Unit 1: Biological Diversity *End of Unit Project*

You must choose 1 of these

You may do the chosen project **alone**, with a **partner**, or in a **group of 3**
(Depending on what is allowed for each project)

Description of Project Goals

1. To create a **Calgary Zoo Guide** that reinforces biological diversity concepts covered in this Unit.
2. To design and construct a model of **DNA** – the **Double Helix** model that was developed by ***Watson and Crick***.
3. To design and construct a **Game** that reinforces the concepts of ***Biological Diversity***.

Background:

Calgary Zoo Guide
(Group of 3)

http://www.calgaryzoo.org

There are 82 mammal species in the **Calgary Zoo**. The project you will complete is to provide summary information about 20 of these mammals. Your guide should be easy to read and follow as you tour the zoo. It should be written for the student to use on a learning field trip. It can include activities for each destination area or each individual mammal.

Double Helix (DNA model)
(Alone)

http://www2.mrc-lmb.cam.ac.uk/dna2003/story.html

Watson and Crick developed the Double Helix model of DNA.

Using their initial model, you should develop a 3D model that reflects what they learned about DNA

You can make an edible model if you like and after your presentation you can eat it.

Biodiversity Game
(w/ partner)

http://www.animalgame.com/

The Animals of Alberta game should reflect common animal species that are Native Alberta species.

You should be able to use structural characteristics that will help players to identify the species and learn about it as they play the game

Specifications:

Calgary Zoo Guide
(Manual)

Manual Components:

- Common name
- Scientific name
- Niche
- Variations
- Adaptations
- Symbiotic relationships
- Current Status
- Conservation Program

20 mammals should be identified and presented in the guide in an easy to read and follow format.

Double Helix (DNA)
(Model)

DNA Model

The **Double Helix** 3D model should represent the information presented in each of the textbooks:
SIA p. 39-45
SF p. 46-51

Materials: Open – whatever you think will help you create your model

Size: No higher than 30cm

Labels: Each component part of the DNA model should be labeled, so that you can explain it during your presentation

http://www.miniscience.com/projects/DNAmodel/

Biodiversity Game
(Game)

Your Game should challenge participants to identify animals found in **Alberta** based on their structural characteristics, by using a **Dichotomous Key** format. The game should develop identification strategies incorporated into a game situation.

Materials: Choice of materials and type of game is open *(It doesn't have to be a board game)*

Game should include:

- **20** identifiable **Alberta** animals
- **3D** playing pieces would enhance presentation
- ***Habitat conditions and factors*** that affect the organism's survival and population size
- ***Human actions*** that can **positively or negatively** affect the animal's survival and population size

Evaluation:

Product: (Does it apply scientific principles effectively?)	**Presentation:**		
	Self-Evaluation	Peer Evaluation	Teacher Analysis
60%	**10%**	**10%**	**20%**