

IslandWood is a registered 501c3 charitable organization. Our mission is to provide exceptional learning experiences and to inspire lifelong environmental and community stewardship. Our four-day School Overnight Program extends learning beyond the classroom, engaging 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> graders in critical thinking, scientific investigations, and actions that build awareness of and concern for the wellbeing of our communities and the planet.

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- ⇒ Summer Camps
- ⇒ Educational Programs on Bainbridge Island, in Seattle, and at the Brightwater Wastewater Treatment Plant
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## Field Journal

Name:

Field Group:

Lodge:

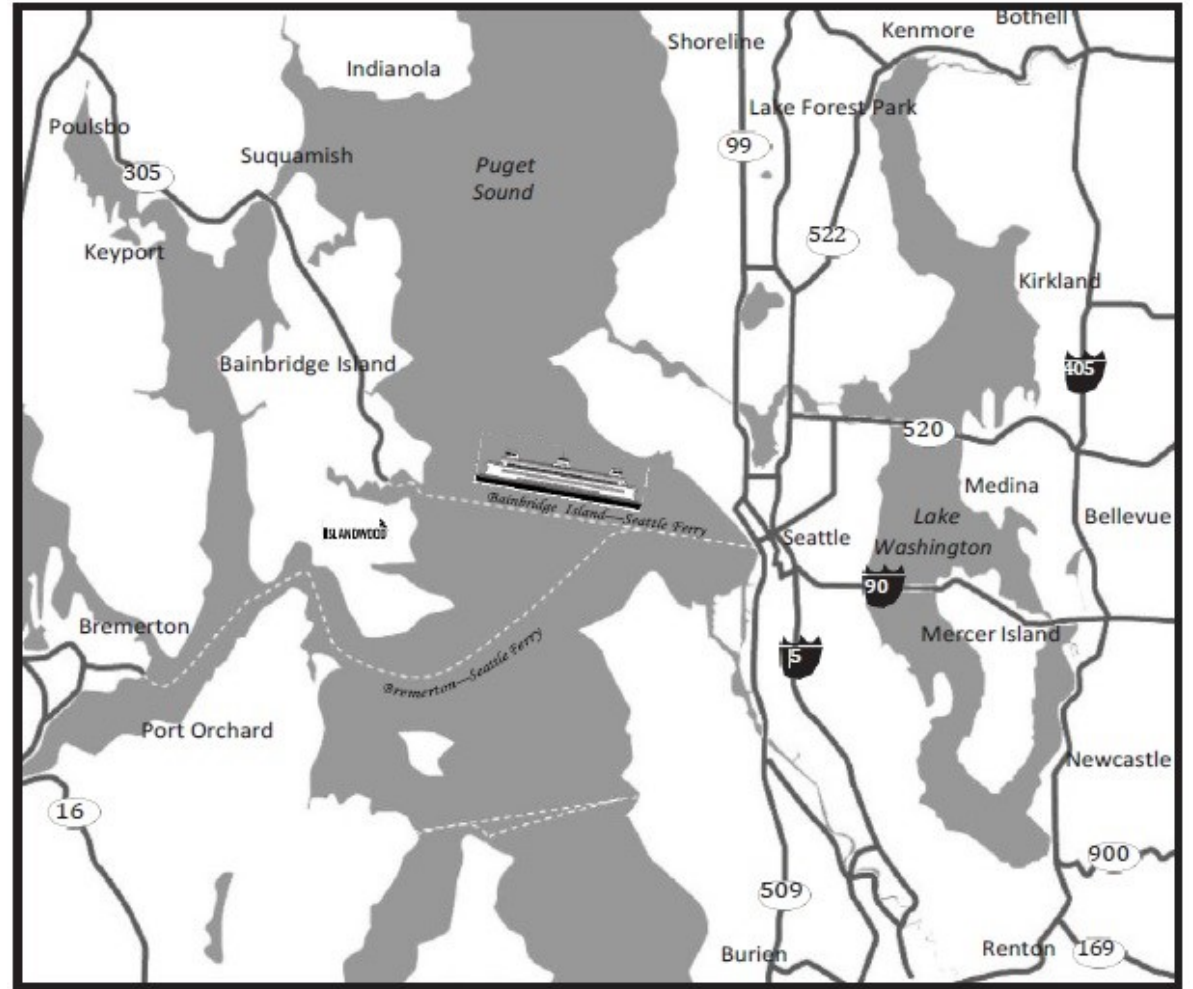
School:

IslandWood Instructor:

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# Finding IslandWood



IslandWood is located on Bainbridge Island in Puget Sound. Can you draw the route you took to get here?

# Gear Stewardship

Use this page to record what gear you have borrowed so it will be easier to collect it to return on departure day.

Place a ✓ in the box of borrowed items:

- ◇ Rain Pants
- ◇ Rain Jacket
- ◇ Backpack
- ◇ Gloves
- ◇ Socks
- ◇ Fleece
- ◇ Hat
- ◇ Water bottle
- ◇ Other:

\_\_\_\_\_



Ways to be a good steward of your gear:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. Make sure it is all returned so others can borrow it later.

**Before returning gear, please:**

- Empty all pockets
- Turn gear right side out
- Empty water bottles & unscrew the lids
- Empty and shake out backpacks
- Clip or tuck gloves together

# Welcome to IslandWood!



خوش آمدید<sup>1</sup>

2. Welcome

3. Bem-vindo

4. Simadda

5.

ברוך הבא

6. Benvenuti

مرحباً<sup>7</sup>

8.

Soo dhowow

9.

欢迎

10.

добро пожаловать

11.

bienvenue

12.

いらっしやい

13. hoan nghênh!

15.

어 오세

14. Bienvenido

17.

ཐུག་པོ་ལོ་གསུམ་གསུམ་།

18. `ubutlačbitubuləd cəl

- 1. Farsi
- 2. English
- 3. Portuguese
- 4. Oromo (Africa)
- 5. Hebrew
- 6. French
- 7. Arabic
- 8. Somali
- 9. Mandarin
- 10. Russian
- 11. French
- 12. Japanese
- 13. Vietnamese
- 14. Spanish
- 15. Korean
- 16. Tagalog
- 17. Tibetan
- 18. Lushootseed

# Teamwork

“I am a part of Team \_\_\_\_\_.”



What does teamwork mean to me?

I can support my community by:

From my community, I need support like:

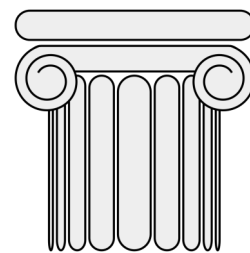
|                       |  |
|-----------------------|--|
| Invertebrate          | An animal having no backbone, often possessing an exoskeleton, such as a shell of a crab.  |
| Living                | Something is living if it has all five of the following: ability to use energy, ability to reproduce (babies or seeds), ability to interact with its environment, cellular organization, and ability to make waste products                                      |
| Living Machine        | An earth-friendly, waste water treatment system. It has many mini-ecosystems that eat or break down waste and produce clean, though not drinkable water.   |
| Macro-Invertebrate    | An animal that is large enough to be seen without magnification and has no backbone  |
| Mean                  | The sum of all values in a set of data, divided by the number of values. Known as average.   |
| Measured Variable     | In a field investigation, the measured variable is the value that is determined—or measured—for each instance of the changed variable. E.g. number of crabs (at each location), number of owl calls, etc. The measured variable is always recorded in the field. |
| Nocturnal             | Active at night  |
| Non-Living            | “Non-living” or “never-living” parts of an ecosystem. The object has never had the ability to carry out the life functions. E.g. light, air, water   |
| Organism              | Anything that is alive or was alive, such as plants, animals, fungi, and bacteria  |
| Precipitation         | Water reaching Earth’s surface by falling either in a liquid or solid state, such as rain or snow.   |
| Predator              | An organism that hunts and kills its food  |
| Prey                  | An animal targeted by a predator for food.   |
| Producer              | Organism that is able to make its own food from the energy of the sun (green plants)   |
| Researchable Question | A question that can be answered without a test or experiment, using information sources such as books, field guides, internet, etc.  |
| Ravine                | A steep sided valley formed by the erosion of running water  |
| Resource              | Anything that can be used by an organism   |
| Scavenger             | An organism that eats the abandoned food of other organisms, and rarely kills its own food   |
| Stewardship           | Action that arises from caring and informed relationships in one’s natural and cultural communities  |
| Waste                 | Garbage or trash; material discarded as worthless or useless   |
| Watershed             | All land area that drains into a particular body of water  |

# IslandWood Vocabulary

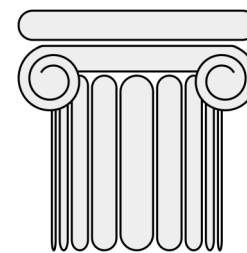
|                  |   |
|------------------|---|
| Abiotic          | “Non-living” or “never-living” parts of an ecosystem. The object has never had the ability to carry out life functions. E.g. light, air, water  |
| Adaptation       | The change over time of the structure, function, behaviour, or habitat of an organism, which allows it to better survive in an environment.   |
| Biodiversity     | The variety of life on earth  |
| Biotic           | “pertaining to life” Anything that is alive, was alive, or is part of something that was alive  |
| Bog              | A area of soft, spongy water saturate ground with a build-up of sphagnum moss and is very acidic. No streams run in or out of a bog.  |
| Changed Variable | In a field investigation, we look for many instances that have something in common, which is the changed variable. E.g. location, distance from a tree, etc. This is the value that is recorded during the planning phase of the investigation. |
| Compost          | The result of controlled decomposition of organic material such as leaves, food, and garden waste. It is often used to enrich soil in gardens.  |
| Consumer         | Organism that cannot make its own food and relies on other organisms for food.  |
| Dead             | An object that was once alive. A leaf or shell would not be “dead” because it was part of a living organism, but it is still considered biotic since it was part of an organism.  |
| Diurnal          | Active during the day   |
| Ecology          | Study of the interconnecting relationship between organisms and the environment   |
| Ecosystem        | A community of living organisms together with non-living things, functioning as a unit  |
| Environment      | All the parts of a place: abiotic, biotic, and cultural   |
| Erosion          | The process by which material is worn away, such as by wind or water flow   |
| Estuary          | A place where freshwater meets the ocean (saltwater) resulting in mixed water   |
| Food Web         | Feeding relationship in communities that displays the flow of energy and materials from producers, consumers, and decomposers, and scavengers   |
| Habitat          | The location that an organism or community of organisms lives; their home, where they are able to find water, food, shelter, and space  |
| Invasive Species | Species that have been transported, accidentally or purposefully, from their natural setting and they out compete for space with native species (E.g English Ivy, etc.)   |

How can you be a steward at \_\_\_\_\_ ?

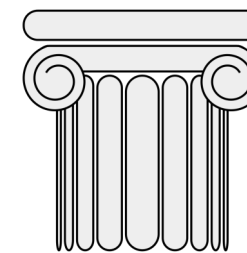
# Stewardship



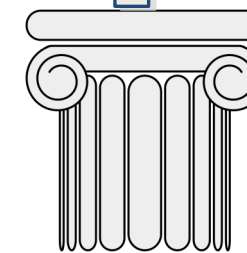
**Embrace  
Adventure**



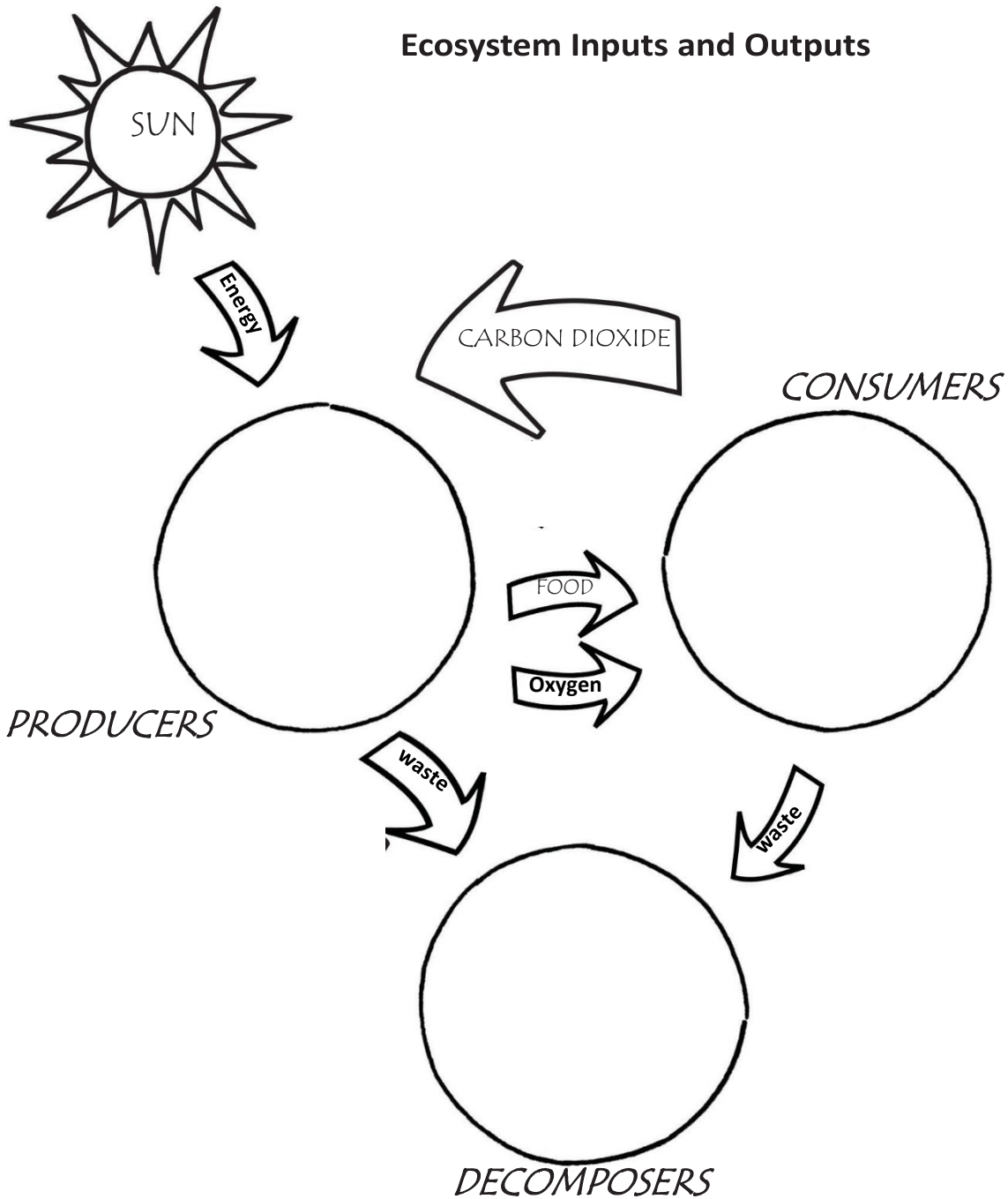
**Help the  
Environment**



**Exploring Here  
and There**



**Living and  
Learning in  
Community**



## Ecosystem Inputs and Outputs

## Fauna at IslandWood: The Consumers

Put a ✓ by any consumer you saw this week.

### Birds

- Barred Owl
- Osprey
- Bald Eagle
- American Crow
- Spotted Towhee
- American Robin
- Song Sparrow
- Pileated Woodpecker
- Common Raven
- Great Blue Heron
- Belted Kingfisher
- Mallard
- \_\_\_\_\_

### Mammals

- Douglas Squirrel
- Townsend Chipmunk
- Mole
- Raccoon
- Black Tailed Deer
- River Otter
- Coyote
- Human
- \_\_\_\_\_

### Decomposers

- Fungus
- \_\_\_\_\_

### Invertebrates

- Shore Crab
- Barnacle
- Dragonfly
- Backswimmer
- Mosquito
- Banana Slug
- \_\_\_\_\_

### Amphibians & Reptiles

- Pacific Tree Frog
- Rough Skinned Newt
- NW Garter Snake
- \_\_\_\_\_

Draw or describe a consumer you saw this week:

# Flora at IslandWood: The Producers

Put a ✓ by any plant that you learned about.

## Trees

- Douglas Fir
- Western Redcedar
- Western Hemlock
- Big Leaf Maple
- Red Alder

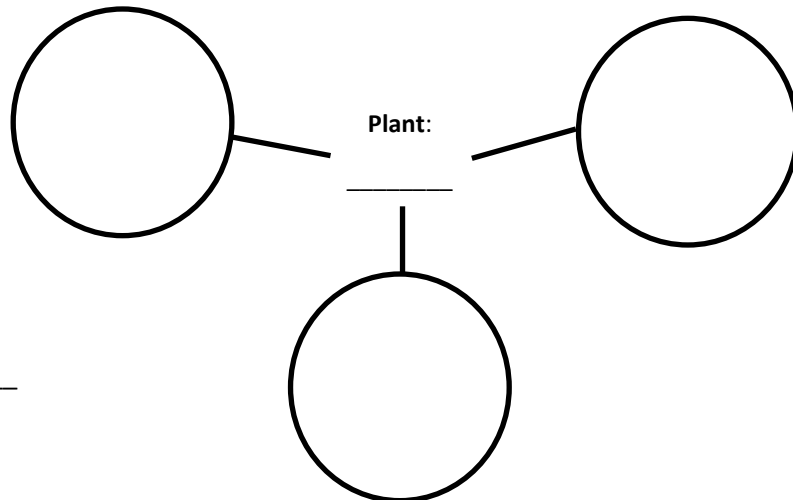
## Shrubs & Ferns

- Snowberry
- Salal
- Evergreen Huckleberry
- Red Huckleberry
- Oregon Grape
- Salmonberry
- Himalayan Blackberry
- Ocean Spray
- Sword Fern
- Licorice Fern
- Stinging Nettle
- Horsetail
- Stinky Bob
- Trailing Blackberry
- \_\_\_\_\_

What plant did you teach others about? \_\_\_\_\_

Draw or describe your plant here:

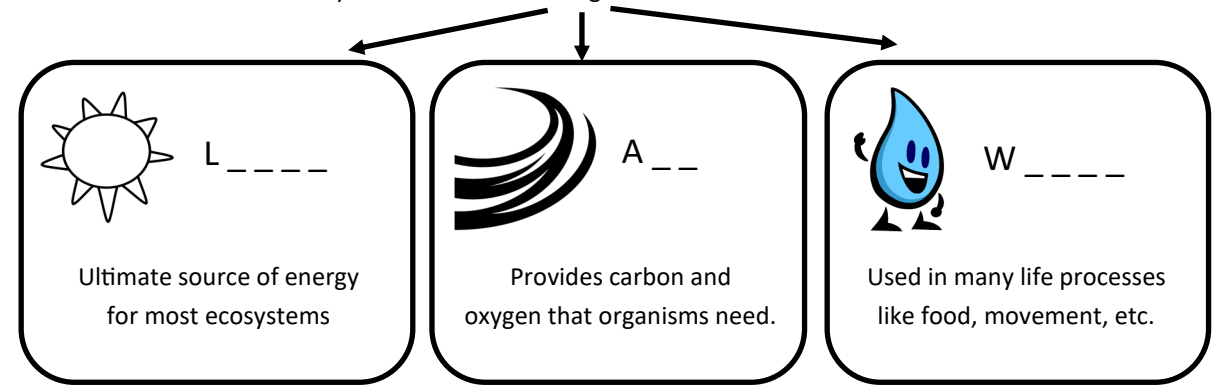
What are three unique facts or uses of your plant:



# Roles in an Ecosystem

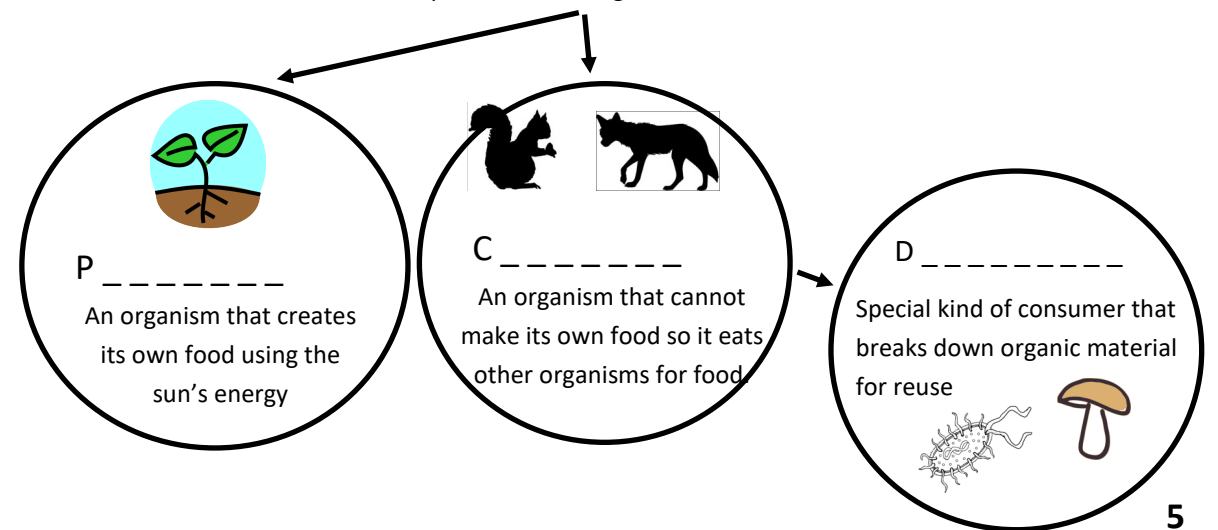
## Abiotic:

Means "not of life." These are things that are needed in all ecosystems but are not living and have never lived.



## Biotic:

Means "of life." These are things that are alive, once were alive, or are part of something that is or was alive.



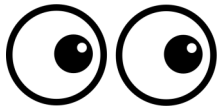
# Ecosystem Comparisons

By listening, I hear...



shutterstock - 219495679

By watching, I see...



By sniffing, I smell



shutterstock - 31396275

By touching, I feel



I wonder about...



|  |  |
|--|--|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

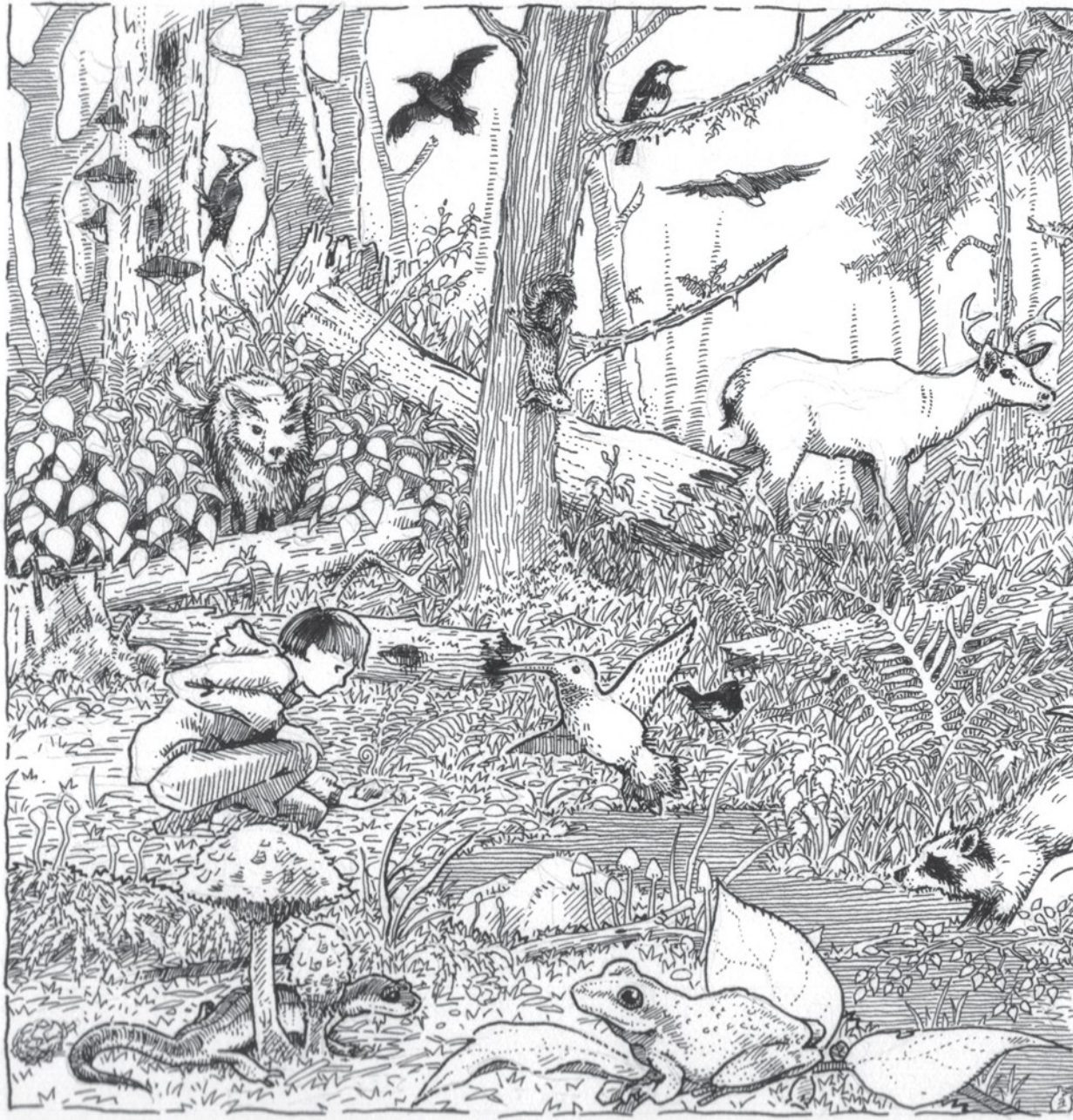


Classify each living thing as one of the following:

(P) - Producer (C) - Consumer (D) - Decomposer

|                |   |
|----------------|---|
| <b>Mammals</b> | <p>Can you find a...</p> <ul style="list-style-type: none"> <li>Black-tailed deer</li> <li>Douglas Squirrel</li> <li>Raccoon</li> <li>Coyote</li> <li>Little Brown Bat</li> <li>Humans</li> </ul>                             |
| <b>Birds</b>   | <ul style="list-style-type: none"> <li>Rufous Hummingbird</li> <li>Spotted Towhee</li> <li>Barred Owl</li> <li>Steller's Jay</li> <li>Raven</li> <li>Bald Eagle</li> <li>Pacific Wren</li> <li>Pileated Woodpecker</li> </ul> |
| <b>Plants</b>  | <ul style="list-style-type: none"> <li>Western Redcedar</li> <li>Douglas Fir</li> <li>Salal</li> <li>Sword Fern</li> <li>Licorice Fern</li> </ul>   |
| <b>Other</b>   | <ul style="list-style-type: none"> <li>Mosses</li> <li>Lichen</li> <li>Pacific Tree Frog</li> <li>Salamander</li> <li>Swallowtail Butterfly</li> <li>Shaggy Parasol Mushroom</li> </ul>                                       |





|  |  | School/Neighborhood |
|--|--|---------------------|
|  |  |                     |
|  |  |                     |
|  |  |                     |
|  |  |                     |
|  |  |                     |

### Example Investigation:

What is the relationship between Barred Owl Calls and location at IslandWood?

(measured variable)                      (changed variable)

| Location at IslandWood | Number of Barred Owl Calls heard in 20 seconds |          |          |         |
|------------------------|--|----------|----------|---------|
|                        | Trial #1                                       | Trial #2 | Trial #3 | Average |
| Mac's Pond             | 1  | 1        | 1        | 1       |
| Forest                 | 2  | 3        | 2        | 2       |
| Blakely Harbor         | 0  | 0        | 0        | 0       |

### Conclusion:

*(Answer the question. Include statements about the lowest and highest data.)*

We heard more owl calls in the Forest than anywhere else with an average of 2 Barred Owl calls in 20 seconds. We heard the fewest owl calls at the harbor with an average of 0 Barred Owl calls in the time measured. Therefore, the better place to find owls is in the forest.

### Next Steps:

Does the time of day affect this? Where is Barred Owl food found?

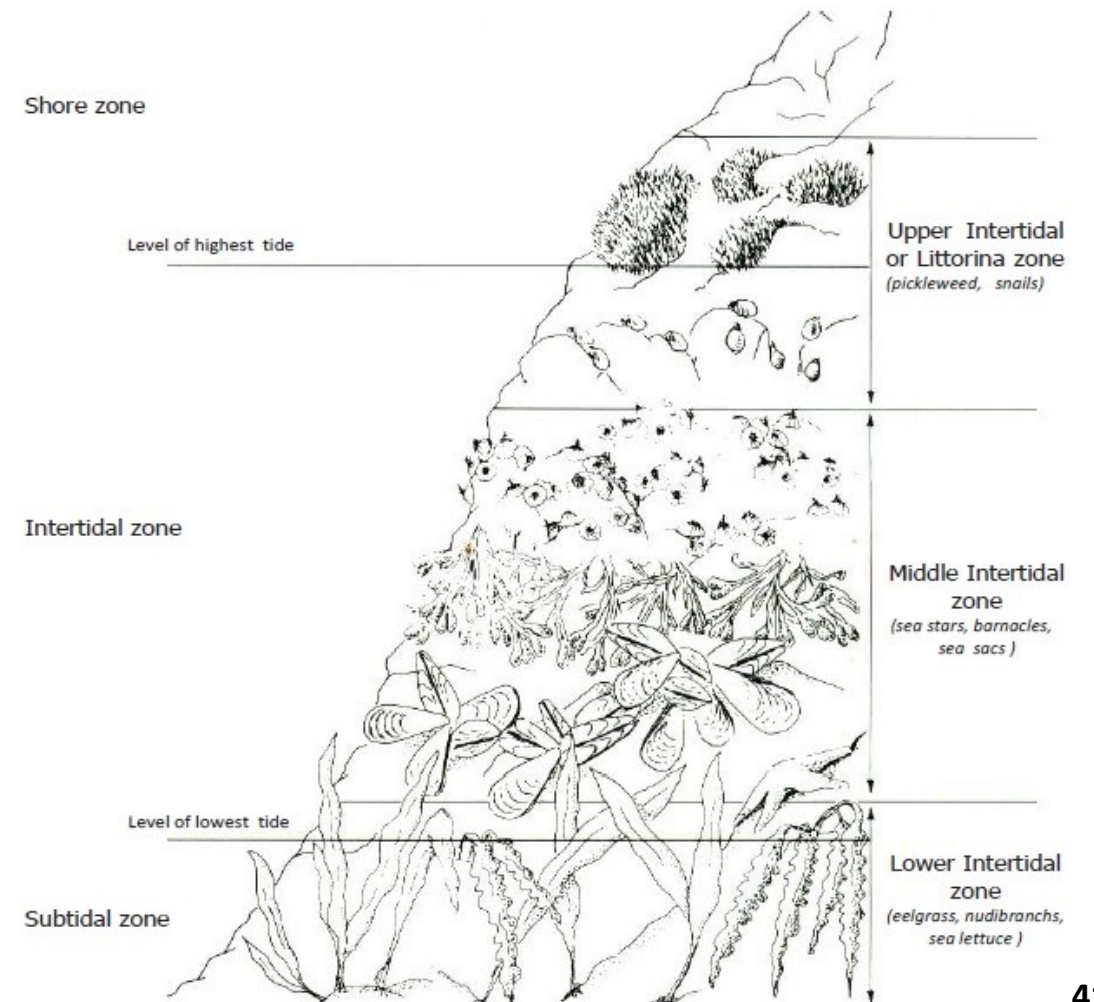
## Tidal Zones

***When you first arrive at the harbor, place a marker (like a stick) in the ground at the edge of the water.***

Is the tide coming in or going out?

How far has the water moved from the marker (stick) after 5min, 20min, etc.?

How does this change impact the organisms here?



# Blakely Harbor Scavenger Hunt

**Can you find me? I'm alive so be careful!**

- A Producer *(an organism that uses energy from the sun to make food)*
- A Bivalve Consumer *(an animal with two paired shells)*
- A Univalve Consumer *(an animal with one shell)*
- An Invertebrate *(an animal with no backbone)*
- A Vertebrate *(an animal with a backbone)*
- A rock, shell, or wood with a living plant or animal on it.

Draw the producer:

Draw 1 of the consumers:

## Evidence of culture

- Can you find evidence of something made by humans?
- Where do you see positive influence or impact by humans?

# Planning an Investigation

## After noticing, I wonder about...?

(Write any question that comes to mind about what you noticed)

A wonder we can investigate here and now is...

Our changed variable:

Our measured variable:

How can we do the investigation?

# Investigation

What is the relationship between \_\_\_\_\_ and \_\_\_\_\_ ?

| (changed variable) | (measured variable) |         |         |         |
|--------------------|---------------------|---------|---------|---------|
|                    | Trial 1             | Trial 2 | Trial 3 | Average |
|                    |                     |         |         |         |
|                    |                     |         |         |         |
|                    |                     |         |         |         |

**Conclusion:**

*(answer the question with statements about the lowest and highest data)*

Blakely Harbor in 1903



Blakely Harbor in 2015



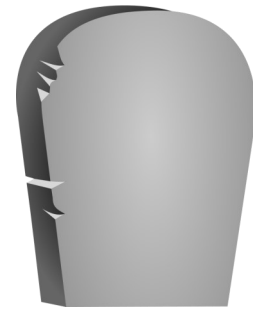
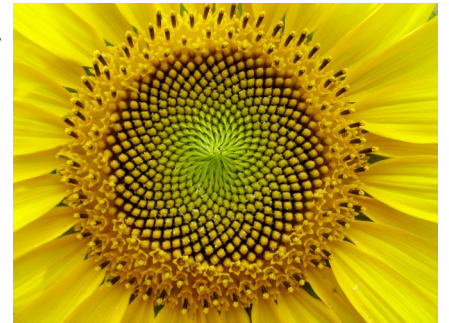


# Investigation

What is the relationship between \_\_\_\_\_ and \_\_\_\_\_ ?

| (changed variable) | (measured variable) |         |         |         |
|--------------------|---------------------|---------|---------|---------|
|                    | Trial 1             | Trial 2 | Trial 3 | Average |
|                    |                     |         |         |         |
|                    |                     |         |         |         |
|                    |                     |         |         |         |

What patterns do you notice in the ways that graves are arranged? Explain the patterns.



Describe an interesting stone you found.

Use this space below for a stone rubbing:

## Conclusion:

*(answer the question with statements about the lowest and highest data)*

# Blakely Cemetery Historical Research



Find a stone with a language other than English. Can you guess the language?

Find a stone that shows a profession. What was it? How do you know?



Find a stone for someone born in another country. Which country?



Find a stone for someone who served in a war. Which War?



Find a memorial for a local disaster. Describe.



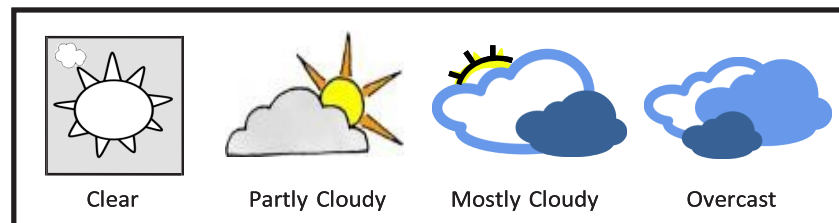
# Weather

| Date/Time | Place | Temp. | Cloud Cover | Wind | Precipitation |
|-----------|-------|-------|-------------|------|---------------|
|           |       |       |             |      |               |
|           |       |       |             |      |               |
|           |       |       |             |      |               |
|           |       |       |             |      |               |

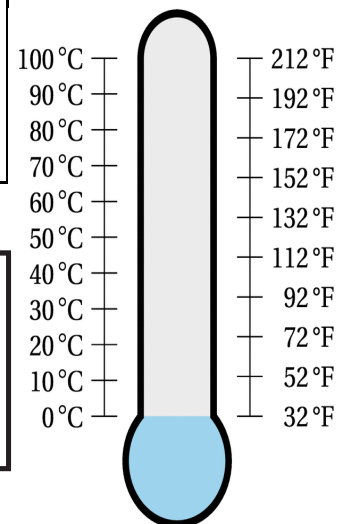
## Wind (Beaufort Scale)

| Calm               | Light        | Moderate                           | Fresh                                | Strong                    | Gale                                      |
|--------------------|--------------|------------------------------------|--------------------------------------|---------------------------|---|
| No movement, still | Felt on face | Leaves lifted, small branches move | Small trees and leaves begin to sway | Larger tree branches move | Whole trees in motion, felt while walking |

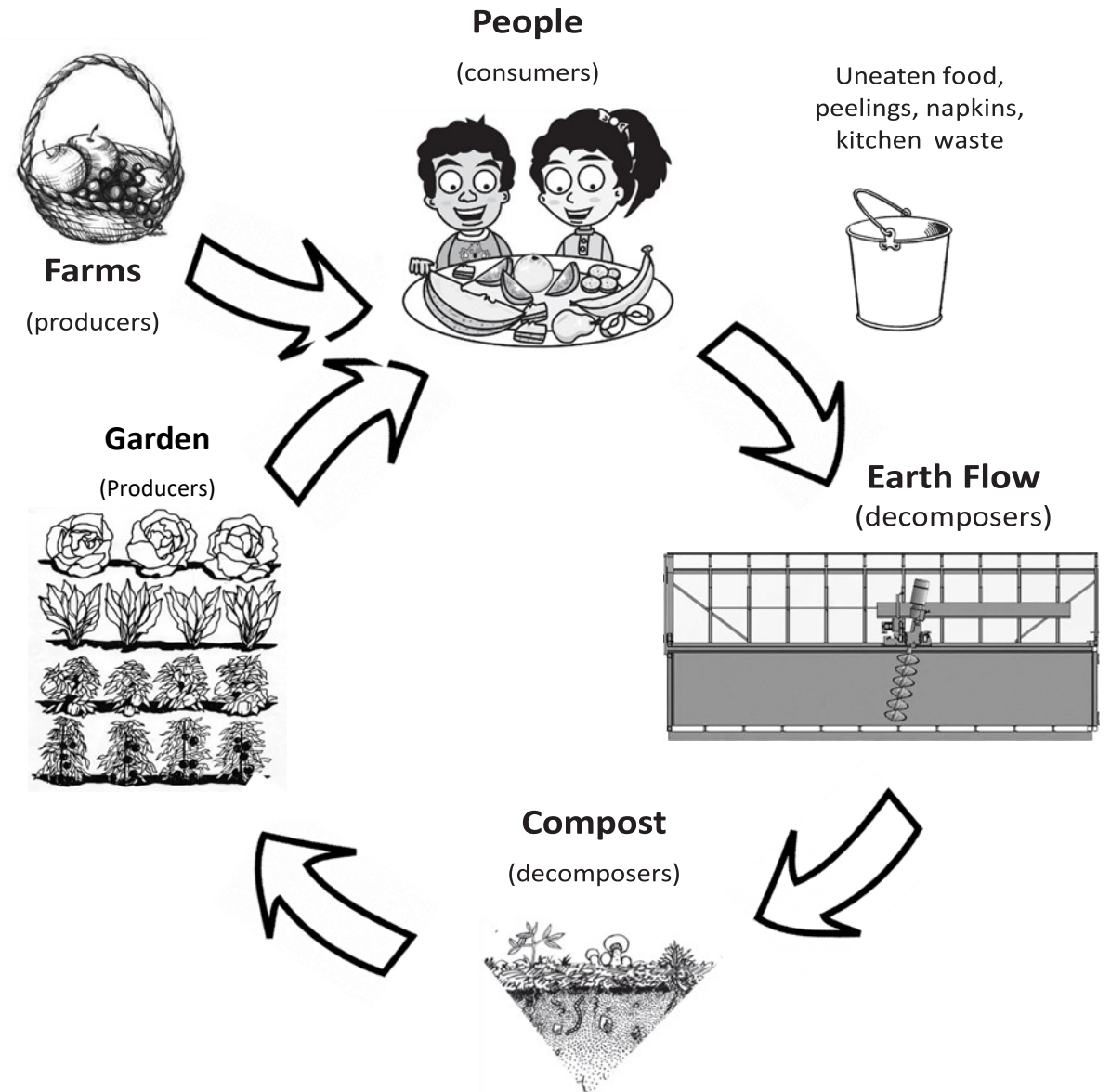
## Cloud Cover



## Temperature



# IslandWood's Food System





# Garden Scavenger Hunt



Find and describe a plant that you have eaten before.  
How was it prepared when you ate it?

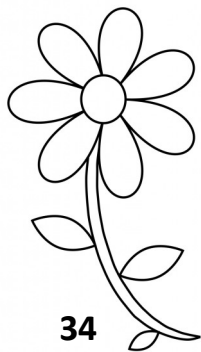
Find and describe evidence of a pollinator in the garden. How do the pollinator and the plant help each other?



Find and describe two different types of seeds in the garden.



Find and draw three different leaf shapes:



Three empty rounded rectangular boxes arranged horizontally, intended for drawing different leaf shapes.

*Seed Dispersal: poppers, droppers, floaters, fliers, grabbers, & passers*



# Aquatic Macroinvertebrates

**Keep a tally of what you find**

Blackfly Larva

Aquatic worms

Midge larva

Backswimmer

Leech

Damselfly nymph

Dragonfly nymph

Clubtail dragonfly nymph

Clam

scud

Cranefly larva

Beetle larva

Caddisfly larva

Caddisfly casing

Planaria

Water penny

Riffle beetle adult

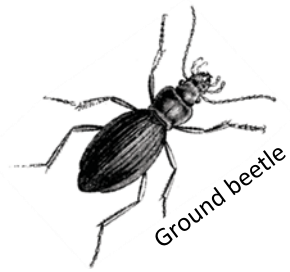
Mayfly

Stonefly larva

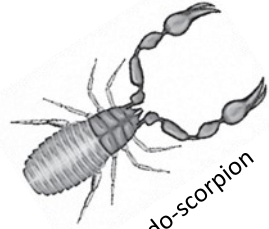




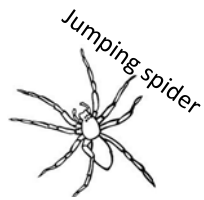
# Common Soil Organisms



Ground beetle



Pseudo-scorpion



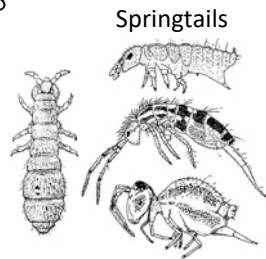
Jumping spider



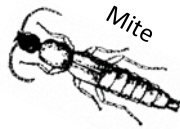
Centipede



Millipede



Springtails

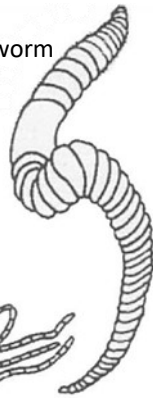


Mite

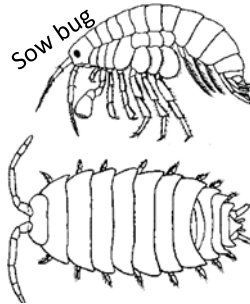
Rove beetle



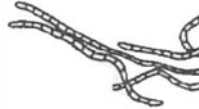
Earthworm



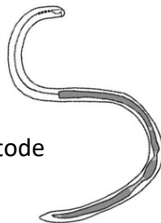
Sow bug



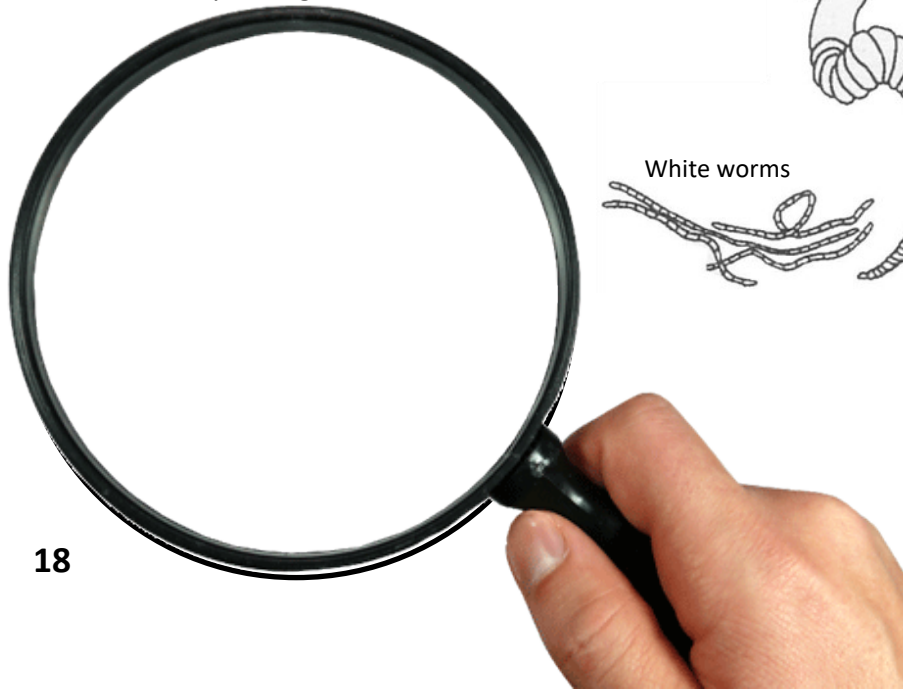
White worms



Nematode



Draw your organism here...



*Did you know... a plant can be a consumer?!?! In Charlie's Bog, tiny sundew plants trap insects using the sticky hairs on their round leaves (the insects provide nutrients that are difficult to find in the bog).*



*How does a banana slug protect itself from predators?*





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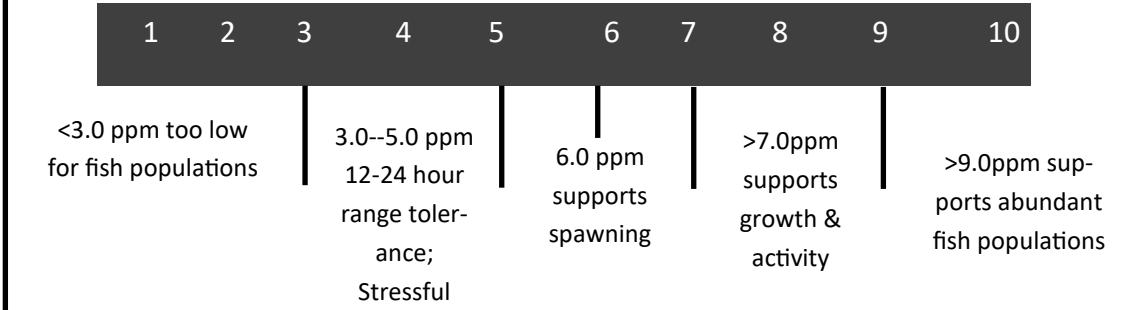
**Temperature Ranges for Aquatic Animal Life**

Temperature is the degree of hotness of a body of water. Colder water holds more dissolved oxygen.

| Cold Water                                | Cool Water                                | Warm Water | Hot Water                                 |
|---|---|------------|---|
| Below 13°C                                | 13-20°C                                   | 20-25°C    | Above 25°C                                |
| Below 55°F                                | 55-68°F                                   | 68-77°F    | Above 77°F                                |
| Salmon<br>Mayfly<br>Stonefly<br>Caddisfly | Mayfly<br>Stonefly<br>Caddisfly<br>Beetle | Dragonfly  | Deadly temperature<br>for aquatic insects |

**Dissolved Oxygen Limits for Aquatic Animal Life**

D.O. is the amount of oxygen gas dissolved in the water, and it is available for organisms to breathe.



**pH of Common Substances**

pH is the measure of the acidic or basic nature of a solution. Solutions with a pH below 7 are acids, and solutions above 7 are basic. Neutral is pH of 7.

