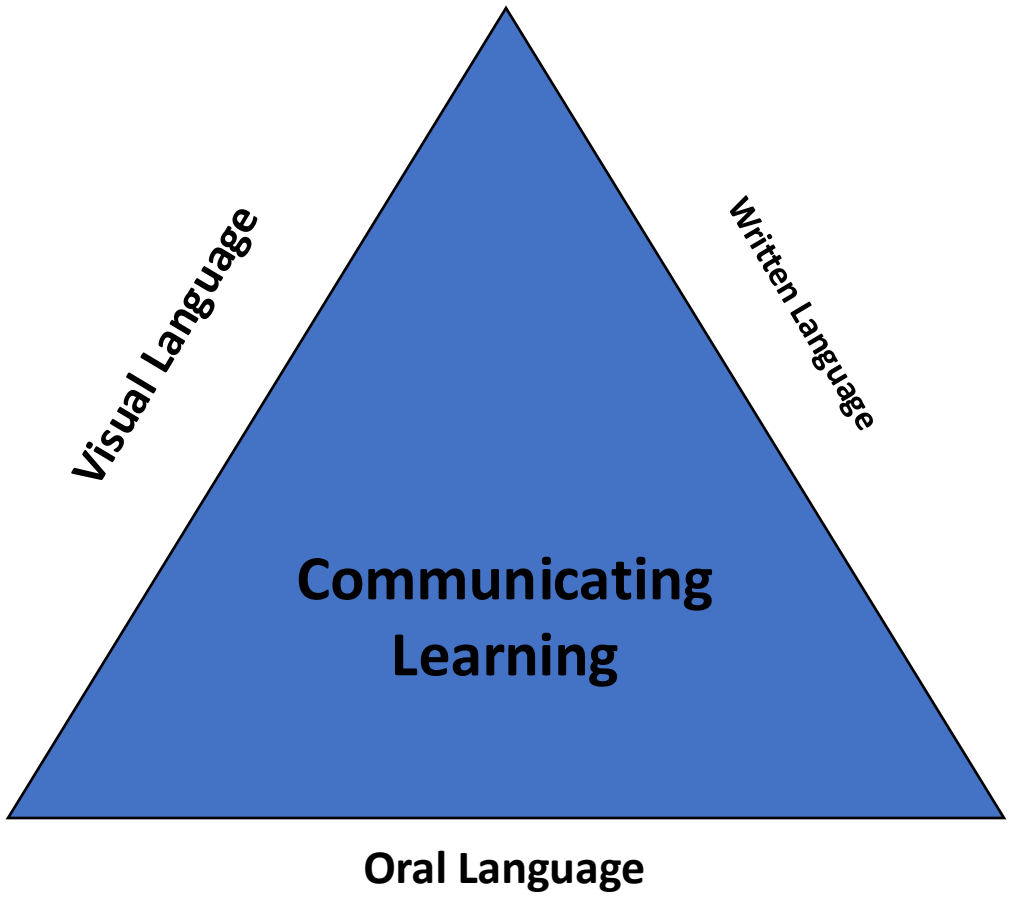


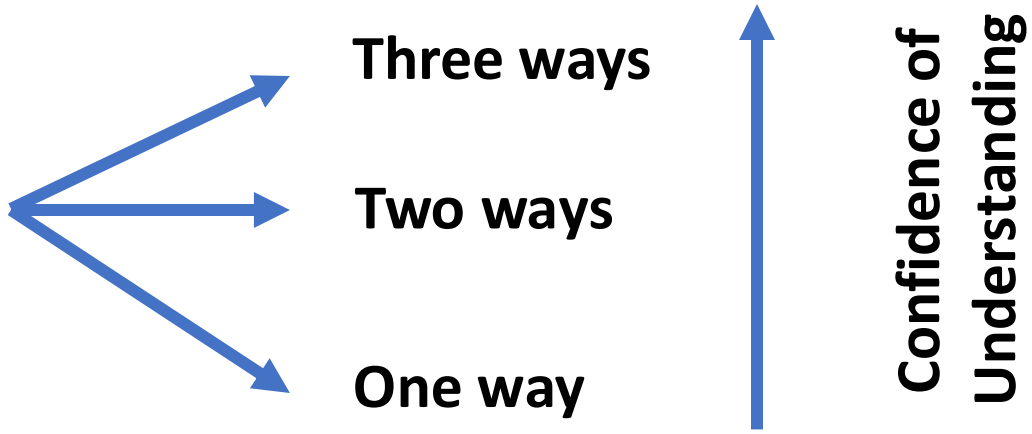
Does not compromise the integrity evaluation

Standards Based Evaluation

McTigue, 2010

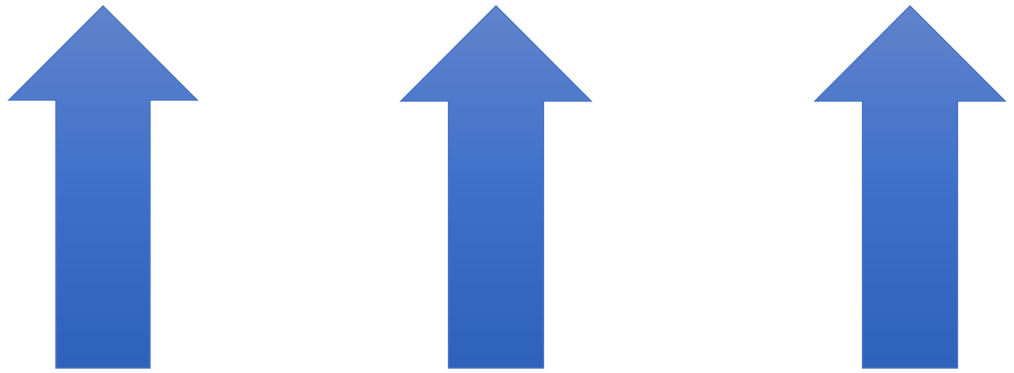
How do students show what they know?





Rubrics vs. Continuums

	deficit	deficit	Standard
goal			



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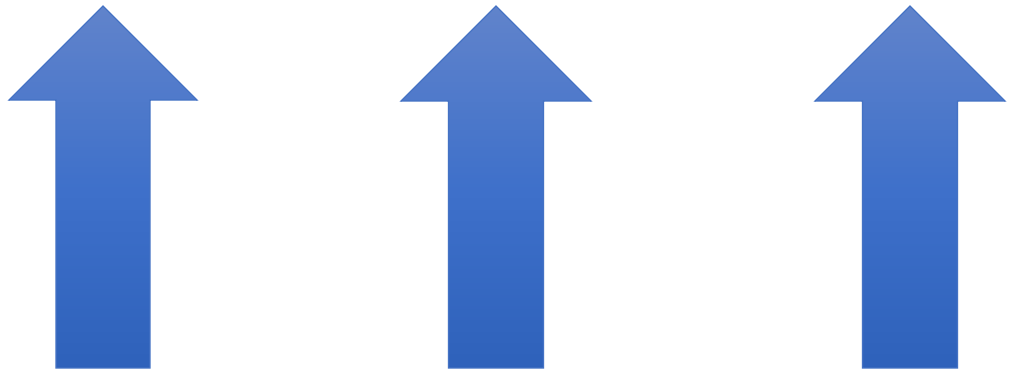
Inclusive Education: it's not more work, it's different work!

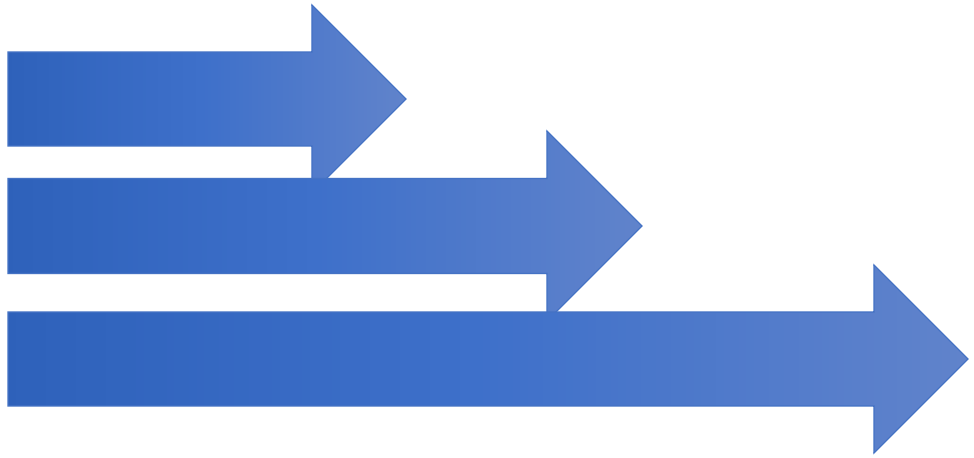
Rubrics vs. Continuums

	deficit	deficit	Standard
goal			



Reductive vs vs. Additive

	Essential	More complex	More complex
Learning Outcome			



Rubric: Humanities 8

Content Goal: <u>Perspective</u>				
Student friendly: 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 understand perspective with support	• I have a limited understanding of perspective	• I have an adequate understanding of perspectives	• I have a proficient understanding of perspective	• I have a sophisticated understanding of perspective

One point rubric

	Standard
goal	

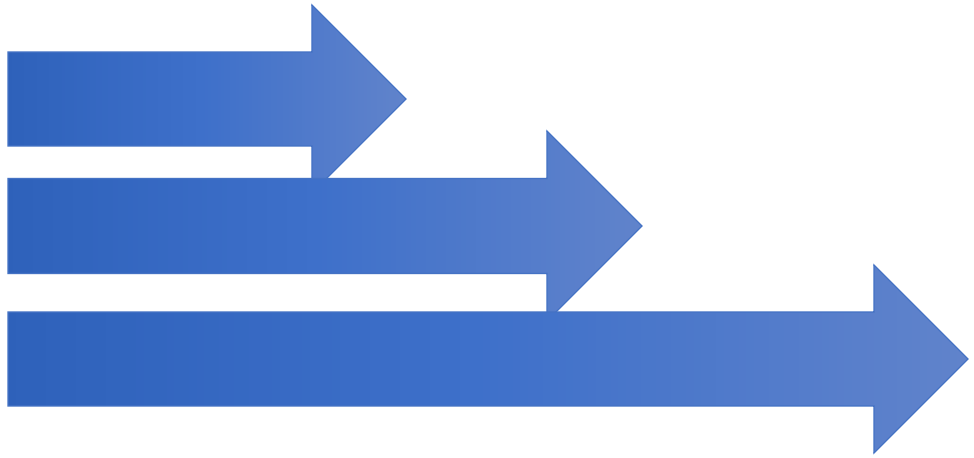
One Point Rubric: Humanities 8

Our Unit Questions How does **conflict** impact individuals and community? How do **stories** help us to **connect** and relate to our self, others and the world? What role does history, culture and society play in constructing and preserving text?		
I need support	**My goals for this unit**	**I need challenge**
	• I know and can use reading strategies • I know how context shapes how we use language • I can determine the causes (reasons for) that influences (create) a decision, action or event • I can determine the short and long term consequence (effects) of a decision, action or event • I can make ethical judgement about past events, decisions or actions • I can consider why we need to be careful about learning life lessons from the past	

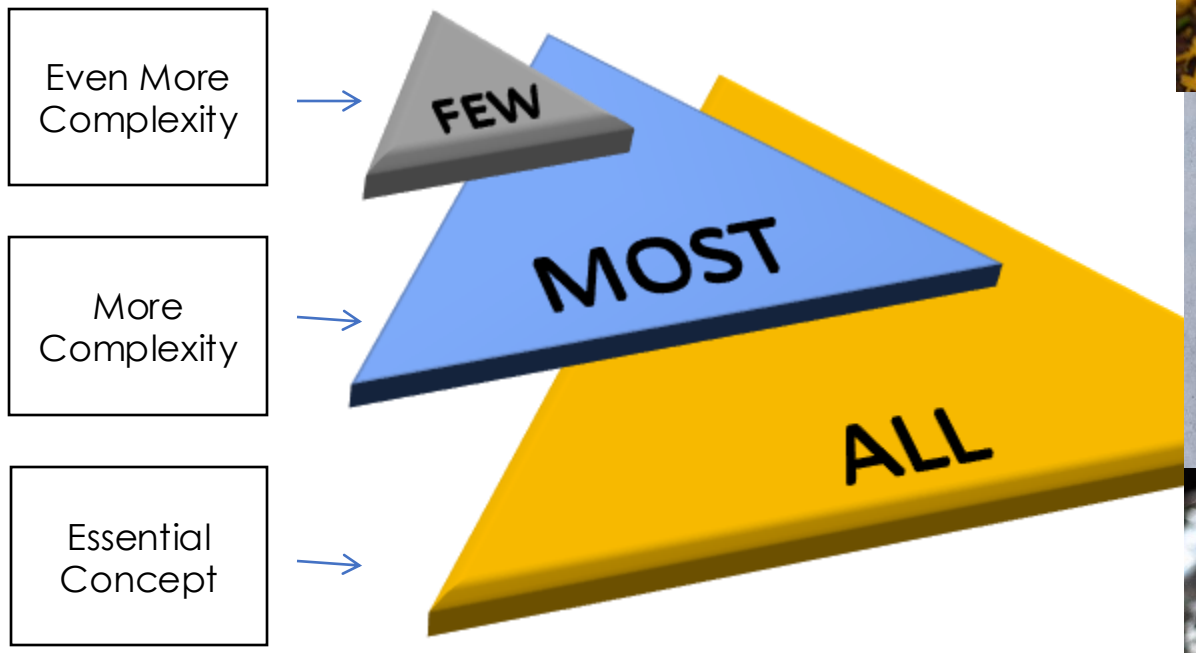
- **Great for student self assessment**
- **Difficult to use for formative & summative teacher assessment**
- **Does not communicate the variability and complexity within the goal**

Reductive vs vs. Additive

	Essential	More complex	More complex
Learning Outcome			



The Planning Pyramid: Differentiated Curriculum



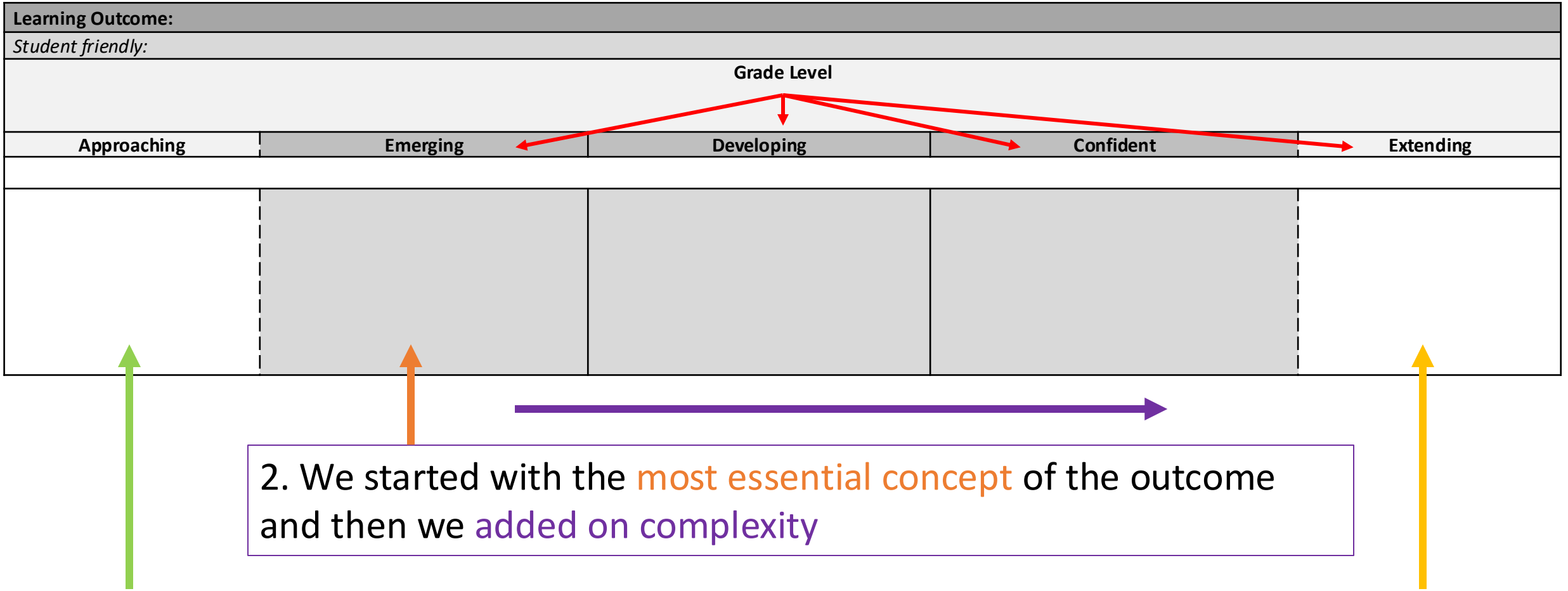
Start from access, build on challenge

Additive Learning Continuum: Humanities 8

Content Goal: <u>Perspective</u>				
Student friendly: 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 / Essential**	**Developing**	**Confident**	**Extending**
→				
	I can describe different perspectives of places, issues and events	I can describe how different perspectives change over time	I can identify and compare the perspectives of different values, worldviews and beliefs	

Our Co-Planning Journey: Learning Continuums

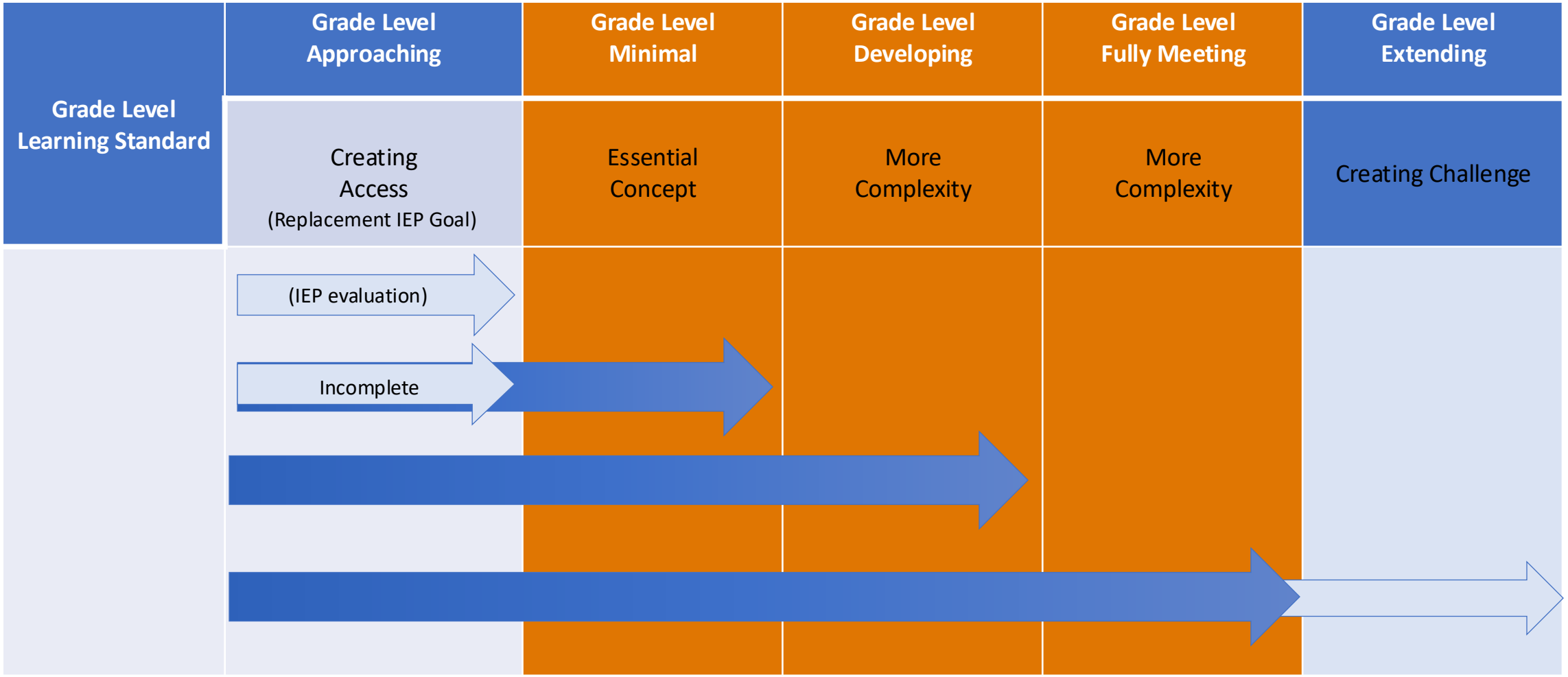
1. Using the elaborations for each learning outcome, we constructed a grade-level scaffold in *student friendly language*



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

An Additive Continuum of Proficiency



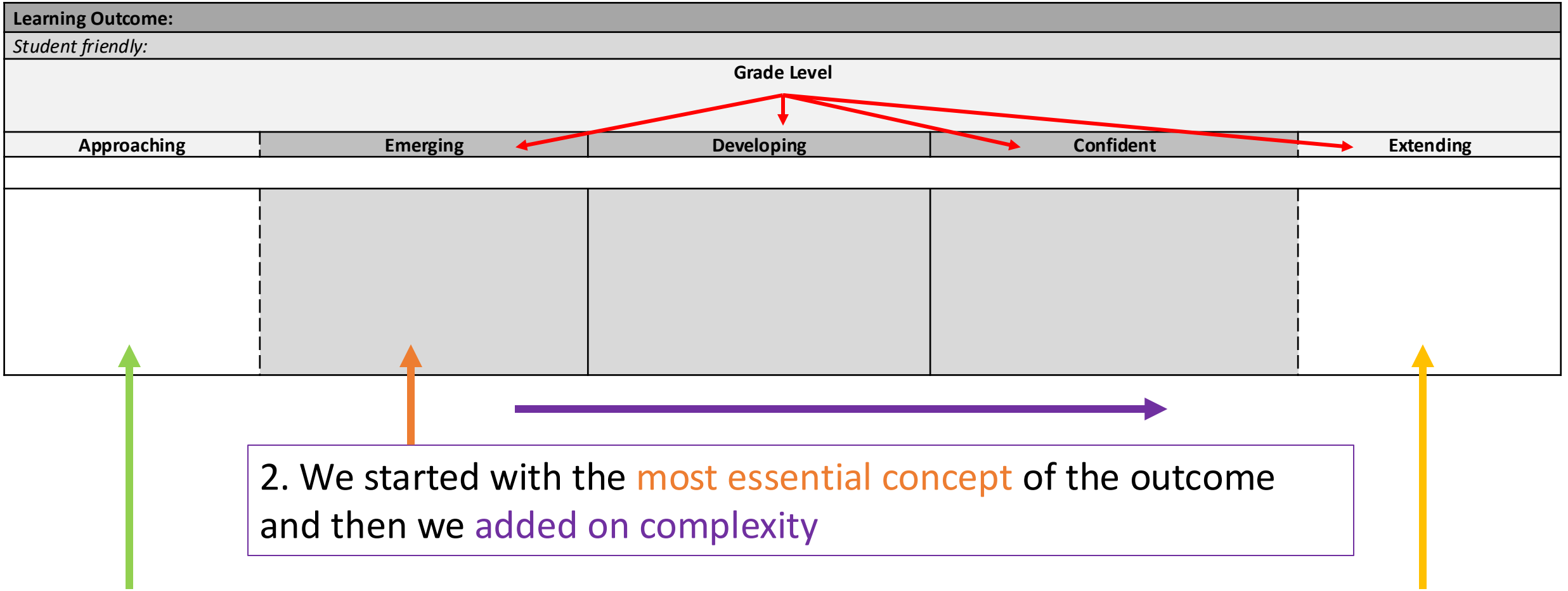
Shelley Moore, 2023

Additive Learning Continuum: Humanities 8

Content Goal: Perspective				
Student friendly: 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 / Essential**	**Developing**	**Confident**	**Extending**
→				
I can describe a different point of view in an event that happens in my life or community	I can describe different perspectives of places, issues and events	I can describe how different perspectives change over time	I can identify and compare the perspectives of different values, worldviews and beliefs	I can describe how cultures and beliefs influence perspectives in different places and times

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

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

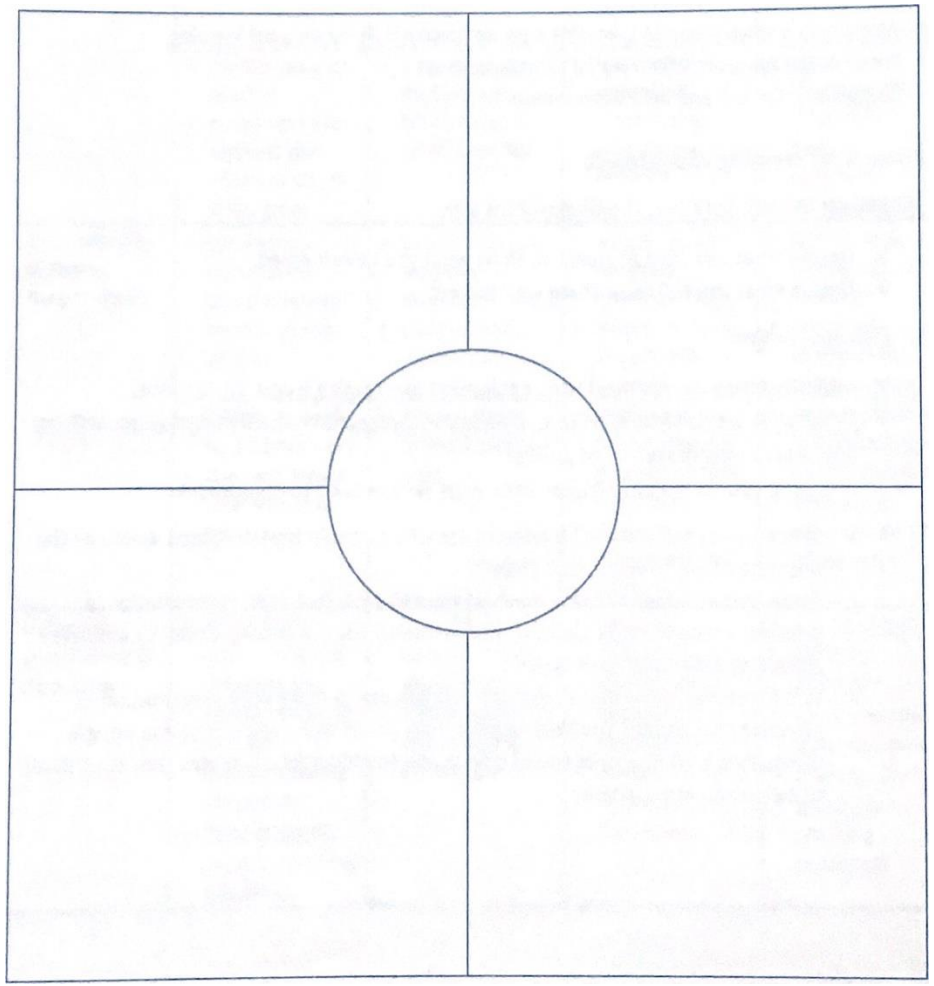
Learning Continuum: Math Content

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

Performance Task 1: Listen to the Voices



- Choose 4 new media texts from the options provided
- Considering the various artists, you watched and listened to, what are the different messages being shared?
- What connections can you make between them?
- How do the messages connect with First Peoples languages, cultures and traditions?
- How are these artists using their voices to share stories of who they are?
- Why might hip hop or spoken word be an effective way to talk about issues affecting First Peoples?
- Record your notes on the placemat

New media text options

- JB The First Lady performs at the Pipeline Resistance Café for Unist'ot'en Camp https://www.youtube.com/watch?v=UEAyDes1Llw
- JB The First Lady Still Here https://www.youtube.com/watch?v=wGTqXZrH374

- Andrew Dexel https://www.beatnation.org/andrew-dexel.html
- Sonny Assu http://nationtalk.ca/story/a-radical-mixing-by-sonny-assu-at-canada-gallery
- Supaman Why https://www.youtube.com/watch?v=OiVU-W9VT7Q

- Winona Linn Knock Off Native https://www.youtube.com/watch?v=i_zFOsd_pqA
- Zaccheus Jackson: Invicta https://www.youtube.com/watch?v=KW2EJHZo1a8
- Zaccheus Jackson: Of Wings https://www.youtube.com/watch?v=jKVkOmxdwxQ

- N'we Jinan Artist "Home to Me" https://www.youtube.com/watch?v=EgaYz8YWsO8
- N'we Jinan Artist "The Highway" https://www.youtube.com/watch?v=hG_9d260YeI
- N'we Jinan Artist "Hide and Seek" https://www.youtube.com/watch?v=ZV9AUQoqfAc

Performance Task 2: Social Commentary

- Create a digital multimedia commentary which reflects your understanding of Indigenous issues in the past, present and future
- You can directly respond to the artists or to the issues they are highlighting.
- Consider the perspective from which you are viewing the texts and respond to the text personally, creatively, and/or critically

EFP 11 Content Goal: new media functions, including community building and advocacy				
Student friendly: I know new media functions, including community building and advocacy				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
I know what new media is and examples	I know the role of new media in modern communication I know how new media is used to build community	I know how new media is used for advocacy and social change efforts I know the importance of consent and credibility when using new media to build community	I know the importance of responsible digital citizenship in new media	I know how bias in new media can impact community, advocacy, and social justice efforts

EFP 11 Curricular Competency Goal: apply appropriate strategies in a variety of contexts to guide inquiry, extend thinking, and comprehend texts				
Student friendly: I can apply appropriate strategies in a variety of contexts to guide inquiry, extend thinking, and comprehend texts				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
I can engage with text that is familiar or interesting to me and use my prior knowledge to try to understand	I can use different strategies to help me understand text by following a model	I can use different strategies to help me understand	I can use different strategies to help me extend my thinking and guide inquiry	I can choose effective strategies to use based on context

EFP 11 Curricular Competency Goal: respond to text in personal, creative, and critical ways				
Student friendly: I can respond to text in personal, creative, and critical ways				
Approaching	**Emerging**	**Developing**	**Confident**	**Extending**
I can understand a text and respond	I can connect to and respond to texts personally	I can respond to texts creatively	I can respond to texts critically	I can respond to diverse texts in ways that integrate personal connections, critical thought and creative performance

Name:	Date:	Unit Topic: Bio 20
Unit Guiding Questions		
I still need support	**Curricular Standards**	**I need some challenge**
	20-20–A1.1k I can explain the flow of energy through a biosphere	
	20–A1.2k I can explain how energy in a biosphere can be balance between both photosynthetic and chemosynthetic activities and cellular respiratory activities	
	20–A1.3k I can explain the structure of ecosystem trophic levels, using models such as food chains and food webs	
	20–A1.4s I can work collaboratively and communicate by presenting findings, so it makes sense to others	
	20–A1.1sts I can analyze evidence and provide explanations based upon scientific theories and concepts though scientific investigation	

Course: Bio 20	Student: H

General Learning Outcome: 20-A1.4s I can work collaboratively and communicate my findings by presenting so that it makes sense to others

Student Evidence

RESPONSE 1 - NAME: **H**

I agree with the question. I believe that rising Carbon Dioxide will benefit plants. Photosynthesis relies on energy, water and carbon dioxide. Carbon Dioxide being one of the most important. Therefore if there was more Carbon Dioxide in the world, then it could increase the growth of plants. It would also increase the time. The plants could grow faster.

Specific Learning Outcome:

Modeling Responses

20–A1.4s I can work **collaboratively** & **communicate** my findings by:

- presenting my findings so it makes sense to others (modes representation)

Approaching	Emerging	Developing	Confident	Extending
I know my assigned role and I complete the tasks assigned to my role within a group.	I can choose my role cooperatively based on a given template, based on the needs of the assignment and group. I am able to communicate overall findings/results clearly.	I can understand what needs to be done and carry out the steps to complete and communicate the tasks, with the support of guiding questions, cues and prompts. I can show synthesis of multiple sources of information.	I can work effectively in my group to synthesize our results into a clear and concise presentation/report.	I can work effectively in my group to synthesize, using classwork and my personal background knowledge, and our results into a clear and concise presentation/report.

Course: Bio 20	Student: P

General Learning Outcome: 20-A1.4s I can work collaboratively and communicate my findings by presenting so that it makes sense to others

Student Evidence

RESPONSE 1 - NAME: P

I disagree that rising carbon dioxide levels can benefit plants and, in addition, other organisms. I say this because when CO_2 rises it can cause the warmth of the atmosphere, climate change. Climate change affects the conditions for the plants to grow and can cause damage to environments as plants can start dying. This can affect the whole dynamic of ecosystems as certain animals can't rely on the same resources for food. As well as certain plants, such as Poison Ivy, can have an increase in growth, but they can have negative health effects on humans that are allergic to them. https://environment.co/how-does-global-warming-affect-plants/#:~:text=Climate%20change%20causes%20warmer%20summer.flower%20earlier%20in%20the%20season.&text=As%20precipitation%20decreases%2C%20flowers%20may%20bloom%20later%20in%20the%20season.

Specific Learning Outcome:

Modeling Responses

20–A1.4s I can work **collaboratively** & **communicate** my findings by:
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Bio 20-1: Muscles Unit Test

Targeted Outcomes for this Task:

20-D4.2k - Students will know how muscles contract and that heat is generated in the muscles through contraction.

Approaching	Emerging	Developing	Confident	Extending
I know moving my muscles can make me warm.	I know that muscles can only contract and this produces heat. I know that muscles use actin and myosin to contract and this type of work requires ATP which releases heat.	I can explain a muscle cramp referring to how actin and myosin bind and identify the cause of the cramp.	I know the relationship between actin, the myosin and the tropomyosin	I understand the impact of various substances (i.e. poisons) and how they impact muscle contraction and function.

20- 4.3s I can **analyze** and **interpret** by:

- looking for patterns in my data to help me understand what is happening
- connecting my data to other scenarios and contexts
- coming up with some possible solutions or explanations for what is happening
- organizing and displaying my data in ways that make sense to me

Approaching	Emerging	Developing	Confident	Extending
I can make a logical decision when given choices, by using my background knowledge and observations.	I can identify patterns and trends in data and explain relationships among the variables.	I can interpret and connect my data to determine possible solutions or explanations for my investigation.	I can identify and evaluate potential applications of findings to different scenarios.	evaluate designs and prototypes in terms of function, reliability, safety, efficiency, use of materials and impact on the environment

20–4.4s I can **communicate** my findings by:

- using SI units and Sig Digs
    - presenting my findings so it makes sense to others (modes representation)

Approaching	Emerging	Developing	Confident	Extending
I/we don't give up when things get hard I/we can participate in a task without or without a group I/we share my thinking and ideas	I/we can understand what needs to be done, I know what the task is asking me/us to do I/we can communicate findings/results clearly I/we can use unit vocabulary when responding to tasks	I/we can choose my role based on the needs of the assignment and group I/we can follow the steps of a task I/we can use of multiple sources of information.	I can work to combine input and ideas from everyone in my group and create a clear presentation I/we can use multiple forms to present our findings (visual, oral, written)	I/we can connect our findings to multiple perspectives I/can ask follow up questions to understand the information

Task Question	Outcomes Targeted
Use these words to fill in the blanks in questions 1a-c below: contraction heat actin myosin warm/hot **1 a. I know that when I move my body I feels _____.**	**20-D4.2k** (approaching) **20- 4.3s** (approaching) **20–4.4s** (approaching)
1b. Muscles are made up of _____ and _____. **1c. The movement between actin and myosin is done through _____ movement only, and a by-product of this movement produces ATP and _____.**	**20-D4.2k** (emerging) **20- 4.3s** (approaching) **20–4.4s** (approaching)
2. After exercising heavily, athletes sometimes experience muscle cramps. Explain what is happening in the muscle when it is cramping ensuring you reference actin, myosin, and the specific cause of a cramp in your description.	**20-D4.2k** (developing) **20–4.4s** (approaching/ emerging)

Grade 11 Biology Quiz

Bio 20-1: Muscles Unit Test

Targeted Outcomes for this Task:

20-D4.2k - Students will know how muscles contract and that heat is generated in the muscles through contraction.

Approaching	Emerging	Developing	Confident	Extending
I know moving my muscles can make me warm.	I know that muscles can only contract and this produces heat. I know that muscles use actin and myosin to contract and this type of work requires ATP which releases heat	I can explain a muscle cramp referring to how actin and myosin bind and identify the cause of the cramp.	I know the relationship between actin, the myosin and the tropomyosin	I understand the impact of various substances (i.e. poisons) and how they impact muscle contraction and function.

20- 4.3s I can **analyze** and **interpret** by:

- looking for patterns in my data to help me understand what is happening
- connecting my data to other scenarios and contexts
- coming up with some possible solutions or explanations for what is happening
- organizing and displaying my data in ways that make sense to me

Approaching	Emerging	Developing	Confident	Extending
I can make a logical decision when given choices, by using my background knowledge and observations.	I can identify patterns and trends in data and explain relationships among the variables.	I can interpret and connect my data to determine possible solutions or explanations for my investigation.	I can identify and evaluate potential applications of findings to different scenarios.	evaluate designs and prototypes in terms of function, reliability, safety, efficiency, use of materials and impact on the environment

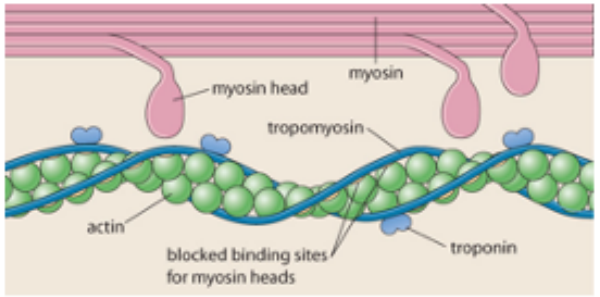
20–4.4s I can **communicate** my findings by:

- using SI units and Sig Digs
- presenting my findings so it makes sense to others (modes representation)

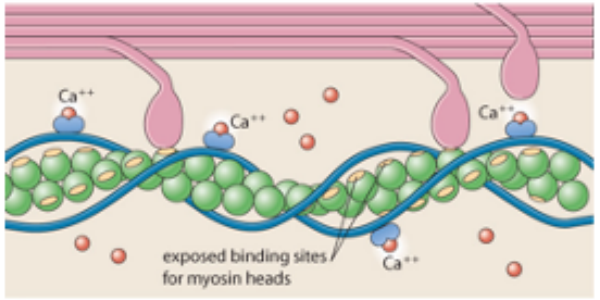
Approaching	Emerging	Developing	Confident	Extending
I/we don't give up when things get hard I/we can participate in a task without or without a group I/we share my thinking and ideas	I/we can understand what needs to be done, I know what the task is asking me/us to do I/we can communicate findings/results clearly I/we can use unit vocabulary when responding to tasks	I/we can choose my role based on the needs of the assignment and group I/we can follow the steps of a task I/we can use of multiple sources of information.	I can work to combine input and ideas from everyone in my group and create a clear presentation I/we can use multiple forms to present our findings (visual, oral, written)	I/we can connect our findings to multiple perspectives I/can ask follow up questions to understand the information

5. Use the following additional information to answer the next two questions.

Additional experiments using injections of radioactive Ca^{2+} show that the ions are stored within the sacs of the sarcoplasmic reticulum in resting muscle tissue. When the tissue is stimulated to contract with electrodes, the radioactive Ca^{2+} ions are found among the actin and myosin filaments as shown below.



The muscle is at rest.



The muscle is contracting.

5a. Refer to diagram of the muscle at rest above, and explain what effect a lack of tropomyosin would have in muscle tissue

5b. The diagram of the muscle contracting shows the role of calcium ions in repositioning tropomyosin. Where are these ions stored when the muscle is at rest? What causes them to move among the actin and myosin filaments?

20-D4.2K (confident)

20–4.4s (approaching/ emerging)

Grade 11 Biology Quiz

Bio 20-1: Muscles Unit Test

Targeted Outcomes for this Task:

20-D4.2k - Students will know how muscles contract and that heat is generated in the muscles through contraction.

Approaching	Emerging	Developing	Confident	Extending
I know moving my muscles can make me warm.	I know that muscles can only contract and this produces heat. I know that muscles use actin and myosin to contract and this type of work requires ATP which releases heat	I can explain a muscle cramp referring to how actin and myosin bind and identify the cause of the cramp.	I know the relationship between actin, the myosin and the tropomyosin	I understand the impact of various substances (i.e. poisons) and how they impact muscle contraction and function.

20- 4.3s I can **analyze** and **interpret** by:

- looking for patterns in my data to help me understand what is happening
- connecting my data to other scenarios and contexts
- coming up with some possible solutions or explanations for what is happening
- organizing and displaying my data in ways that make sense to me

Approaching	Emerging	Developing	Confident	Extending
I can make a logical decision when given choices, by using my background knowledge and observations.	I can identify patterns and trends in data and explain relationships among the variables.	I can interpret and connect my data to determine possible solutions or explanations for my investigation.	I can identify and evaluate potential applications of findings to different scenarios.	evaluate designs and prototypes in terms of function, reliability, safety, efficiency, use of materials and impact on the environment

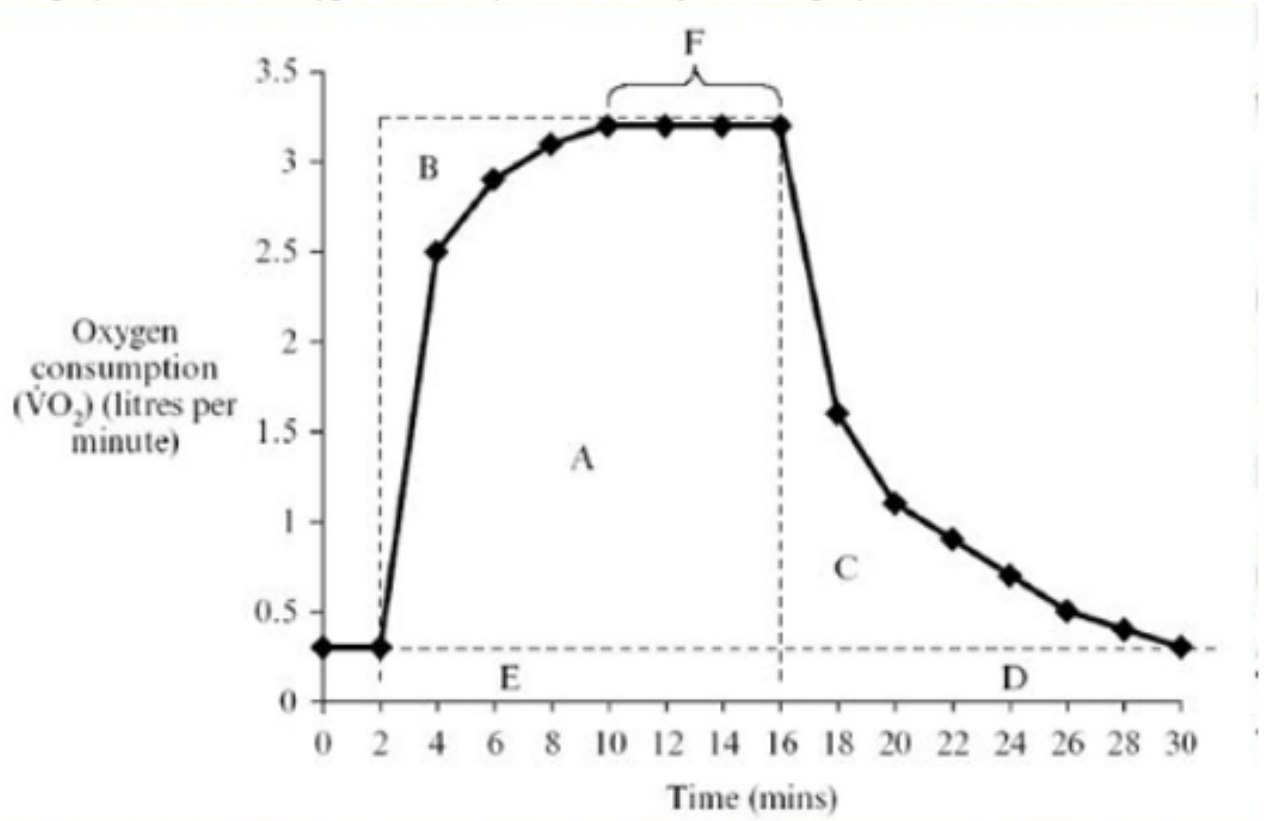
20–4.4s I can **communicate** my findings by:

- using SI units and Sig Digs
- presenting my findings so it makes sense to others (modes representation)

Approaching	Emerging	Developing	Confident	Extending
I/we don't give up when things get hard I/we can participate in a task without or without a group I/we share my thinking and ideas	I/we can understand what needs to be done, I know what the task is asking me/us to do I/we can communicate findings/results clearly I/we can use unit vocabulary when responding to tasks	I/we can choose my role based on the needs of the assignment and group I/we can follow the steps of a task I/we can use of multiple sources of information.	I can work to combine input and ideas from everyone in my group and create a clear presentation I/we can use multiple forms to present our findings (visual, oral, written)	I/we can connect our findings to multiple perspectives I/can ask follow up questions to understand the information

6. *Use the following information to answer the next two questions.*

The graph shows the oxygen consumption of a subject during a period of rest, exercise, and recovery.



5a.	Which letter (A-F) represents the oxygen deficit?	**20-D4.2k** (emerging)
b.	How long did the exercise last?	**20-D4.2k** (emerging)
c.	What is occurring during C?	**20- 4.3s** (emerging)

Grade 11 Biology Quiz

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- connecting my data to other scenarios and contexts
- coming up with some possible solutions or explanations for what is happening
- organizing and displaying my data in ways that make sense to me

Approaching	Emerging	Developing	Confident	Extending
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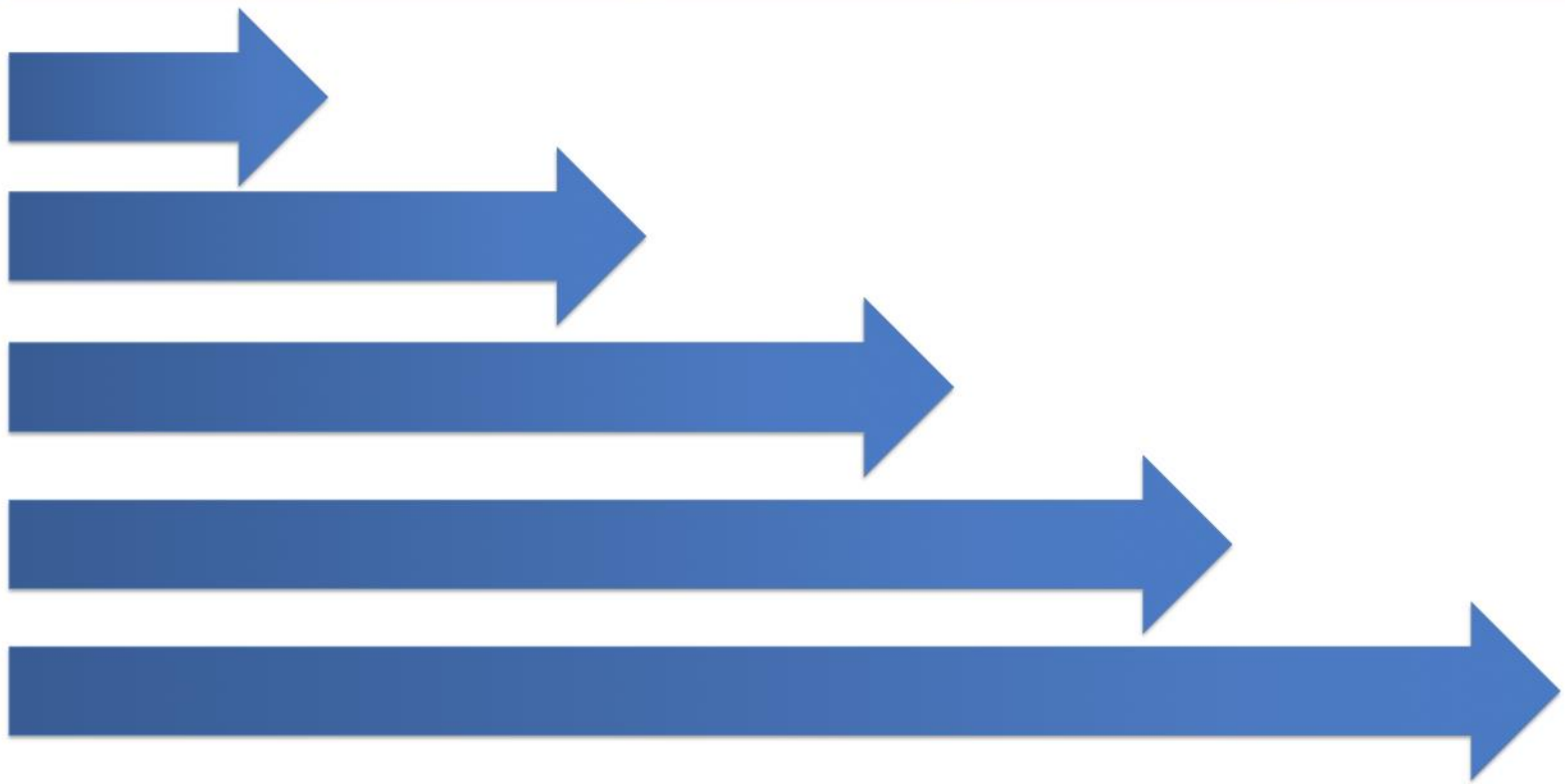
Class: Grade 6	Subject Area(s): Math	Planning Team: CRFI Team
Big Idea(s): Computational fluency and flexibility with numbers extend to operations with whole numbers and decimals.		**Unit Guiding Question(s): What can you do with an idea? What is the impact of an idea? What is the impact of an action? How can we use multiplication and divisions to show impact/ change the world?**
Vocabulary to know and use (content): numbers, facts, 100, factors, multiple, GCF, LCM,		**Vocabulary to know and use (skills & competencies):** estimate, strategies, solve problems, communicate my thinking, many ways, perspectives, word views, connections, Lig^{w}iɬdax^{w}, mathematical thinking, aware of others/place, interact, respectfully, thoughtfully, place
Unit Goals	Curricular Language	Student friendly language
Content Goal:	multiplication and division facts to 100(developing computational fluency)	**I know my** multiplication and division facts to 100
Content Goal:	factors and multiples — greatest common factor and least common multiple	**I know what factor, multiple, GCF, LCM are** **I know how to find factors and multiple** **I know how to find the GCF and LCM**
Curricular Competency Goal:	**Reasoning and analyzing:** Estimate reasonably	**I can estimate** **I can explain why it makes sense**
Curricular Competency Goal:	**Understanding and solving:** Apply multiple strategies to solve problems in both abstract and contextualized situations	**I can use many strategies to solve different kinds of problems**
Curricular Competency Goal:	**Communicating and representing:** Communicate mathematical thinking in many ways	I can communicate my thinking in math in many ways (concrete, abstract, pictorial)
Curricular Competency Goal:	**Connecting and reflecting:** Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts	I can relate what I am learning in math to local (Ligwitdax) worldviews and perspectives
Core Competency Goal: **Social Responsibility**	**I can be aware of others and my surroundings** **In familiar settings, I can interact with others and my surroundings respectfully.** **I can interact with others and the environment respectfully and thoughtfully**	**I am aware of who is around me** **I am interacting with those around me in respectful and thoughtful ways** **I am interacting with places around me in respectful and thoughtful ways**

Content Goal:				
Language Goal:				
Student friendly:				
Access	**Grade Level Proficiency**			**Challenge**
Approaching	**Essential**	**Developing**	**Confident**	**Extending**
→				

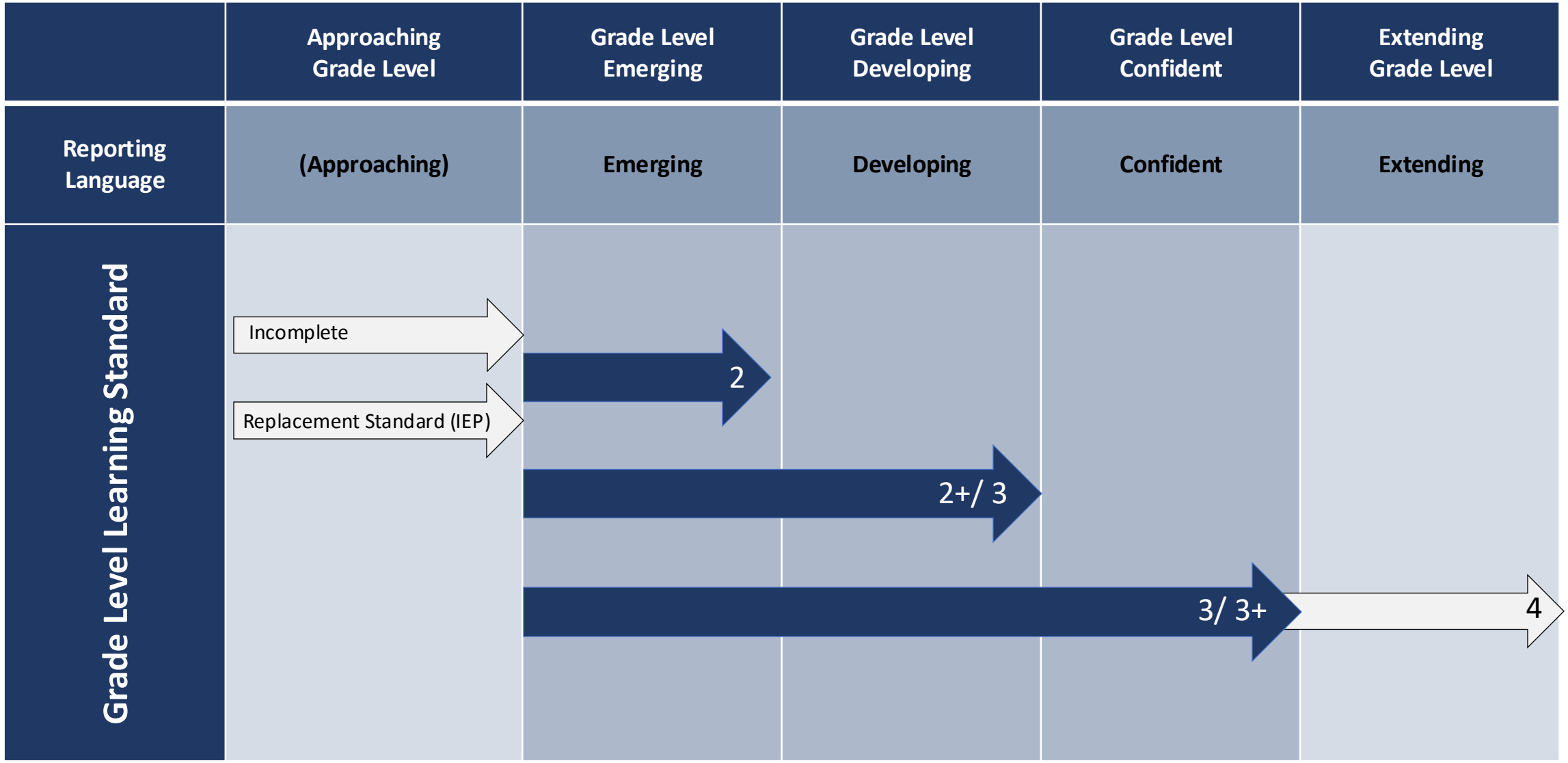
Scaffolded Curriculum: Point Continuum

	Access Point	Grade level indicators			Challenge Point
Grade Level Learning Standard	Approaching	Essential	Developing	Confident	Extending



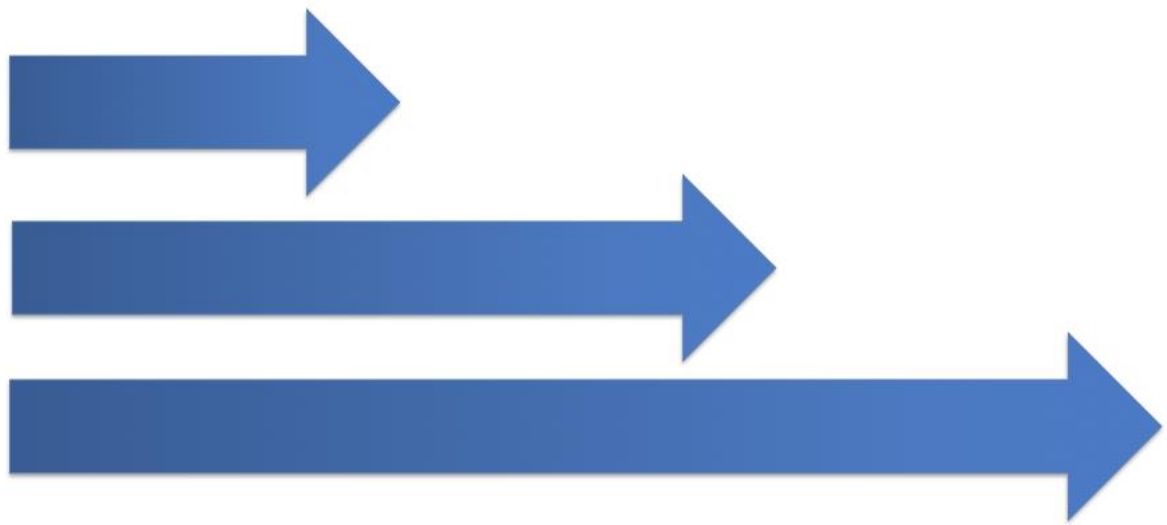
Moore, 2025

An Additive Continuum of Proficiency



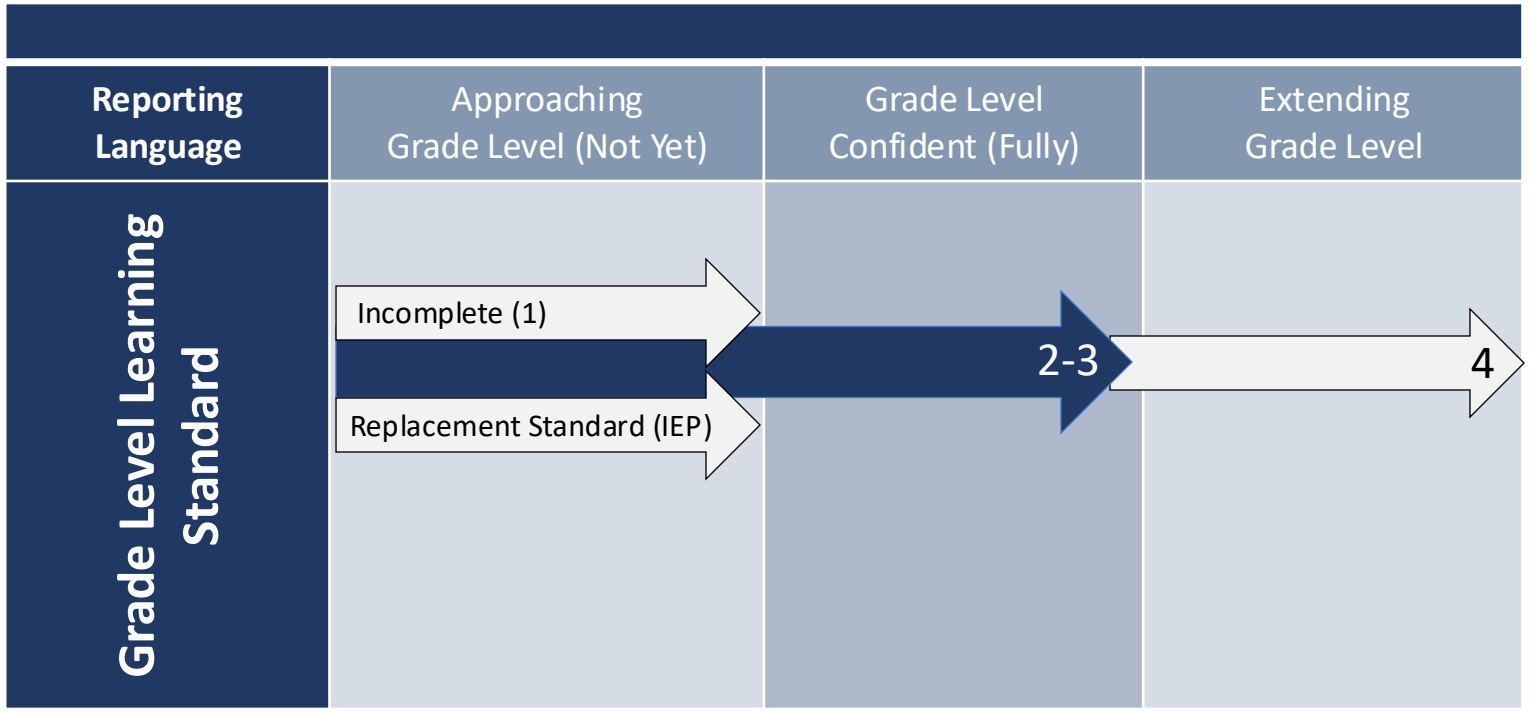
Scaffolded Curriculum: 3 Point Continuum

	Access Point	Grade level indicators	Challenge Point
Grade Level Learning Standard			



Moore, 2025

An Additive Continuum of Proficiency



S, Moore, 2024

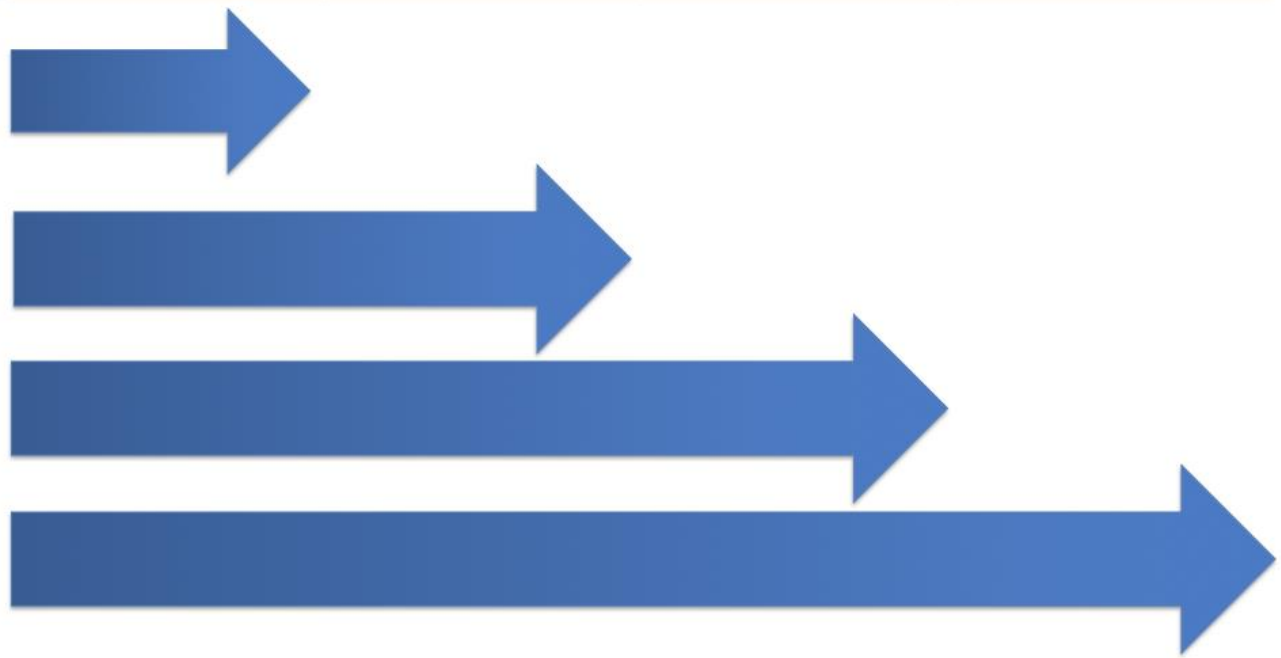
Backwards Design Using Arizona Science Curriculum

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

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

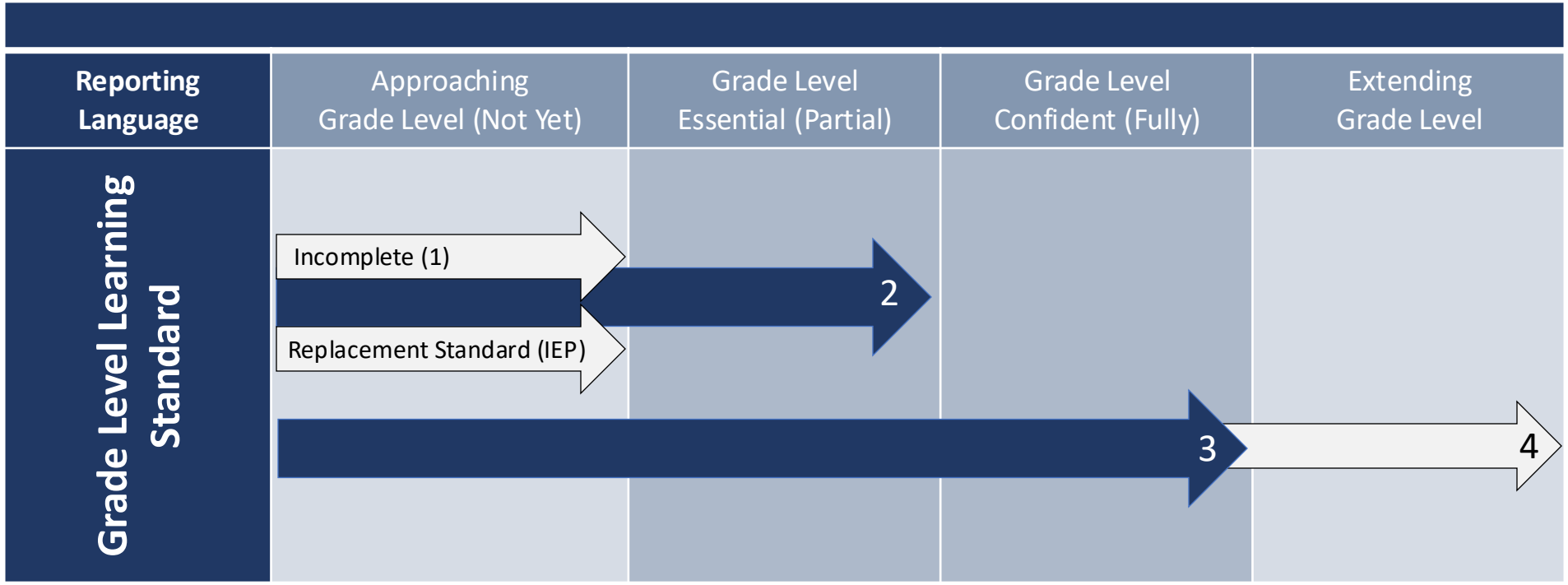
Scaffolded Curriculum: 4 Point Continuum

	Access Point	Grade level indicators		Challenge Point
Grade Level Learning Standard	Approaching	Essential	Confident	Extending



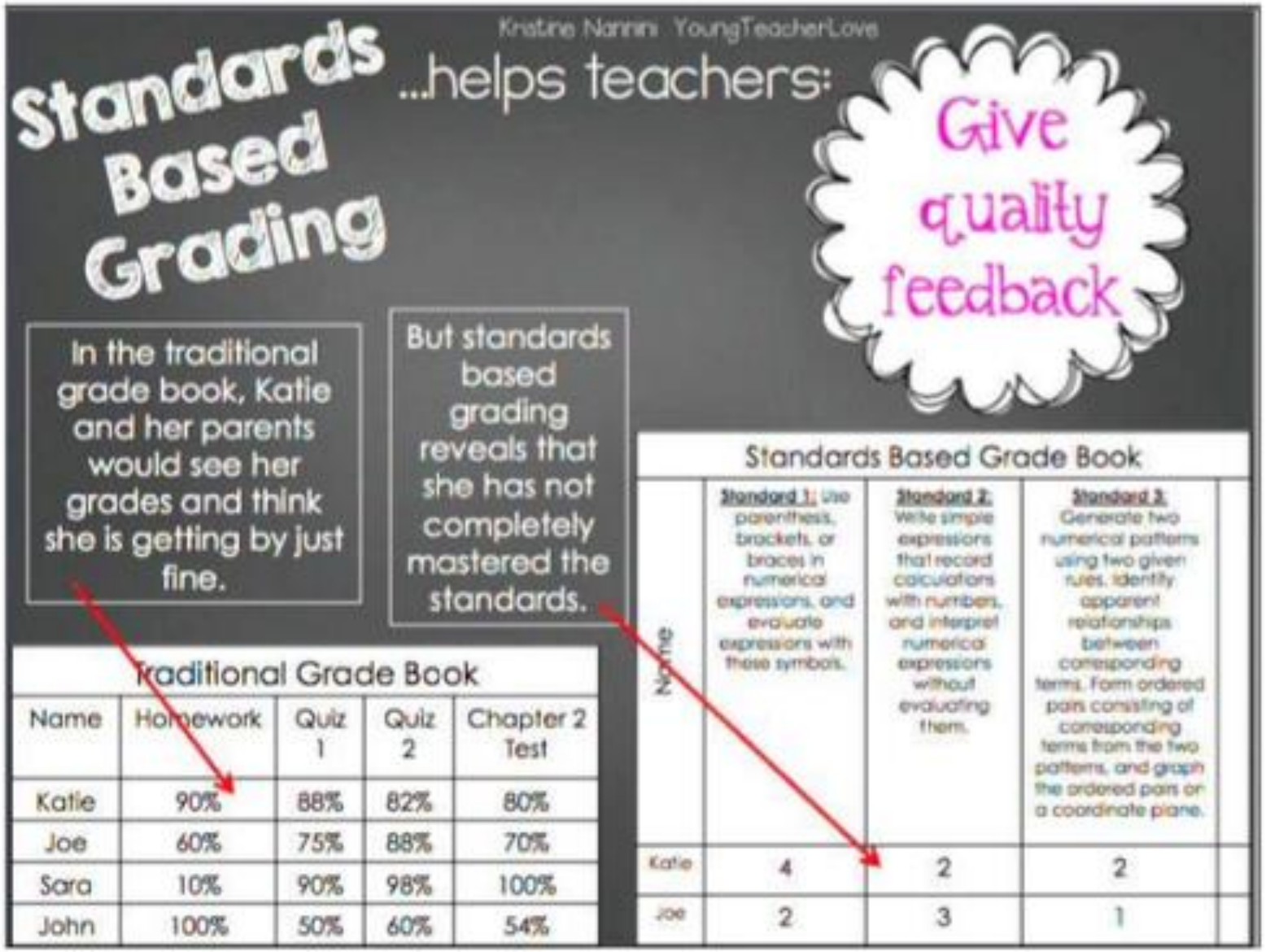
Moore, 2025

An Additive Continuum of Proficiency



S, Moore, 2024

1. Standards based vs. standardized curriculum



Standards Based Grade Book (NGSS																	
Learning Standard/ Performance Expectation													**Evaluation**				
													Total	**Out of**	**%**	**Letter Grade**	**4-Point**
Possible Evidence of Learning																	
Reporting Language	**Approaching/ Access Point**	**Emerging/ Essential**	**Developing**	**Extending**	**Approaching/ Access Point**	**Emerging/ Essential**	**Developing**	**Extending**	**Approaching/ Access Point**	**Emerging/ Essential**	**Developing**	**Extending**					
Evaluation	**IE/IEP**	**2.5**	**3**	**4**	**IE/IEP**	**2.5**	**3**	**4**	**IE/IEP**	**2.5**	**3**	**4**					
Student 1 (IEP)																	
Student 2																	
Student 3																	
Student 4																	
Student 5																	
Student 6																	

Life Science 11 Standards Based Gradebook

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1		Content Goals					Curriicular Competency Goals															Evaluation				
2	Learning Standards	speciation					experience and interpret the local environment					seek and analyze patterns, trends, and connections in data, including describing relationships between					construct, analyze, and interpret graphs, models, and/or diagrams									
3	Possible Evidence of Learning																									
4	Reporting Language	Approaching/ Access Point	Emerging/ Essential	Developing	Confident	Extending	Approaching/ Access Point	Emerging/ Essential	Developing	Confident	Extending	Approaching/ Access Point	Emerging/ Essential	Developing	Confident	Extending	Approaching/ Access Point	Emerging/ Essential	Developing	Confident	Extending	Total	Out of	%	Letteer Grade	4 - Point
5	4- Point	IE/IEP	2	3	3.5	4	IE/IEP	2	3	3.5	4	IE/IEP	2	3	3.5	4	IE/IEP	2	3	3.5	4	16	16			
6	Student 1 (IEP - Replacement Goals)	x					x					x					x					4	4		A (IEP)	4 (IEP)
7	Student 2	x	x				x	x				x	x				x	x				8	16	50	C-	2
8	Student 3	x	x	x			x	x	x			x	x				x	x	x			12	16	75	B	3
9	Student 4	x	x	x	x		x	x	x	x	x	x	x	x	x		x	x	x			14	16	88	A	3+
10	Student 5		x	x	x	x	x	x	x			x	x	x					x	x		IE	16	IE	IE	IE

Backwards Design Planning

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

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

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

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

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

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

Standards Based Grade Book (NGSS)																		
Learning Standard/ Performance Expectation	**5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen**												**Evaluation**					
	Science and Engineering Practices				**Disciplinary Core Ideas**				**Crosscutting Concepts**									
Possible Evidence of Learning																		
Reporting Language	**Approaching/ Access Point**	**Emerging/ Essential**	**Developing**	**Extending**	**Approaching/ Access Point**	**Emerging/ Essential**	**Developing**	**Extending**	**Approaching/ Access Point**	**Emerging/ Essential**	**Developing**	**Extending**	**Total**	**Out of**	**%**	**Letter Grade**	**4-Point**	**Continuum**
Evaluation	**IE/IEP**	**2.5**	**3**	**4**	**IE/IEP**	**2.5**	**3**	**4**	**IE/IEP**	**2.5**	**3**	**4**		**12**				
Student 1 (IEP)	•				•				•	•			3	**3***	100%	A*	4*	A/EM*
Student 2	•	•			•	•			•	•			7.5	**12**	63%	D	2.5	EM
Student 3	•	•	•	•	•	•	•	•	•	•	•		11	**12**	92%	A-	3.67	C/EX
Student 4			•	•	•	•	•		•	•			IE	**12**				
Student 5	•	•	•	•	•	•							IE	**12**				
Student 6	•	•	•		•	•	•	•	•	•	•	•	11	**12**	92%	A-	3.67	C/EX

Final Reflections

What is one useful idea?

What is one thing you want to try?

What is a question that you have?

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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