


Storyline Unit Design

Understanding by Design (UbD) Template*

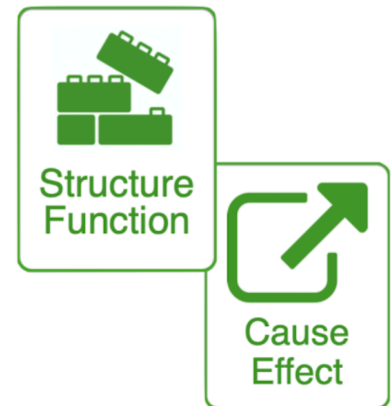
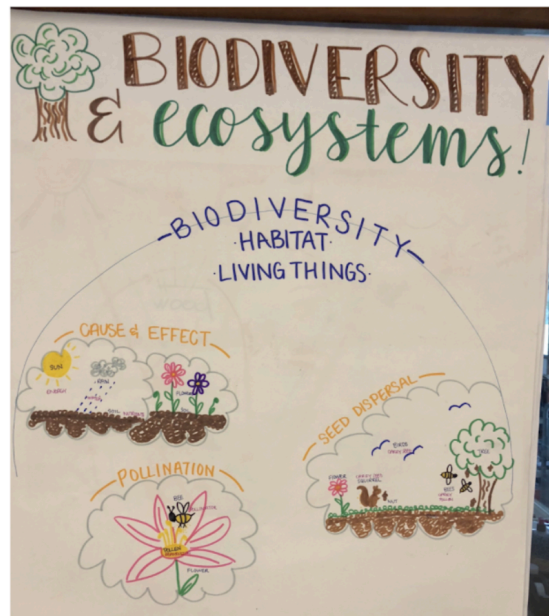
Unit	EP 2nd Grade	Course(s)	
Designed by		Time Frame	
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Anchor Model

Biodiversity and Ecosystems



Grade 2



Stage 1: Desired Results

Performance Expectations:

2-LS2-1: Environmental Plant Needs

Plan and conduct an investigation to determine if plants need sunlight and water to grow. (Cause and Effect)

2-LS2-2: Seed Dispersal and Pollination

Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. (Structure and Function)

2-LS4-1: Habitats and Biodiversity

Make observations of plants and animals to compare the diversity of life in different habitats. (Patterns)

Anchoring Phenomenon

[Anchoring Phenomenon Worksheet](#)

How do ecosystems change with the seasons? <<<<

Enduring Understandings

Ecosystems are plants and animals working together.

A healthy ecosystem has lots of plants and animals.

Humans can impact the ecosystem.

Essential Questions

What is an ecosystem?

What does it mean for an ecosystem to be diverse?
Healthy?

What do plants need to survive?

How do animals help our ecosystems?

How does the structure of an animal/ plant help them
survive?

What impact do humans have on the ecosystem?

Stage 2: Assessments

2-LS2-1 - [Investigating Plant Needs](#)

2-LS2-2 - [Building a Bumblebee Replacement](#)

2-LS4-1 - [Measuring Diversity Change](#)

[Assessment Screening Slides](#)

Backward Design Elements

What new skills (practices) will
students need to learn?

What thinking concepts will
students need to learn?

What science concepts will
students need to learn?

2-LS2-1: Environmental Plant Needs

Plan and conduct an investigation to determine if plants need sunlight and water to grow. (Cause and Effect)

<ul style="list-style-type: none"> Planning and carrying out investigations Recording observations Constructing explanations Engaging in argument from evidence. 	<ul style="list-style-type: none"> Cause and effect (making connections) Observation Recording Notes/ Use of graphic organizers Patterns 	<ul style="list-style-type: none"> What plants need to grow- soil, sun, water? The rate of growth can vary depending on testing conditions How do plants form from seeds? How do new trees and plants grow?
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What new skills (practices) will students need to learn?	What thinking concepts will students need to learn?	What science concepts will students need to learn?
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2-LS2-2: Seed Dispersal and Pollination

Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
(Structure and Function)

<ul style="list-style-type: none"> Constructing Explanations Developing and using models Problem-solving Engaging in argument from evidence 	<ul style="list-style-type: none"> System models <ul style="list-style-type: none"> What are the components of the ecosystem and how are they related? Structure / function <ul style="list-style-type: none"> What roles do these animal structures play in the functioning of the system? What is the structure of the animal and how does that help the plant? Cause & Effect 	<ul style="list-style-type: none"> What is the relationship between animals (bees) and pollination <ul style="list-style-type: none"> What would happen if bees did not pollinate? What structures are present in a bee? How seeds are dispersed in the ecosystem <ul style="list-style-type: none"> More than one way What role does pollination play in our ecosystem
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What new skills (practices) will students need to learn?	What thinking concepts will students need to learn?	What science concepts will students need to learn?
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2-LS4-1: Habitats and Biodiversity

Make observations of plants and animals to compare the diversity of life in different habitats. (Patterns)

<ul style="list-style-type: none"> Analyzing & Interpreting data Defining Problems Planning and carrying out investigations <ul style="list-style-type: none"> How do we engage with the natural world? 	<ul style="list-style-type: none"> Cause & Effect Systems and system models <ul style="list-style-type: none"> What is a healthy ecosystem How are all of the parts of the ecosystem related to each other? 	<ul style="list-style-type: none"> What does it mean for a habitat to be diverse? How can plants/ animals impact habitats?
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Stage 3: Learning Plan

 <p>Phenomenon or Problem</p>	 <p>Learning Performance - What will they do?</p> <p>The three dimensions woven together into a single learning performance.</p>	 <p>Why is this important?</p> <p>How does this activity help build understanding of the anchoring phenomenon?</p>	 <p>Learning Experience - How will they do it?</p> <p>Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.</p>
Microhabitats	Students will ask questions about the components of microhabitats and how they are related .	Microhabitats are part of a larger ecosystem - are there any similarities/ differences?	<p>Anticipatory Set: Collect a set of photos from our outdoor learning space.</p> <ul style="list-style-type: none"> What do you think we would find here? What do we need to observe things and collect data? What questions do you have about what you see in the photos? <p>Mini Lessons:</p> <ul style="list-style-type: none"> Systems Investigation - what is an investigation when looking for patterns? How to be in nature responsibly Collecting data
Formative Assessment - What information are you collecting to know that they met the target?		Simple observational data - are some, all, or few collecting data? What types of questions are students asking? Are the questions relevant?	
 <p>Phenomenon or Problem</p>	 <p>Learning Performance - What will they do?</p> <p>The three dimensions woven together into a single learning performance.</p>	 <p>Why is this important?</p> <p>How does this activity help build understanding of the anchoring phenomenon?</p>	 <p>Learning Experience - How will they do it?</p> <p>Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.</p>
Microhabitats	Students will investigate a variety of microhabitats looking for (in)/consistencies .	Do microhabitats change through the seasons ? (fall, winter, spring)	<ul style="list-style-type: none"> Collecting data Scale
Formative Assessment - What information are you collecting to know that they met the target?		Can students make an observation and record the data? Does the observation include a pattern?	
 <p>Phenomenon or Problem</p>	 <p>Learning Performance - What will they do?</p> <p>The three dimensions woven together into a single learning performance.</p>	 <p>Why is this important?</p> <p>How does this activity help build understanding of the anchoring phenomenon?</p>	 <p>Learning Experience - How will they do it?</p> <p>Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.</p>

Microhabitats	Students will collect information to identify components of the microhabitat - what are the systems of the microhabitat ?	What kind of biodiversity is present in a microhabitat?	<ul style="list-style-type: none"> • Mini lesson on what is a model • Developing models • Constructing explanations for what they see in microhabitats
Formative Assessment - What information are you collecting to know that they met the target?		Make a model of a microhabitat, students explain what is happening in the model.	
Microhabitat > Habitat > ecosystem <i>Small to big ecosystem</i>			
Formative Assessment - What information are you collecting to know that they met the target?			
Summative Assessment What information are you collecting to know that they met the target?			
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Materials / Resources		
<u>Vocabulary</u>		
<u>2-LS2-1</u> Plant growth Plant needs - Sunlight (light / dark) - Water (water / no water) Cause and Effect	<u>2-LS2-2</u> Plants Animals Seed dispersal Pollination Structure and Function	<u>2-LS4-1</u> Biodiversity Habitat (e.g. garden, forest, stream, lake) Living things (e.g. flowers, trees, fish, clams) Patterns
<u>Mini Lessons</u> Patterns Level 3 - Similarities and Differences Mini-Lesson		

Patterns Level 3 Thinking Slides - [Similarities and Differences Thinking Slides](#)
Causation Level 2 - [Testing Causes Mini-Lesson](#)
Causation Level 2 Thinking Slides - [Causation Level 2 - Testing Causes Thinking Slides](#)

Graphic Organizers

2-LS2-1 - [Environmental Plant Needs Graphic Organizer \(Student Version\)](#)
2-LS2-1 - [Environmental Plant Needs Graphic Organizer \(Teacher Version\)](#)
2-LS2-2 - [Seed Dispersal and Pollination Graphic Organizer \(Student Version\)](#)
2-LS2-2 - [Seed Dispersal and Pollination Graphic Organizer \(Teacher Version\)](#)
2-LS4-1 - [Comparing Habitat Biodiversity Graphic Organizer \(Student Version\)](#)
2-LS4-1 - [Comparing Habitat Biodiversity \(Teacher Version\)](#)
[Phenomena Observation Graphic Organizer](#)
[Questioning Graphic Organizer](#)
[Modeling Graphic Organizer](#)
[Planning an Investigation Organizer](#)
[Investigation Evidence Organizer](#)
[Engaging in Argumentation Organizer](#)

Differentiation / Modifications

*UbD Unit Planner is from Wiggins, Grant and McTighe, Jay. Understanding by Design Guide to Creating High-Quality Units. Alexandria, VA: Association for Supervision and Curriculum Development. 2011.