

# Bio 11: Getting to know Byrne Creek

Name: \_\_\_\_\_

**As a class, we will create a website that showcases the importance and the diversity of the species that live in the Byrne Creek forest.**

It's a big park, so we will divide into teams of 4 to share the task of cataloguing the forest. Each group will collect information about a different type of creature.

## GROUPS:

- 1) Trees: Conifers
- 2) Trees: Deciduous
- 3) Smaller flowering plants and shrubs
- 4) Ferns, Horsetails, & Moss (different phyla!)

## PART 1: Learn about your taxonomic group:

In your team, do some research about your plant category. As you research, be sure to identify terms and concepts you don't fully understand. Research them further, or ask for clarification. This intro page should include the following information:

### Taxonomy / Form & Function:

- Identify kingdom & phylum (get more specific if you can)...
- Explain why these creatures were categorized together. Who belongs in this group? - Who are their close relatives? What sets these creatures apart?
- Consider body structures, biology, environmental needs, etc.  
(Ex: what makes this plant a fern?)

### Ecology:

- Why does the forest need these creatures?
- What role do they play in the food chain?
- Which ecosystem services do they provide? (oxygen, filtering, decomposers, etc)
- Symbiotic relationships (mutualist, commensalist, parasitic)
- Uses (traditional, economic, modern & future)
- What would Byrne Creek forest look like if these species were removed?

**UPLOAD THIS RESEARCH** to your team's front website page. (Google Site)

Be sure to add your **research sources** in the list at the bottom of the page.

## PART 2: Park Survey

We will spend several days in Byrne Creek Park, investigating several ecosystems (as shown on the map). Your team will survey the areas, documenting ALL of the species in your assigned category.

**Step 1: Photographs** (Park time: \_\_\_\_\_)

Take pictures of everything that might be in your category!

Take **several photos** of each species – some close-ups, some involving the surroundings. The photos should be clear, and should highlight details specific to the species (ex: bark, needles, leaf shape, cones, wing shape). You may NOT use Internet photos – take your own shots!

You may wish to take some field notes at this stage (see below)

**Step 2: Identify & Classify** (Computer Lab time: \_\_\_\_\_)

Do your best to find the common name and the proper binomial name of each species. If you can't, give as much detail as you can and explain why. Use field guides to help.

**Step 3: Go back for more details** (Park time: \_\_\_\_\_)

Take your list of species back into the forest. Look for those species and make detailed field notes for each species:

- Which location(s) did you find it in? (match this to your map)
- How frequently was it found in each given area
- Which other species did it grow in/around/with?
- Describe the structures of the organism (leaf shape, stems, colour, wings, etc?).

Give some detail! Take notes as if you were the one writing the field guide

**Step 4: Put it together**

As a group, review your field notes for accuracy.

Add all of your species to your team's web **gallery**, following the guidelines given.

**Step 5: Add some research**

*(ALL RESEARCH MUST BE IN YOUR OWN WORDS. ALL SOURCES MUST BE DOCUMENTED)*

Each person will choose two species from STEP 2 to identify and elaborate on.

Put your initials on each of your personal contributions.

-Identify each species as NATIVE, INTRODUCED, or INVASIVE. Give a bit of its history in the Pacific Northwest.

-Find two interesting facts about each species.

-Identify one or more uses of this species (practical, historical, medicinal, ecosystem services..)

Be sure to include your research sources at the very bottom of the page (APA format or hyperlink is acceptable)

## Bio 11 Assessment Goals:

Name: \_\_\_\_\_

### PLANTS

#### Byrne Creek Forest website

##### ***Topic #1: Classification***

- I can explain the traits that biologists use to classify plants by phylum (what makes a moss a moss?)
- I can make detailed observations (written & photographic) that are useful for identifying my plants
- I can use a field guide to identify species

##### ***Topic #2: Ecology***

- I can identify general uses of the plants in my phylum
- I can, for specific plants, give some of their history.
- I know their applications/uses in historical and modern contexts
- I know how these plants interact with other species (whether those relationships are positive or negative)

#### Plants writing assignment

##### ***Topic #3: Evolution/Form & Function***

- I can explain how each major group of plants
  - gets and keeps water
  - reproduces
- I can explain how the adaptations above help plants survive in their environments, and why certain structures may have evolved over time as plants moved from water onto land



**BYRNE CREEK PARK: FIELD NOTES**

**Group:** \_\_\_\_\_

<b>Plant name or reference</b>	
<b>Photos</b> <i>(ex: leaves, bark, flowers)</i>	<b>Where did you find it?</b> <i>(clearing/forest/ravine)</i> <b>How many were there?</b> <i>(density)</i> <b>What did it grow on or near?</b>
<b>Descriptions</b> <i>(distinctive features, height, etc)</i>	
<b>Plant name or reference</b>	
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<b>Descriptions</b> <i>(distinctive features, height, etc)</i>	

Bio 11: Byrne Creek Forest

Name: \_\_\_\_\_

You posted on either

Go to the OTHER site... choose 2 plant groups different from your own, and answer:

Plant Group 1: \_\_\_ Ferns \_\_\_ Flowers \_\_\_ Deciduous \_\_\_ Conifers \_\_\_ Lichen \_\_\_ Mosses

From the main page, why are these species classified together?

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Identify (and briefly explain) 2 ways that these species are useful to others

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Read through the main page and the gallery. Identify 2 things you learned from this reading that were new to you.

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Plant Group 2: \_\_\_ Ferns \_\_\_ Flowers \_\_\_ Deciduous \_\_\_ Conifers \_\_\_ Lichen \_\_\_ Mosses

From the main page, why are these species classified together?

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Identify (and briefly explain) 2 ways that these species are useful to others

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Read through the main page and the gallery. Identify 2 things you learned from this reading that were new to you.

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What were the strengths of the websites you viewed??

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Has this project made any difference in how you think about/understand the forest ecosystem? Be honest! There is no "right" answer.

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## Bio 11: Plant form & function

Please write paragraph answers to these two questions.  
Most of the information you need should be in your notes.

1. When they attempted to move onto land, plants had to adapt to a world where they weren't constantly surrounded by water. Discuss the evolutionary path of plants with respect to **GETTING AND KEEPING WATER**. Be sure to explain:

- d. HOW early plants (algae, mosses) got & retained water
- e. WHY the early plants would have struggled on land
- f. WHAT the higher order plants developed to help them survive

2. When they attempted to move onto land, plants had to adapt to a world where they weren't constantly surrounded by water. Discuss the evolutionary path of plants with respect to **SEXUAL REPRODUCTION**. Be sure to explain:

- d. HOW early plants (algae, mosses) reproduced sexually
- e. WHY the early plants would have struggled in dry environments
- f. WHAT the higher order plants developed to help them survive

Use this guide to see if your answers are complete:

- Level 2:** *I have identified the structures and methods used by each type of plant*
- Level 3:** *I have explained why/how the structures were/were not well suited to the environmental conditions.*
- Level 3\*:** *I have researched and explained how plants survive in extremely dry environments, like the desert.*

## Bio 11: Plant Extension: Invasive Species

**Question:** *Should we be controlling "invasive" plant species?  
Or should we just accept them as "survival of the fittest"?*

1. Brainstorm a list of things you will need to know to answer this question
2. Where will you go to find reliable information?
3. Map out your ideas as a group. Discuss, and share with other groups.

After this is done...

4. Write a summary of your opinion

Use this guide to see if your answers are complete:

**Level 2:** *I have provided definitions related to this topic.  
I have given an opinion on this topic  
My writing lacks research and explanations.*

**Level 3-3+:** *In addition to definitions, I have presented both sides of the argument, with evidence to support each side. My opinion is supported by research and is clearly articulated. I make strong connections to our learning about Darwinian evolution*

**DUE:**