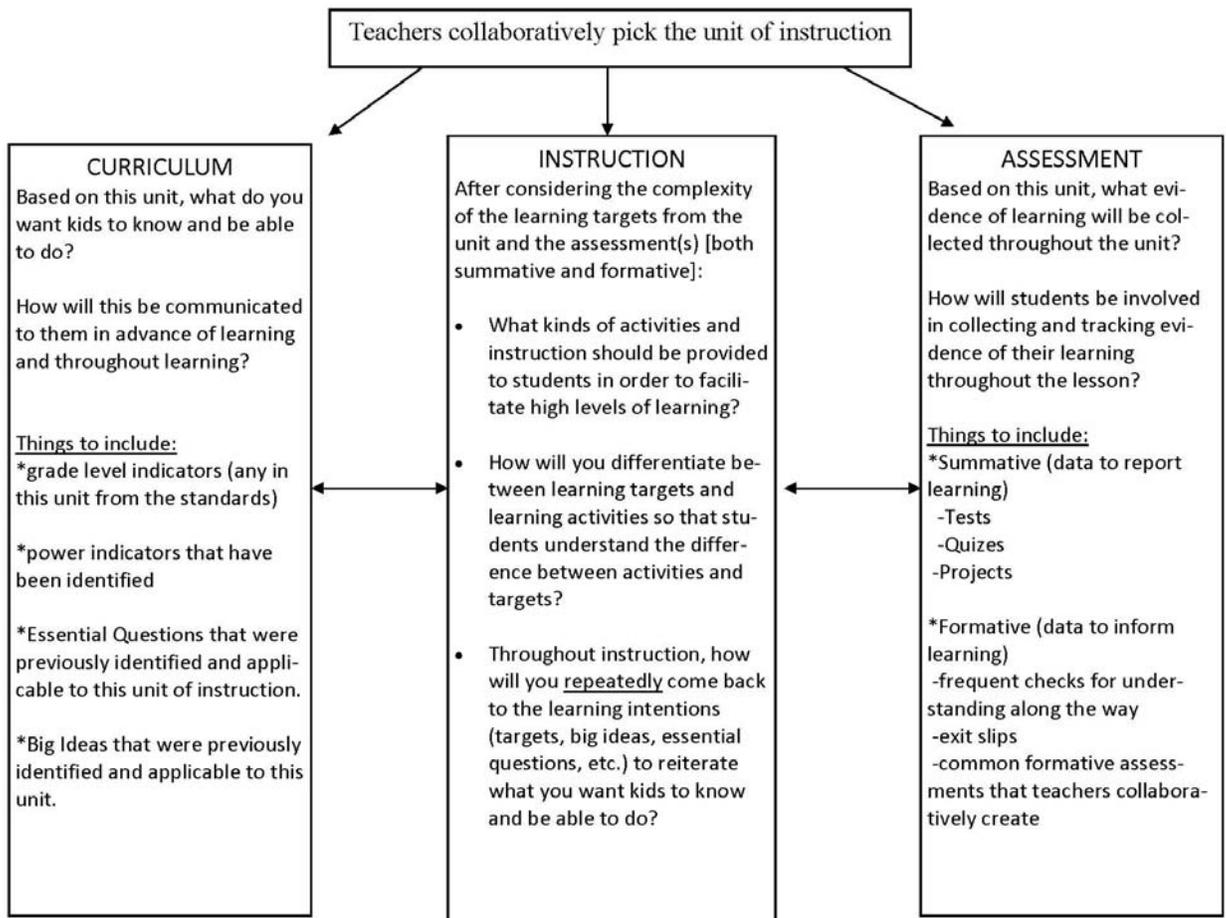


The purpose of the lesson planning framework is to act as a guide for Olmsted Falls Educators as they collaboratively plan units of instruction. The framework attempts to incorporate best practices from the research and couple these with the professional development concepts that Olmsted Falls Educators have taken part in.

Academic content standards and the learning targets that comprise the standards come to life for teachers and students when they are incorporated into a unit of instruction. Teachers work in teams to ensure the learning intentions are the same in corresponding grade levels and subject areas. Teaching the same targets creates the opportunity to collaboratively design common formative assessments that can be collaboratively discussed throughout the instructional unit with fellow teachers. In addition, it allows teachers to design reliable and valid summative assessments that can be used to measure learning at the end of the instructional unit and use the results for future planning.

Ultimately the unit design framework should be used by teachers for the purpose of instructional alignment. The learning targets should be clear to students before and during instruction and they should be aligned with the assessments students will experience. The last step in the alignment process occurs when the learning targets and assessments are consciously aligned with the instruction and classroom activities.

Unit Planning Graphic Linking Prof. Dev. Concepts in Olmsted Falls City Schools



Graphic created by Jim Lloyd and used by Olmsted Falls City Schools' Teachers

Subject: Science-6

Unit: Environmental Changes

## Part I: Clarity of Learning Targets

**What are the grade level indicators that go with this unit? Place a star next to the grade level indicators that are Power Indicators. Are the indicators in student friendly language? Place the level of Bloom's Taxonomy next to each Power Indicator.**

Explain how the number of organisms an ecosystem can support depends on adequate biotic (living) resources (e.g., plants, animals) and abiotic (non-living) resources (e.g., light, water and soil).

**#1 Student-Friendly: I can explain how biotic and abiotic resources determine the number of organisms in an ecosystem. (Procedural, Understand)**

"Branches of Learning":

- Biotic
- Abiotic
- Limiting factors
- Organism
- Ecosystem

Summarize the ways that natural occurrences and human activity affect the transfer of energy in Earth's ecosystems (e.g., fire, hurricanes, roads and oil spills).

**#2 Student-Friendly: I can summarize the ways that natural occurrences (fire, hurricanes, etc.) and human activity (deforestation, oil spills, etc.) affect the transfer of energy in ecosystems. (Procedural, Understand)**

**#3 Student-Friendly: I can explain how energy is transferred from one organism to another. (Conceptual, Understand)**

"Branches of Learning":

- Natural occurrence
- Human activities
- Transfer of energy

Explain that some environmental changes occur slowly while others occur rapidly (e.g., forest and pond succession, fires and decomposition).

**#4 Student-Friendly: I can explain that some environmental changes occur slowly, while others occur rapidly (fires, decomposition, and succession.) (Conceptual, Understand)**

"Branches of Learning":

- Decomposition
- Primary succession
- Secondary Succession
- Climax community

Explain the biogeochemical cycles, which move materials between the lithosphere (land), hydrosphere (water) and atmosphere (air).

**#5 Student-Friendly: I can explain biogeochemical cycles. (Conceptual, Understand)**

"Branches of Learning":

- Biogeochemical cycles
- Lithosphere
- Hydrosphere
- Atmosphere
- Oxygen cycle
- Carbon cycle
- Nitrogen cycle

**What are the Big Ideas that go with this unit?**

1. Living and non-living resources determine the number of organisms and ecosystem can support.
2. Human and/or natural activities change the environment and affect the transfer of energy.

**What are the Essential Questions that go with this unit?**

1. How do living and non-living resources determine the number of organisms an ecosystem can support?
2. How do human activities and natural resources change the environment and affect the transfer of energy?

**What strategies will we use in order to make learning targets clearer for all students, before, during and after instruction? How will you communicate the learning indicators to students?**

- Learning targets posted in the classroom – discussed with students before, during, after lessons
- Leaves of learning – each branch states a key term, students show 'evidence' of their learning on a leaf
- Big idea or essential question discussed throughout the unit – learning targets are connected to Big Ideas/Essential Questions

Part II: Feedback and Assessments (Formative and Summative)

How will we provide students with feedback throughout the unit?

**What formative assessments will we use? (Non-graded assignments that check for understanding and provide feedback to the students) Incorporate the 7 Strategies of Assessment for Learning here.**

- The students will complete entrance/exit slips or journal entries prior to each quiz to show evidence of the learning targets.
- The teacher will use strong student examples and will provide feedback on the entrance/exit slips or journal entries – teacher lists criteria; students evaluate exit/entrance slips and identify one correct part of the answer (star), one incorrect part of the answer (stair), and one idea that needs to be added (stair). Students then add to/correct their answer.
- The students will analyze the results of their summative assessments (correcting mistakes ½ sheet).
- Formative section assessments in textbook - section 1 ½ sheet (pg. 10)
- Evaluation of Biome project – The students will rate themselves and their group members on how well they participated in their group work for the Biome project.

**How will students be involved with keeping track of their own learning progress (note—this is different than tracking points for a grade)?**

- The students will keep their entrance/exit slips or journal responses and refer to them throughout the unit.

**What summative assessments will we use? (Graded, evaluative assessments)**

- **Quiz #1** – Learning target #1: ecosystems, habitats, communities, populations, organisms, biotic, abiotic, and limiting factors and learning target #4: Succession (chapter 1, section 4)
- **Quiz #2** – Learning targets #2 and #3: Food chains/webs, transfer of energy
- **Quiz #3** – Learning target #5: Cycle – O<sub>2</sub>, C, N and learning target #4: Biogeography
- **Biome project** - Poster/Presentation – Learning target #1, #2, #3

**Part III: Instruction and Student Activities**

**What instructional and student activities will we use for this unit? These activities should directly align with the indicators and assessments.**

**Background**

- Ecosystems
- Habitats
- Communities
- Populations
- Organisms

**Chapter 1, Section 1**

- Smart Board presentation
- Section 1 assessment

**Chapter 1, Section 4 (Succession)**Topics:

- Biotic
- Abiotic
- Limiting factors
- Succession (chapter 1, section 4)

Activities:

- Describe in 2 scenarios (island, destroyed forest) how life would reappear over time. Create a time-line showing what biotic factors would appear (first, second, third, etc.).
- Anticipation guide
- Worksheet – Pgs. 74 and 75

**Chapter 2**Topics:

- Food chains/webs
- Transfer of energy
- Cycle – O<sub>2</sub>, C, N
- Biogeography
- Biomes

Activities – Chapter 2, Section 1:

- Each group is given a scenario – the groups explain how the natural occurrence or human activity affects the transfer of energy in ecosystems/habitats.
  1. Mom plants a garden
  2. Lighting strikes create forest fire
  3. City builds park
  4. City builds park
  5. Home builder constructs apartment buildings
  6. Farmer plants corn
  7. Lumber company clears land of all trees
  8. Hurricane wipes out southern tip of Florida

- Learning chains (formative)
- Energy pyramid
- Food chains and webs united streaming video
- 2-column notes
- Website – create a food web (extra-credit)

Activities – Chapter 2, Section 2:

- Cycle cartoon
- Carbon and nitrogen cycle worksheets
- Pg. 52 – Nitrogen cycle roles

Activities – Chapter 2, Section 3:

- Section 3 assessment – Pg. 57

Activities – Chapter 2, Section 4 and 5 (Biomes):

- Biome Project (posters)

Notes:

Biotic, Abiotic	Ecosystems	Food Chains/webs, transfer of energy, succession
Limiting factors	Habitats	
	Communities	
	Population	
	Organisms	

Literacy Strategies:

- Previewing the text
- Anticipation guide
- KWL chart

Heading:

**Learning Target: I can explain how biotic and abiotic resources determine the number of organisms in an ecosystem.**

Explanation: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Correct:	Add:  1.  2.
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Addition(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Correct:	Add:  1.  2.
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## Evaluation of Biome Project

Heading:

Directions: Using the scale below, rate yourself and each group member. Then, explain how you could improve the next time.

**3 = Always    2 = Mostly    1 = Rarely**

	Self	Peer #1 Name	Peer #2 Name	Peer #3 Name	How could <u>you</u> improve the next time?
Group Goals:		_____	_____	_____	
1. Actively listened to the ideas of the group					
2. Contributed to the group research and final product					
3. Respected other opinions and compromised if necessary					
4. Clarified information with group members before asking the teacher					
5. Active member of the group; was here everyday to work with the group					

**\*If there is any additional information you think I need to know, please write it on the back of this paper.**