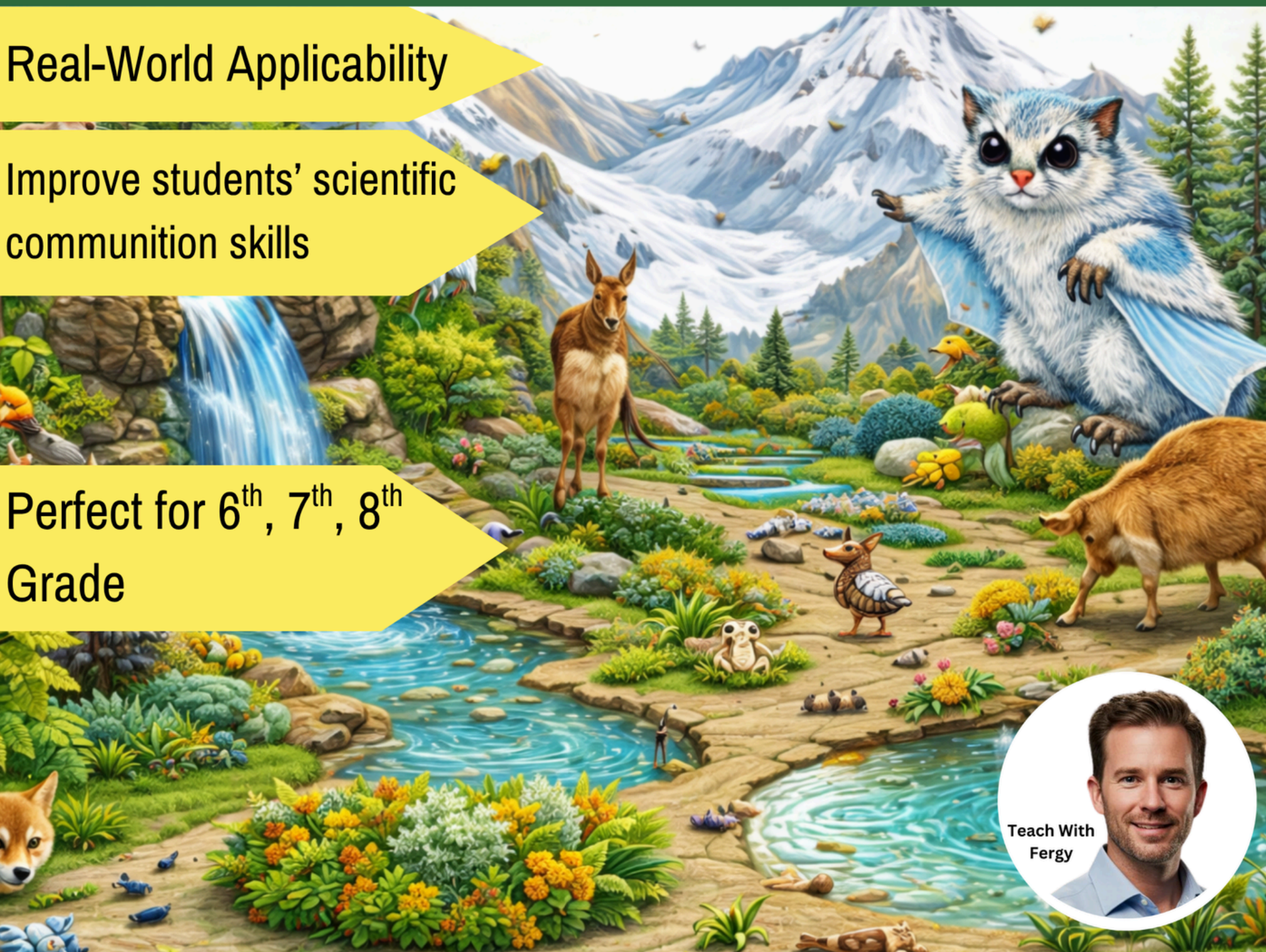


DESIGN A HABITAT & ECOSYSTEM PROJECT

Real-World Applicability

Improve students' scientific communication skills

Perfect for 6th, 7th, 8th Grade



Print-and-go
ECOLOGY Project
where students
learn about
habitats,
adaptations, and
ecosystems through
a hands-on activity.

SCROLL
to take a look inside!



HOW THIS PROJECT WILL HELP YOU



- Saves planning time with a fully structured, ready-to-use project
- Engages students through creativity, design, and real-world connections
- Builds deep understanding of ecosystems, adaptations, and energy flow
- Simplifies grading with clear rubrics, examples, and support materials

Design a Habitat & Ecosystem Project

Project Overview

In this project, you will become an ecologist and designer! You will create your own unique habitat, fill it with specially adapted organisms, and explain how everything works together as part of an ecosystem.

Learning Goals

By the end of this project, you will:

- Define and understand ecosystems
- Explain how organisms adapt to their environment
- Understand how energy flows through an ecosystem
- Show connections between organisms and their environment

Part 1: What is a Habitat?

Task: Write a clear definition of a habitat.

- What lives there
- What conditions are like

Part 2: Design Your Habitat

Using words, create and draw your habitat.

You must include at least:

- The name of your organism
- Climate (hot, cold, etc.)
- Physical features
- Abiotic factors
- Description (1-2 paragraphs)

Visual Requirement:

- Draw or digitally create your organism
- Label key features
- Include color

Part 3: Create 10 Organisms

You will design 10 organisms that live in your habitat. These can include:

- Producers (plants)
- Herbivores
- Carnivores
- Omnivores
- Decomposers

For EACH organism, you must include:

1. Name of organism
2. Drawing (with labeled features. Use your imagination and be creative.)
3. Key adaptations (at least 3)
 - Example: camouflage, sharp teeth, thick fur, deep roots
4. Description (1-2 paragraphs):
 - Where it lives in the habitat
 - What it eats
 - How it survives
 - How its adaptations help it

Example Organism

1. Name of Organism: Frostback Glider
2. Drawing
3. Key Adaptations

- Camouflaged fur that blends into snow and ice
- Gliding membranes to travel between icy cliffs without using much energy
- Thick insulating fur to survive extreme cold temperatures
- Sharp claws to grip slippery surfaces

4. Description

The Frostback Glider lives in a cold, mountainous habitat covered in snow and ice. It is most commonly found along steep cliffs and frozen forests, where strong winds and freezing temperatures make survival difficult. This organism stays high above the ground to avoid predators and uses tall icy trees and rock ledges as shelter.

The Frostback Glider is an omnivore. It eats small insects, frozen berries, and moss that grows on rocks. It survives by gliding from place to place instead of walking, which helps it save energy and avoid dangerous terrain. Its thick fur keeps it warm, while its white and blue coloring helps it blend into the snowy environment so predators cannot easily see it. Its sharp claws allow it to grip onto ice, and its large eyes help it see in low light during long winter nights.



Assessment Rubric

1. Habitat Definition (5 pts)				
Level	Criteria			
Level 4 (5 pts)	Clear, accurate definition; includes biotic + abiotic factors; written in own words			
Level 3 (4 pts)	Mostly accurate; includes some key components			
Level 2 (2-3 pts)	Basic or partially correct; missing key ideas			
Level 1 (0-1 pt)	Incomplete or incorrect			
2. Habitat Design (15 pts)				
Criteria	5	3	2	1
Environmental Features	Climate, landforms, and abiotic factors clearly explained and realistic	Mostly clear	Some missing	Minimal
Visual Representation	Detailed, labeled, neat, and accurate	Mostly detailed	Some labels missing	Unclear
Creativity & Realism	Unique and scientifically plausible	Some creativity	Limited originality	Unrealistic
3. Organisms (10 total organisms = 5 pts each = 50 pts)				
Each organism is graded individually:				
Criteria	5	3	2	1
Adaptations (2 pts)	3+ clear, relevant adaptations	2 clear adaptations	1 adaptation	None/incorrect
Drawing (1 pt)	Detailed + labeled features	Clear drawing	Basic	Incomplete
Written Description (2 pts)	1-2 strong paragraphs explaining survival, role, and traits	Mostly clear	Some detail missing	Minimal
4. Ecosystem Explanation (10 pts)				
Criteria	10 pts	8 pts	5-7 pts	0-4 pts
Definition	Accurate, clear ecosystem definition	Mostly correct	Basic	Incorrect
Connections	Strong explanation of interactions (biotic/abiotic) using examples	Some connections	Limited explanation	No connections
5. Food Web (15 pts)				
Criteria	5	3	2	1
Accuracy	Correct energy flow & relationships	Minor errors	Several errors	Incorrect
Completeness	All 10 organisms included + roles labeled	Mostly complete	Missing elements	Incomplete
Clarity	Neat, easy to read, arrows correct	Mostly clear	Some confusion	Hard to follow
6. Overall Quality & Effort (5 pts)				
Level	Criteria			
Level 4 (5 pts)	Highly detailed, neat, and clearly shows strong effort			
Level 3 (4 pts)	Good effort			
Level 2 (2-3 pts)	Some effort			
Level 1 (0-1 pt)	Minimal effort			

What you get inside

★ Student project instructions for habitat design, organism creation, and ecosystem explanation

★ Structured student task pages for each part of the project

★ Food web activity with clear guidelines and expectations

★ Detailed project rubric plus extension activity rubric

★ Example organism to model expectations

★ Teacher guidance & support materials

Design a Habitat & Ecosystem Project

Project Overview
In this project, you will become an ecologist and designer! You will create your own unique habitat, fill it with specially adapted organisms, and explain how everything works together as part of an ecosystem.

Learning Goals

By the end of this project, you will:

- Define and understand **habitats** and **ecosystems**
- Explain how organisms are **adapted** to survive
- Understand how **energy flows** through a system (food webs)
- Show connections between living and non-living parts of a system

Part 1: What is a Habitat?

Task: Write a clear definition of a habitat in your own words (2–3 sentences)

Include:

- What lives there
- What conditions exist (water, temperature, shelter, etc.)

Part 2: Design Your Habitat

Task: Create and describe your habitat (realistic or imaginary)

You must include at least:

- The name of your habitat
- Climate (hot, cold, etc.)
- Physical features
- Abiotic factors
- Description of your habitat

Visual Requirements:

- Draw a picture of your habitat
- Label key features
- Include a title

Part 3: Create Your Organisms

Task: Create and describe 10 organisms that live in your habitat

- Producer
- Herbivore
- Carnivore
- Omnivore
- Decomposer

Assessment Rubric

1. Habitat Definition (5 pts)

Level	Criteria
Level 4 (5 pts)	Clear, accurate definition; includes biotic + abiotic factors; written in own words
Level 3 (4 pts)	Mostly accurate; includes some key components
Level 2 (2–3 pts)	Basic or partially correct; missing key ideas
Level 1 (0–1 pt)	Incomplete or incorrect

2. Habitat Design (15 pts)

Criteria	5	3	2	1
Environmental Features	Climate, landforms, and abiotic factors clearly explained and realistic	Mostly clear	Some missing	Minimal
Visual Representation	Detailed, labeled, neat, and accurate	Mostly detailed	Some labels	
Uniqueness & Plausibility	Unique and scientifically plausible	Some creativity	Limited originality	

Organisms (10 total organisms × 5 pts each = 50 pts)

Each organism is graded individually:

Criteria	5	3	2	1
Adaptations (2 pts)	3+ clear, relevant adaptations	Minor errors	Several errors	Incorrect
Connections	Strong explanation of interactions (biotic/abiotic) using examples	Some connections	Limited explanation	No connections

5. Food Web (15 pts)

Criteria	5	3	2	1
Accuracy	Correct energy flow & relationships	Minor errors	Several errors	Incorrect
Completeness	All 10 organisms included + roles labeled	Mostly complete	Missing elements	Incomplete
Clarity	Neat, easy to read, arrows correct	Mostly clear	Some confusion	Hard to follow

6. Overall Quality & Effort (5 pts)

Level	Criteria
Level 4 (5 pts)	Highly detailed, neat, and clearly shows strong effort
Level 3 (4 pts)	Good effort
Level 2 (2–3 pts)	Some effort
Level 1 (0–1 pt)	Minimal effort

Part 4: What is an Ecosystem?

Task: Write a definition of an ecosystem (2–3 sentences)

Then explain:

- How your habitat fits into an ecosystem (1 paragraph)
- Include:**
 - Interaction between living and non-living things
 - Examples from your habitat

Part 5: Food Web

Task: Create a food web using your 10 organisms.

Requirements:

- At least 1 producer
- Multiple consumers
 - At least 1 decomposer
- Use arrows to show **energy flow**
- Include labels:**
 - Producer
 - Primary consumer
 - Secondary consumer
 - Tertiary consumer (if applicable)

For EACH organism: You must include:

1. **Name of organism**
2. **Drawing** (with labeled features. Use your imagination and be creative.)
3. **Key adaptations** (at least 3)
 - Example: camouflage, sharp teeth, thick fur, deep roots
4. **Description** (1–2 paragraphs):
 - Where it lives in the habitat
 - What it eats
 - How it survives
 - How its adaptations help it

Example Organism

1. Name of Organism: Frostback Glider

2. Drawing

3. Key Adaptations

- Camouflaged fur that blends into snow and ice
- Gliding membranes to travel between icy cliffs without using much energy
- Thick insulating fur to survive extreme cold temperatures
- Sharp claws to grip slippery surfaces

4. Description

The Frostback Glider lives in a cold, mountainous habitat covered in snow and ice. It is most commonly found along steep cliffs and frozen forests, where strong winds and freezing temperatures make survival difficult. This organism stays high above the ground to avoid predators and uses tall icy trees and rock ledges as shelter.

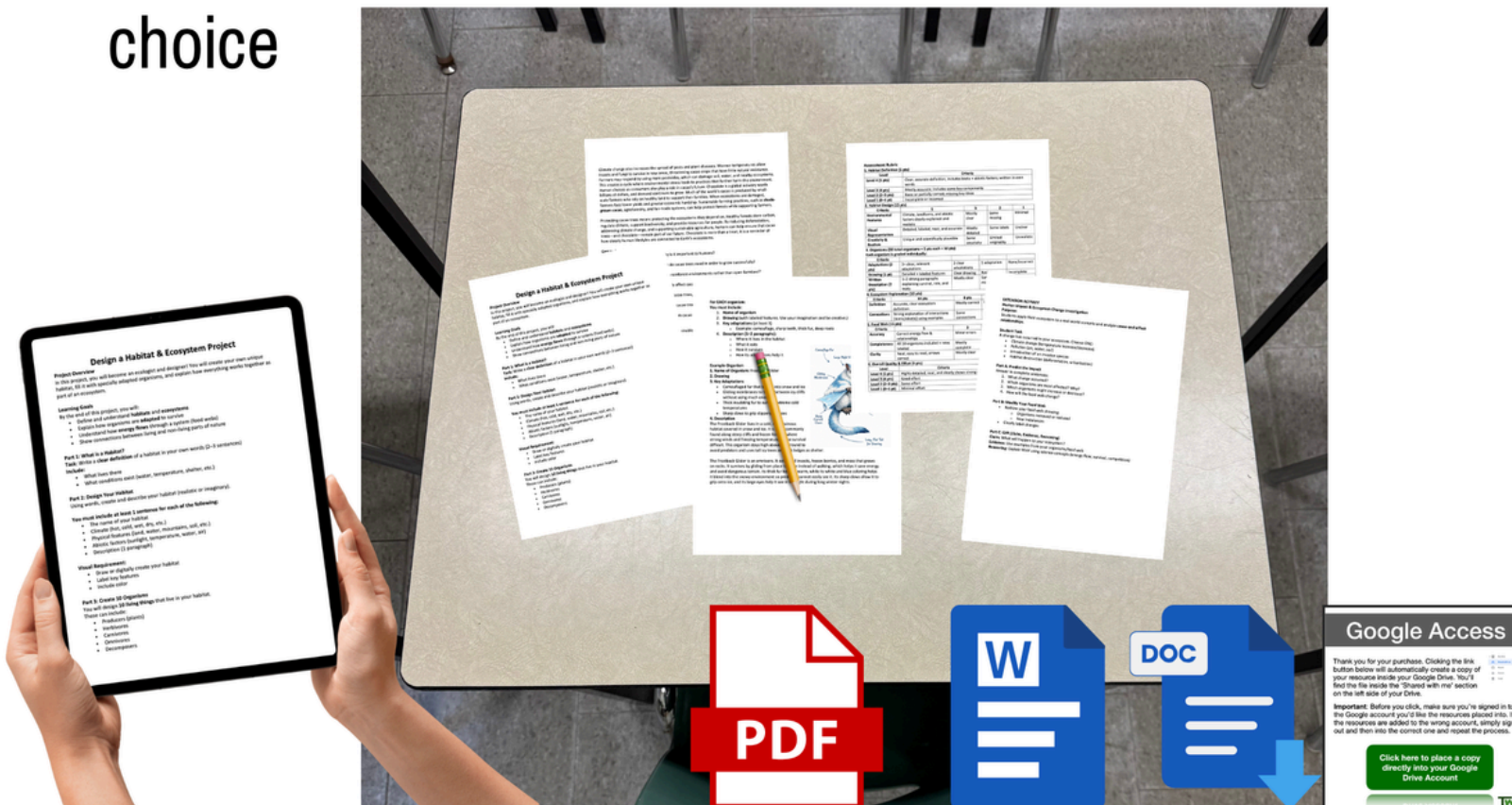
The Frostback Glider is an omnivore. It eats small insects, frozen berries, and moss that grows on rocks. It survives by gliding from place to place instead of walking, which helps it save energy and avoid dangerous terrain. Its thick fur keeps it warm, while its white and blue coloring helps it blend into the snowy environment so predators cannot easily see it. Its sharp claws allow it to grip onto ice, and its large eyes help it see in low light during long winter nights.



Skills Your Students Will Learn/Improve

CLASSROOM READY

- **PRINT-AND-GO** — NO PREP or extra planning required
- Student-friendly instructions and clear pacing
- Built-in scaffolds (questions, exemplars, rubric) support all learners - Print and Digital formats
- Flexible formats allow easy differentiation & student choice



- ✓ Understanding habitats, ecosystems, and organism adaptations
- ✓ Modeling energy flow through food webs
- ✓ Cause-and-effect reasoning in ecological systems
- Scientific communication through writing, visuals, and models
- ✓ Creative problem-solving through design and application
- ✓ Environmental literacy and understanding of human impact

Your Project

NO PREP or Materials
JUST PRINT AND GO

WHAT YOU GET

✓ Complete instructions for students to define and design a habitat, create 10 organisms adapted to live there, and explain how they fit into the ecosystem.

✓ Complete grading materials including a main project rubric and separate extension activity rubric.

✓ An extension activity for early finishers.

✓ Examples to help guide student understanding.

Design a Habitat & Ecosystem Project

Project Overview

In this project, you will become an ecologist and designer! You will create your own unique habitat, fill it with specially adapted organisms, and explain how everything works together as part of an ecosystem.

Learning Goals

By the end of this project, you will:

- Define and understand **habitats** and **ecosystems**
- Explain how organisms are **adapted** to survive
- Understand how **energy flows** through a system (food webs)
- Show connections between living and non-living parts of nature

Part 1: What is a Habitat?

Task: Write a **clear definition** of a habitat in your own words (2–3 sentences)

Include:

- What lives there
- What conditions exist (water, temperature, shelter, etc.)

Part 2: Design Your Habitat

Using words, create and

You must include at least:

- The name of you
- Climate (hot, cold)
- Physical features
- Abiotic factors (s)
- Description (1 pa

Visual Requirement:

- Draw or digitally
- Label key feature
- Include color

Part 3: Create 10 Organisms

You will design 10 living organisms. These can include:

- Producers (plant)
- Herbivores
- Carnivores
- Omnivores
- Decomposers

Students become the ecologist while creating organisms and designing habitats & Ecosystems.



Assessment Rubric				
1. Habitat Definition (2 pts)				
Level	Criteria			
Level 4 (2 pts)	Clear, accurate definition; includes both a key component; written in own words			
Level 3 (1 pt)	Mostly accurate; includes some key components			
Level 2 (0 pts)	Basic or partially correct; missing key details			
Level 1 (0 pts)	Incomplete or incorrect			
2. Habitat Design (10 pts)				
Criteria	1	2	3	4
Environmental Features	Climate, landforms, and abiotic factors clearly explained and visually represented	Mostly clear	Some missing	Minimal
Visual Representation	Unique and scientifically plausible illustration	Mostly detailed	Some detail missing	Unclear
Organization	Unique and comprehensive layout	Some creativity	Limited originality	Unreadable
3. Energy Flow (10 total paragraphs = 10 pts each = 10 pts)				
Each organism is graded individually				
Adaptations (2 pts)	1 clear, relevant adaptation	2 clear adaptations	3 adaptation	None/Incorrect
Energy Flow (2 pts)	Correct - related features	Clear drawing	Basic	Incomplete
Description (2 pts)	2 or more paragraphs explaining survival, growth, and health	Mostly clear	Some detail	Unclear
4. Ecosystem Explanation (10 pts)				
Definition	10 pts	10 pts	5 pts	0-4 pts
Accuracy	Accurate, clear, ecosystem	Mostly correct	Some errors	No connections
Completeness	Strong explanation of interactions between organisms using examples	Some connections	Limited explanation	No connections
5. Food Web (10 pts)				
Accuracy	Correct energy flow & relationships	Mostly correct	Several errors	Incorrect
Completeness	All 10 organisms included & roles labeled	Mostly complete	Missing details	Incomplete
Clarity	Clear, easy to read, arrows correct	Mostly clear	Some confusion	Hard to follow
6. Overall Quality & Effort (2 pts)				
Level	Criteria			
Level 4 (2 pts)	Highly detailed, neat, and clearly shows strong effort			
Level 3 (1 pt)	Good effort			
Level 2 (0 pts)	Some effort			

For EACH organism:

You must include:

- Name of organism
- Drawing with labeled features. Use your imagination and be creative!
- Key adaptations (at least 3)
 - Example: camouflage, sharp teeth, thick fur, deep roots
- Description (3–4 paragraphs)
 - Where it lives in the habitat
 - What it eats
 - How it survives
 - How its adaptations help it

Example Organism

1. Name of Organism: Frostback Glider

2. Drawing

- Camouflage for that blends into snow and ice
- Giving membranes to travel between icy cliffs without using much energy
- Thick insulating fur to survive extreme cold temperatures

3. Key Adaptations

Sharp claws to grip slippery surfaces

4. Description

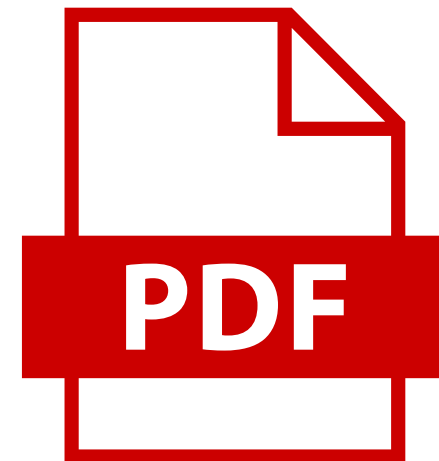
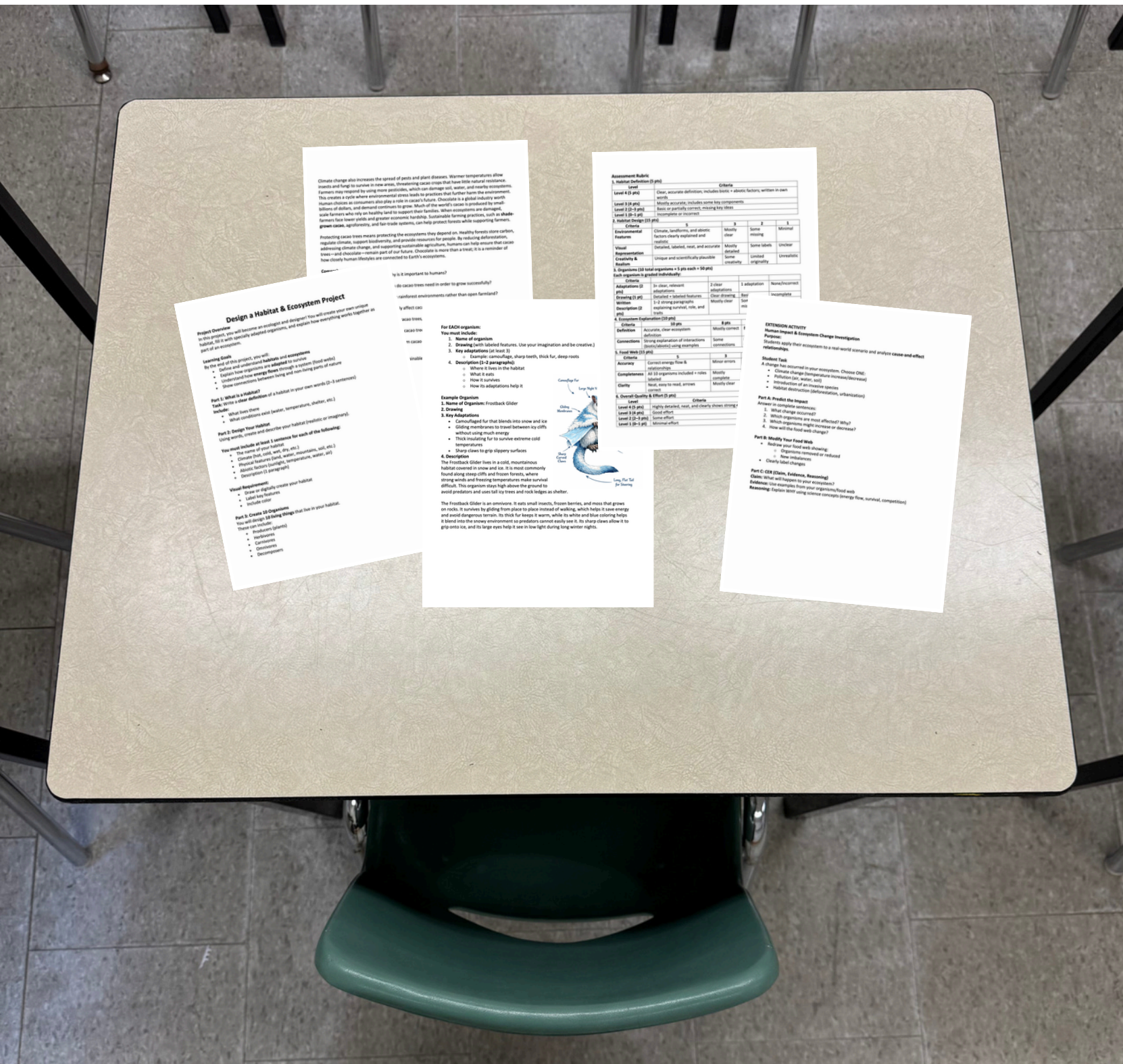
The Frostback Glider lives in a cold, mountainous habitat covered in snow and ice. It is most commonly found along steep cliffs and frozen forests, where strong winds and freezing temperatures make survival difficult. This organism stays high above the ground to avoid predators and uses tail to by trees and rock helps as shelter.

The Frostback Glider is an omnivore. It eats small insects, frozen berries, and moss that grows on rocks. It survives by gliding from place to place instead of walking, which helps it save energy and avoid dangerous terrain. Its thick fur keeps it warm, while its white and blue coloring helps it blend into the snowy environment as predators cannot easily see it. Its sharp claws allow it to grip onto ice, and its large eyes help it see in low light during long winter nights.



At School or at Home

Fully digital and editable - can be done in class or through distance education/homeschool



Ways to Use this Resource

- 1. Stand-alone project for ecosystems, habitats, or life science units.**
- 2. Culminating assessment at the end of an ecology or adaptations unit.**
- 3. Project-based learning activity for independent or group work.**
- 4. Sub-friendly lesson or enrichment task with built-in structure and guidance.**

Thanks
**for your interest
in this resource!**

I am a real person and if
you have any questions,
suggestions, or concerns,
please reach out.



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TWF

Teach With Fergy

*Let's
Connect!*

