

The Virtual Field's Ecosystem Exploration Videos

K-12 Curriculum Development

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Oregon Sea Grant
April 21, 2023



National Association for Marine Laboratories (NAML) meeting



Background

How do you teach field science during a global pandemic?

TheVirtualField.org

Project of the
Organization of
Biological Field Stations
(OBFS)

Funded by NSF RAPID
grant.

50+ field stations and
marine laboratories
(FSML)

Initial focus: Universities

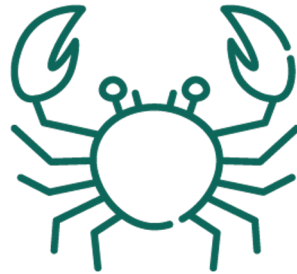
The Virtual Field

Explore ecosystems

Talk with researchers at their study sites

Attend field workshops and seminars

The Virtual Field brings you educational experiences at field stations and marine laboratories around the world.



Recreate & Expand FSML Learning Experiences

- Provide first-hand outdoor experiences
- Support Skills Development
 - Observation
 - Communication
 - Critical Thinking
- Cross-site comparisons
- Reach students who may otherwise experience barriers to participation

The Virtual Field web portal



Ecosystem Exploration



Live from the Field



360 Videos

Search Results:



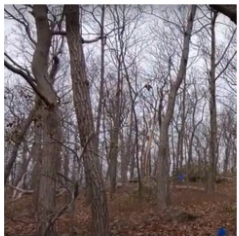
Archbold Biological Station Florida Scrub*

A walk through an endemic scrubland in the Florida subtropics
drought adaptation, disturbance-fire, regeneration, ecosystem engineers, conservation



Black Fork Wetlands Freshwater Marsh*

A walk from the outer edge to open water in a freshwater marsh in Ohio.
physiological tolerance, decomposition, types of decomposition, research, climate change



Black Rock Forest Chestnut Oak Woodland*

Ecology and formative processes of a Chestnut Oak Forest in New York.
climate change, reproduction & recruitment, fire adaptation, forest regeneration, soil depth & structure, disease

Ecosystem Exploration Videos

- Teaches observation and communication skills
- 5-min, unnarrated point-of-view videos
- Search videos by location, environment, concepts, standards
- Each video comes with teaching materials

30+ EE videos so far

Hurricane Island Rocky Intertidal Zone*

A walk through the rocky intertidal zone on Hurricane Island, 11 miles off the coast of Maine
zonation, photosynthesis & pigments, adaptation, morphology, filter feeders

[Explorer Guides](#)

[Instructor Guides](#)



Contributing Institution: Hurricane Island Center for Science and Leadership, Hurricane Island Center for Science and Leadership

Site Website: [Hurricane Island Center for Science and Leadership](#)

Site Contact: Madison Maier

Videographer: Madison Maier

Date Video Recorded: 25/04/2020

[About This Ecosystem](#)

Ecosystem Exploration Videos

Title

- Brief description
- List of concepts
- Quick links to Guides below

Unnarrated video (<5min)

- Contributor info
- Lat/Long, Biome, etc.

Explorer Guides

- Write Field Notes
- Sketch What You See
- Ask Questions
- Find Evidence

Instructor Guides

- [Register & Log In to access](#)

Write Field Notes

University, High School, K8 versions

Watch the EE video

The Virtual Field - Ecosystem Exploration Series

WRITE FIELD NOTES

Explorer Guide

thevirtualfield.org is a project of the Organization of Biological Field Stations

K-8

Take a field trip to field stations and marine laboratories around the world. These are places where researchers study natural processes and how humans interact with the landscape. Each video is filmed by a researcher who takes you on a guided, but unnarrated, tour of an ecosystem.

As you walk with them, hone your powers of observation by describing what you see.

Which [Ecosystem Exploration video](#) will you watch? Your teacher may assign a video or allow you to choose a video from the library.

Video Title: _____

DESCRIBE AN ECOSYSTEM

- Watch the entire video once.
- Watch the video again, but this time, take notes about things you notice. Write words or short phrases that come to mind.

Initial short observations

Think-Pair-Share with a neighbor

➔

Share one observation with the class

- Now write **up to three sentences** to describe the ecosystem and any changes you observe as the viewer travels through it.

Write 3 descriptive sentences about the ecosystem

MATERIALS YOU WILL NEED

- Computer
- Internet
- Pen or pencil

DURATION

1 hour activity

OTHER ACTIVITIES

- Sketch What You See
- Ask Questions
- Find Evidence

MORE INFORMATION

thevirtualfield.org

Blurry video? See viewing tips posted next to each video link on [The Virtual Field website](#).

The Virtual Field - Ecosystem Exploration Series

WRITE FIELD NOTES

Explorer Guide

thevirtualfield.org is a project of the Organization of Biological Field Stations

K-8

I NOTICE: What did you see in the video that surprised or interested you?

I notice, I wonder

I WONDER: Do you wish the video had shown you a view that it didn't? If so, what was it?

WRITE A DETAILED DESCRIPTION

Watch the video a third time, and pause at a scene that interests you.

Write and/or draw a description of the scene or an object in greater detail than you used in your previous descriptions. Your description should include details. Include thing like:

- Colors, shapes, textures and patterns.
- Both macro (scene/landscape) and micro (small detail) scales.
- The number, size, or distance of something in the image.

Pause video and describe the scene in detail

Share your description with a neighbor and have them watch the video. Can they find the scene you're describing? Ask them what you communicated accurately, and what you missed.

Can a classmate find the place you described?

The Virtual Field - Ecosystem Exploration Series

WRITE FIELD NOTES

Explorer Guide

thevirtualfield.org is a project of the Organization of Biological Field Stations

K-8

COMPARE ECOSYSTEMS

Choose and watch a second [Ecosystem Exploration video](#) (your teacher may assign a video, or may direct you to choose your own).

Video Title: _____

Repeat the "Describe an Ecosystem" exercise above. First, watch the entire video once. Then watch the video again, but this time, take notes about things you notice. Write words or short phrases that come to mind.

Repeat with a different EE video


How is this ecosystem different from the one you explored in the first video? How is it similar?

Compare ecosystems

Did watching the second video make you want to add anything to your description of the first video? If so, what would you have added?

Write Field Notes

University, High School, K8 versions



The Virtual Field - Ecosystem Exploration Series

WRITE FIELD NOTES

Instructor Guide

thevirtualfield.org is a project of the Organization of Biological Field Stations

K-8

Take your students on a virtual field trip. The Virtual Field's Ecosystem Exploration video series allows students to explore a wide range of habitats and environments as they build observation, communication, questioning and critical thinking skills. Each 5-minute video is filmed on smartphones by a researcher at field station and marine laboratories.

This activity boosts student written communication skills. This is the first in a scaffolded series of exercises.

STUDENT MATERIALS

- Computer
- Paper
- Pen or pencil

DURATION

10 min instructor intro
1 hour student activity

BACKGROUND INFORMATION

Why Teach Students to Make Observations?

Students learn about the nature of science when they make, record, and communicate their observations of the natural world. In addition to fostering creativity and attention to detail, making observations engages learners in several [Science and Engineering Practices](#) (SEP). When students make observations of phenomena, they are collecting data that they can use to make comparisons, develop hypotheses, or serve as evidence to support a claim.

Why Teach Communication Skills?

Successful communication is a foundational skill that is often cited by employers as crucial for success in many fields. In science, this 21st Century skill is part of the nature of science, and at the heart of Engaging in Argument from Evidence (SEP 7) and Obtaining, Evaluating, and Communicating Information (SEP 8).

Why Explore Virtual Ecosystems?

Like never before, today's technologies provide K-12 students with opportunities to travel "virtually" across the globe to explore new places, cultures, and ideas through a screen. Ecosystem Exploration videos share detailed, firsthand perspectives of diverse natural areas, sparking student interest not only in the ecosystem itself, but also the research taking place at these field sites.

SCAFFOLDED ACTIVITIES

- Write Field Notes - This Exercise
- Sketch What You See
- Ask Questions
- Find Evidence

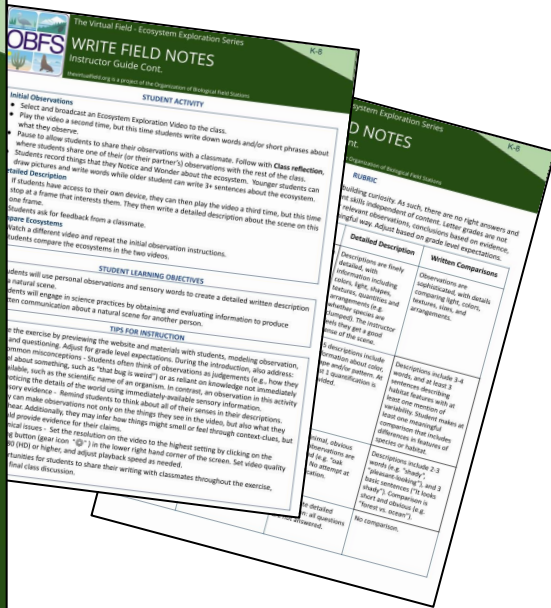
USING THIS ACTIVITY

This activity can be used in place of a field trip or to enhance skills in preparation for a field trip. It can be used as an independent assignment or assigned to groups to encourage students to share and communicate their observations. The teacher can also broadcast the video and lead the class through first parts of the exercise together. Pre-teach key vocabulary/concepts that you would like to see reflected in students' written observations.

MORE INFORMATION

thevirtualfield.org

Blurry video? See viewing tips posted next to each video link on The Virtual Field website.



The image shows two overlapping pages from the 'Write Field Notes' instructor guide. The top page is the 'STUDENT ACTIVITY' page, which includes sections for 'Initial Observations', 'Class Reflection', 'Detailed Description', and 'Written Comparisons'. The bottom page is the 'STUDENT LEARNING OBJECTIVES' page, which lists objectives for students to use personal observations and sensory words to create a detailed written description of a natural scene, and to engage in science practices by obtaining and evaluating information to produce communication about a natural scene for another person. It also includes 'TIPS FOR INSTRUCTION' and 'RUBRIC' sections.

Instructor Guide

- Background Info
 - Connections to NGSS Science & Engineering Practices
- Using the Activity
 - Individual or entire class? Many options! Let teachers decide.
- Activity Overview
- Learning Objectives
- Tips for Instruction
 - Scaffolding, address misconceptions, technology
- Rubric

Learning Objectives

- Use personal observations to create a detailed written description of a natural scene.
- Engage in science practices.

Sketch What You See

University, High School, K8 versions

The Virtual Field - Ecosystem Exploration Series High School

OBFS SKETCH WHAT YOU SEE Explorer Guide

thevirtualfield.org is a project of the Organization of Biological Field Stations

Take a field trip to field stations and marine laboratories around the world. These are places where researchers study natural processes and how humans interact with the landscape. Each video is filmed by a researcher who takes you on a guided, but unnarrated, tour of an ecosystem. As you walk with them, hone your powers of observation by drawing what you see.

1. You see, but you do not observe.... *The world is full of obvious things which nobody by any chance ever observes.*

- Sherlock Holmes

This exercise is not about getting the right answer. It's about learning to go beyond seeing and to begin observing. So take a second to relax, filter out the noise from your surroundings, and imagine yourself as a detective in this ecosystem. We recommend you set aside an hour to complete the exercise.

3. **PREPARATION & WARM UP**

Most people think they "can't draw." RELAX! This should be fun. This is not about the quality of the drawing. Drawing helps us hone our observational skills by making us pay attention to what we are seeing. Just make an effort to follow the directions and all will be well.

4. 1. First, watch this [short video](#) about scientific illustration.

2. Watch this 5-minute video that explains [How to Draw a Blind Contour drawing](#). Gather your drawing materials and in the space below, warm up with a "Blind Contour" exercise (5 minutes).

MATERIALS YOU WILL NEED

- Computer
- Internet
- Paper
- Pencil and Pen

DURATION

1 hour activity

OTHER ACTIVITIES

- Write Field Notes
- Ask Questions
- Find Evidence

MORE INFORMATION

thevirtualfield.org

Blurry video? See viewing tips posted next to each video link on [The Virtual Field website](#).

The Virtual Field - Ecosystem Exploration Series High School

OBFS SKETCH WHAT YOU SEE Instructor Guide Cont.

thevirtualfield.org is a project of the Organization of Biological Field Stations

STUDENT ACTIVITY

Preparation and Warm Up

- Watch drawing instruction videos.
- Warm up with a short Blind Contour drawing exercise.

Make Drawings

- Watch an Ecosystem Exploration Video.
- Select a frame from the video and create a detailed and labeled drawing of an object in the natural scene.
- Sketch more objects in the video that are similar to the original subject.

Reflect with a Classmate

- Challenge a classmate to watch the video and use your drawing to find the objects you drew.
- Discuss how this exercise has affected your observation skills.

STUDENT LEARNING OBJECTIVES

- Students will use personal observations to create a detailed drawing of a natural scene.
- Students will engage in science practices by developing a model (drawing) to communicate information about a natural scene to another person.

TIPS FOR INSTRUCTION

Introduce the exercise by previewing the website and materials with students. It can be helpful for the teacher to model observation, curiosity and questioning. During the introduction, also address:

- Common misconceptions - Students are often concerned about their artistic abilities, and are worried that their drawings are not 'good enough'. However, the point of this exercise is not for students to produce museum-quality art, but rather to enhance their observation skills and attention to detail.
- Sensory evidence - Remind students to avoid drawing what a "leaf" or a "fish" is "supposed to look like, but rather to capture the details of outlines, shapes, and shadows that they actually see on the screen.
- Technical issues - Set the resolution on the video to the highest setting by clicking on the setting button (gear icon "⚙") in the lower right hand corner of the screen. Set video quality to 1080 (HD) or higher, and adjust playback speed as needed.

Provide opportunities for students to share their drawings with classmates throughout the exercise, and/or with a final class discussion.

Relax! This should be fun.



Activities #1, #2, #3

University, High School, K8 versions

Write Field Notes - Builds observation and communication skills

- Instructor Overview: [University, High School, K-8](#)
- Assignment (Student Explorer's guide): [University, High School, K-8](#)

Sketch What You See - Builds observation and communication skills

- Instructor Overview: [University, High School, K-8](#)
- Assignment (Student Explorer's guide): [University, High School, K-8](#)

Ask Questions - Builds observation, curiosity, and questioning skills

- Instructor Overview: [University, High School, K-8](#)
- Assignment (Student Explorer's guide): [University, High School, K-8](#)



#4: Find Evidence of Ecosystem Processes

University, High School, K8 versions

1 - Zonation

1

The Virtual Field: Ecosystem Exploration Series
Find Evidence
Hurricane Island Rocky Intertidal Zone

For more about this video visit www.seagrant.org/ee/ee_videos

2

Explore the ecosystems of the earth.
An ecosystem is a group of plants, animals, and other organisms, as well as weather and climate, that together form a natural unit. These factors try to find evidence of changing biodiversity around the world. There are places where researchers study natural processes and how humans impact the landscape. Each video includes a tool for researchers with data plots of graphs, text, and photos that are all important.

As you walk with them, search for evidence everywhere.

You have already seen these questions, have your walk this time with the "Virtual Field Notes" search tool that has all the Questions Field type at www.seagrant.org/ee/ee_videos

3

Hurricane Island Rocky Intertidal Zone

A walk through the rocky intertidal zone on an island, located 11 miles offshore the coast of Maine.

Field Station or Marine Lab: Hurricane Island Center for Science and Leadership

Location: Maine, United States (11.11.11.11, 11.11.11.11)

Climate Zone: temperate

Biome: The temperate zone is characterized by the absence of freezing, snow, and ice. The average precipitation is 40-70 inches and the average temperature is 50-60 degrees Fahrenheit (10-15 degrees Celsius).

Biome: temperate

Vegetation Type: many vascular plants

Year: 2000

Video Recorder: Jack 2000

4

Rocky Intertidal Zone

The rocky intertidal zone is a strip of coastal habitat that lies between the lowest and highest tides. Oceanographers use the term "intertidal zone" to refer to the area between the low and high tide marks. This area is a very important habitat for many organisms. It is a very diverse and productive ecosystem. The rocky intertidal zone is a very important habitat for many organisms. It is a very diverse and productive ecosystem.

1a Zonation

Zonation: Organisms in environmental conditions (such as moisture and food) can not overcome the plants based on their needs of resources. In this zone, organisms are spatially (and where conditions are harsher (upper zone) and increase in abundance and diversity where conditions are more moderate (lower zone).

1b Zonation

Zonation: Organisms in environmental conditions (such as moisture and food) can not overcome the plants based on their needs of resources. In this zone, organisms are spatially (and where conditions are harsher (upper zone) and increase in abundance and diversity where conditions are more moderate (lower zone).

2 - Photosynthesis & Pigments

1b Zonation

Zonation: Organisms in environmental conditions (such as moisture and food) can not overcome the plants based on their needs of resources. In this zone, organisms are spatially (and where conditions are harsher (upper zone) and increase in abundance and diversity where conditions are more moderate (lower zone).

1c Zonation

Zonation: Organisms in environmental conditions (such as moisture and food) can not overcome the plants based on their needs of resources. In this zone, organisms are spatially (and where conditions are harsher (upper zone) and increase in abundance and diversity where conditions are more moderate (lower zone).

1d Zonation

Zonation: Organisms in environmental conditions (such as moisture and food) can not overcome the plants based on their needs of resources. In this zone, organisms are spatially (and where conditions are harsher (upper zone) and increase in abundance and diversity where conditions are more moderate (lower zone).

2

Photosynthesis & Pigments: Photosynthesis is the process by which plants, algae, and some bacteria use energy from sunlight to convert carbon dioxide into sugar. Autotrophs produce their own food.

Photosynthetic organisms can absorb light energy. With the use of green pigments (chlorophyll) which absorb light energy and red pigments of sunlight.

In nature, organisms use red pigments are filtered out during tides. One green pigments are green light. Some organisms have evolved the brown pigment fucoxanthin which can absorb energy from blue light.

2a Photosynthesis & Pigments

Describe the organism you see of lines 2:10-2:12 including the color, texture and length of the blades. Can you find evidence that the particular organism may be utilizing fucoxanthin?

Description of Organism:

Evidence for fucoxanthin:

2b Photosynthesis & Pigments

Describe how the color of algae in different throughout the intertidal zones, where do you see red of the brown color and why might these organisms be in need of this pigment?

Distribution of Color:

3 - Adaptation

3

Adaptation: Many organisms have adapted to life in the harsh conditions of the intertidal. For example, many species of barnacles (especially those on seaweeds) have adaptations that protect them from the wave action. These adaptations include a hardening of the shell and a strong attachment to the rock. They also have a way to close their shells to prevent water from leaving the rock, which is important for the survival and an anchor to float.

3a Adaptation

Compare the observed characteristics 2:00 and 2:33. Describe the color, texture, and length of the blades.

Time Stamp:

Description of Evidence:

3b Adaptation

Which one do you think is better adapted for strong wave action, and why?

Response for Action:

4

Morphology: The morphology of an organism is its size, shape, and structure. For example, the morphology of a plant is its height, width, and thickness. The morphology of a plant is its height, width, and thickness. The morphology of a plant is its height, width, and thickness.

4a Morphology

Find an example of *Desmarestia* in the video and describe it. What kind of pigment do you see in the seaweed?

Time Stamp:

Description of Evidence:

4b Morphology

How does the morphology of *Desmarestia* relate to where it is observed on the intertidal? What might be possible reasons why it might not occur higher or lower in the intertidal?

Description:

5 - Filter Feeders

5

Filter Feeders: Barnacles (including limpets) often appear as a small cluster of tubes that are red, but they are much more than that. They are organisms, which are adapted to survive, swim, and drink. When they are young, barnacles are the swimming. One day, they attach themselves to a rock with a very strong glue and begin building a complex three-layered structure from their own cells. They then spend the rest of their lives there.

INSIDE A BARNACLE

Food of the barnacle's diet comes as a clear fluid that is filtered through the body and used for energy. The barnacle opens its mouth and uses its gills to filter the water. The gills are used for breathing. The gills are also used for filtering.

5a Filter Feeders

During the time the camera is underwater, find an example of a barnacle. Describe it and what you think it's doing.

Time Stamp:

Description of Evidence:

5b Filter Feeders

Why do you think barnacles anchor themselves to rocks and live within a hard shell of plates?

Response for Anchoring:

22

Please let us know what you think by taking this 2-minute survey.

Student Explorer's Guide

- Unique to one EE video
- Multiple slides (20+)
- Five content topics
- Students fill in answers to the questions posed in the slides



#4: Find Evidence of Ecosystem Processes

University, High School, K8 versions

The Virtual Field Ecosystem Exploration Series
OBFS
Hurricane Island Rocky Interstitial Zone
Answer Guide
K-8 Version

Instructor Notes

- This Answer Guide can be used as a guide to help you find evidence for each process in the field.
- It is intended to be used as a guide to help you find evidence for each process in the field.
- It is intended to be used as a guide to help you find evidence for each process in the field.

Hurricane Island Rocky Interstitial Zone

Field Station or Marine Lab: Hurricane Island Center for Science and Leadership
Location: Hurricane Island, MA 02542, 42°02'N
Climate: temperate
Biome: temperate forest
Vegetation Type: rocky interstitial zone
Biotope: rocky interstitial zone

Rocky Interstitial Zone

The rocky interstitial zone is an ecosystem that is between the highest and lowest tide zones. Organisms in the zone are only exposed to the water during low tide and are submerged during high tide. This zone is a rocky interstitial zone. Organisms in the zone are only exposed to the water during low tide and are submerged during high tide. This zone is a rocky interstitial zone.

1 Zonation: Organisms in an ecosystem can be found in different zones based on their tolerance for environmental conditions. In the rocky interstitial zone, organisms are found in different zones based on their tolerance for environmental conditions. In the rocky interstitial zone, organisms are found in different zones based on their tolerance for environmental conditions.

1a Zonation

During time 2:00-2:15 you are walking in the upper interstitial zone. Give a description of the zone, including the texture, color, and distribution of plants or animals you can see.

1b Zonation

During time 1:51-2:18 you are walking in the upper interstitial zone. Give a description of the zone, including the texture, color, and distribution of plants or animals you can see.

1c Zonation

During time 2:19-2:38 you are walking in the middle interstitial zone. Give a description of the zone, including the texture, color, and distribution of plants or animals you can see.

1d Zonation

During time 3:39-4:07 you are walking in the lower interstitial zone. Give a description of the zone, including the texture, color, and distribution of plants or animals you can see.

2 Photosynthesis & Pigments: Photosynthesis is the process by which plants, algae, and some bacteria use energy from sunlight to convert carbon dioxide into sugar. Chlorophylls can turn a gas into a solid.

2a Photosynthesis & Pigments

Describe the organisms you see at time 2:00-2:15 including the color, texture and length of the blades. Can you find evidence that this particular organism may be using photosynthesis?

2b Photosynthesis & Pigments

Describe the color of algae as distributed throughout the interstitial zones. Where do you see most of the brown color and why might these organisms be in need of the pigment?

3 Adaptation: Many organisms have adapted to life in the harsh conditions of the interstitial zone. For example, some species of photosynthetic organisms (known as seaweeds) have adaptations that protect them from the water column. These adaptations include a thick, waxy cuticle that reduces water loss, and a waxy cuticle that reduces water loss.

3a Adaptation

Compare the seaweeds at stations 2:00 and 2:15. Describe the color, texture, and length of the blades.

3b Adaptation

What one do you think is better adapted for strong wave action, and why?

4 Morphology: The morphology of an organism is its size, shape, and structure. For example, the morphology of a plant is its size, shape, and structure. For example, the morphology of a plant is its size, shape, and structure.

4a Morphology

Find an example of the Sea Lettuce and describe it. What kind of pigment do you think this organism has?

4b Morphology

How does the morphology of the Sea Lettuce relate to where it is observed on the shore? What might be possible reasons why it might not occur higher or lower in the interstitial zone?

5 Filter Feeders: Some organisms (called filter feeders) often appear as a small white or brown mass on a rock, but they are much more than that. They are organisms, which are related to sponges, corals, and shrimp. When they are young, they are very sensitive to environmental conditions. They are organisms, which are related to sponges, corals, and shrimp.

5a Filter Feeders

During the time the camera is underwater, find an example of a barnacle. Describe it and what you think it is doing.

5b Filter Feeders

Why do you think barnacles attach themselves to rocks and why is that best used of places?

Teachers, please help improve these materials by taking this 5-minute survey.

19

20

21

22

Instructor Answer Guide

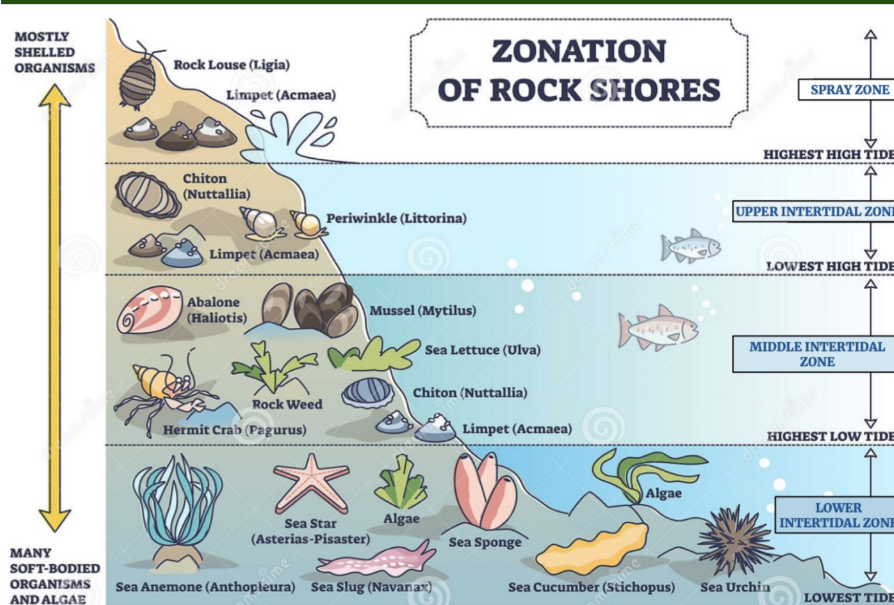
- Shows example answers
- Additional content and vocabulary is included in the NOTES section
- Link to annotated video
- Aligned to Disciplinary Core Ideas (DCI)



#4: Find Evidence of Ecosystem Processes

University, High School, K8 versions

1 Zonation: Gradients in environmental conditions (such as moisture and heat) can sort organisms into zones based on their levels of tolerance. In the rocky intertidal, organisms are sparse (low) where conditions are harshest (spray zone) and increase in abundance and diversity where conditions are more moderate (lower intertidal).



- Spray Zone: Occasionally wet, almost always hot and dry
- Upper Intertidal: Submerged twice per day during high tide, mostly hot and dry
- Middle Intertidal: Most often submerged, hot and dry twice per day at low tide
- Lower Intertidal: Almost always submerged, rarely hot and dry at lowest of low tides.

#4: Find Evidence of Ecosystem Processes

University, High School, K8 versions

1a Zonation

During time 0:50-1:21 you are walking in the **spray zone**. Give a description of this zone, including the texture, color, and distribution of plants or animals you can see.

Description of Evidence

There is a lack of water and organisms. The only thing I see in this area besides rocks is a green, wet mat of what looks like algae.

K-8

Concept: To live in this zone, organisms must be able to handle intense **desiccation**, high temperatures and **wave abrasion** during storms.

The green and wet material encrusting the rock face is **blue-green algae**, also referred to as **cyanobacteria**. Blue-green algae grow in tangled filaments that attach to rock surfaces. Each **filament** is composed of a line of cells that secrete a sticky mucus sheath that protects the cell from drying out and the effects of rapidly changing salinity. The mucus also holds the filament securely to the rock surface.

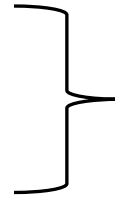


EE Video K-12 Alignment

POSTED ONLINE NOW:

K-8 and HS Materials for

- Write field notes
- Sketch what you see
- Ask questions

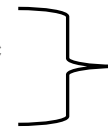


*Aligned to NGSS Science
and Engineering Practices*

COMING in MAY:

K-8 and HS Materials for

- Find Evidence for Ecosystem Processes*



*Aligned to and
searchable by
NGSS Disciplinary
Core Ideas*

“Using The Virtual Field with K-12 Students”

Using The Virtual Field with K-12 Students

May 25, 2023

4:30PM – 5:30PM Pacific Time (7:30-8:30PM Eastern)

K-12 educators, take your students on a virtual field trip!
*Join Oregon Sea Grant for a 1-hr online educator workshop
to learn about **The Virtual Field***

The Virtual Field (thevirtualfield.org) was launched in 2020 with support from the National Science Foundation. The online platform enables students to explore ecosystems around the world while building observation, communication, and critical thinking skills. Each unnarrated 5-minute Ecosystem Exploration video is filmed on a smartphone by a researcher at field station or marine laboratory.

- **What do you notice?**
- **Describe your evidence!**
- **Sketch what you see.**
- **What questions do you have?**



The instructor portal provides NGSS-aligned student guides and teacher keys to support students as they use Ecosystem Exploration videos from around the world to understand ecosystem processes, human impacts, and field research.

Register to attend this introductory session at <https://beav.es/SBi>



www.TheVirtualField.org

*Accommodation requests related to a disability
should be made by May 11 to cait.goodwin@oregonstate.edu.*



K-12 Educator workshop 1 hour online

May 25, 2023
4:30PM PT / 7:30PM ET



All welcome!
Register to attend
<https://beav.es/SBi>