Unit # 6

Conservation, Research, Science & the Future

Introduction & Materials:

Introduction:

Our environment's future depends on people and their desire to protect it. This, however, is not something that most kids can grasp, so we will attempt to simplify it in this unit. Conservation is the protection and management or wise-use of natural resources in a way that ensures their presence for the future. In this final unit, students will get a sense of what science is and how we use it to learn about the natural world. More importantly, we will learn what can be done with information gathered about the natural world- like helping large predators survive and thrive. The last unit will be a refresher of some of the information students have learned and recorded in their books. **You will need to cover the Predator of the Day before you conduct the activity** as they will need some of the information to complete the activity.

Materials:

- 1 worksheet for each student
- All 10 station questions printed and cut

Discussion:

Ask each of the following questions first, then write out the definitions. Give students a minute to think and respond. If they are not speaking up, have them turn and talk to a neighbor first.

1. **"Does anyone know what science is?"**

   Science- the method we use to find answers to questions about the physical and natural world

2. **"What is a scientist?"**

   Scientist- A person who uses methods of science to learn about the natural word

3. **"What does a scientist do?" (The answer is research)**

   Research- the collection and analysis of information about a particular subject

4. **"If a scientist does Cougar research, what does he or she do with the information?"**

   A: Cougar research can teach us many things about the wild cats, but some of the most important questions it can answer are, How many are there? Where are they? and what threatens them? With this information we can find ways to protect them. **This is called conservation.**

   Conservation- The protection of things found in nature. Examples- soil, water, minerals, wildlife & forests

Before you begin the activity, brainstorm a list of words and animals you have covered in all of the lessons. This will help them with the activity. Depending on the ability of your group, you may want to make sure to include the following, as they are the 10 needed for the activity:

Adaptation, Cougar, Predator, Extinct, Osprey, Prey, Research, Scavenger, Talons, Camouflage

Activity:

For this activity we are going to solve an encryption! This will use some of the information that students have learned. Each student should have their book to use as a tool to help answer questions at the 10 stations. The student worksheet is found at the end of this document along with the 10 station questions. Each student (or pair) needs a copy of the student worksheet. Correctly answering each question will give them a letter to match with that station's number. At the end they will fill in the blanks by matching the correct letter and number to discover what it says.

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Activity continued:

Setup:

You will need to set up 10 stations around a classroom or outside. You can set this up as a scavenger hunt, or however you wish. Hiding at least one in a tricky place will help slow down the quicker students so the group finishes closer together. The following pages have the questions for each station. Cut each sheet into individual Station #'s and place them wherever you wish. Stations do not need to be visited in order as long as students visit all of them.

The answer key is below for you to help any students who may get stuck or have the wrong answer. The questions are fairly simple, but some students may need help reading questions and finding the answers in their books, so assist as necessary. Some students may do better in pairs to help each other, but that is up to you to decide. Only one student or pair may be at a station at a time (so that they do not overhear answers, copy, or disrupt others from doing their own thinking).

Before you begin, each student needs a handout, a writing utensil, and an understanding of the rules:

1. Only one person (or pair) at a station at a time
2. Do not shout out or share answers
3. When you have collected all the letters sit quietly and solve the encryption
4. Wait until all other students have finished before sharing the answers - this is not a race!

Explain the format of the questions to them before you begin: "Each station will ask you a question. The answer to that question will be one word (it will be a word that we have discussed). Once you answer that question, it will ask you another question about that word to give you the letter that matches the number of that station. For example, if we are at station 20 and the question says: A white fluffy thing we find in the sky is a_____? *Cloud.* This word starts with a ____? "C." So C is our answer to station number 20."

Key:

1= A	6= P
2= C	7= R
3= D	8= S
4= E	9= T
5= O	10= U

P	R	O	T	E	C	T		
6	7	5	9	4	2	9		
		O	U	R				
		5	10	7				
P	R	E	D	A	T	O	R	S
6	7	4	3	1	9	5	7	8

When they have all completed the encryption they should all have uncovered the phrase "Protect Our Predators!" Quickly go through the following questions and statements giving them ample time to think and answer:

1. "What does protect our predators mean?"
2. "Can you think of any ways people can help protect predators?

Examples: changing hunting laws (cougars and wolves are trophy hunted), setting aside or protecting their habitat and food sources.

3. "Some people think we should try to protect predators and some do not, everyone has a right to their own opinion. What is your opinion? Do you think we should protect predators?" When they give you an answer follow it with why or why not? There is no wrong opinion so long as there is reasoning behind it!

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Unit # 6 3
Conservation, Research, Science & the Future

Debrief:

To complete the student's predator book, we will have them finish how they started. Using a white board or large paper, make two columns, one to record *Keywords* and the other for *Examples*. Prompt them with the question, **"What are some examples of predators and what special adaptations do they have?"** Have them raise their hands so that you can record everyone's ideas. If they are hesitant, remind them that the words they brainstormed in the first unit are on page #3, and tell them we are trying to add what we have learned.

Keywords
large, hunt, fangs, claws, attack, stalk, pounce, talons etc.
Examples
lion, tiger, bear, wolf, shark, etc.

When they have exhausted their brains to come up with as many *Keywords* and *Examples* as possible, have them copy down the new list in their book on page #22.

After they finish copying the words down, there is one final task on page #23 to complete: The 3 coolest things I learned about predators are... Give them some time to think and write down their answers. **When they are done, ask each student to share one of their three coolest things with the class and write them on the board.**

Take a picture or record both the "Keywords and Examples" list and the "Coolest Things" that students generate. **Please email the photo/ list to us at info@cougarfund.org. Put "Final Assessment" in the subject line. Include in the body of the email: your name or organization name, city & state, and # of students that participated. We will compare this information with your "Initial Assessment."**

Extension:

Do some research about your local area and what resources may be available to you. Opportunities involving predators may not be found everywhere, but they are often featured at science centers, natural history museums, or nature centers. A group you may be able to find in your area is a bird rehabilitation center. These facilities often have birds that cannot be released back into the wild and are kept for educational presentations to the public. Additionally, look into local research that may be going on in your area. This could be wildlife, forestry, water, etc. See if a group would be willing to come give a presentation about the species they study or the role in the ecosystem their research looks at. If the science is too complex, have them focus on how their research subject interacts with it's ecosystem or how people affect it. A presentation from a scientist can be exciting no matter what the topic, especially if they are willing to talk about what it is like to be a scientist and why and how they became one!

Predator of the day:

#6: The Osprey! Refer to the Predator of the Day packet

Photo Credit: Seth Heeter

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Station #1

Physical or behavioral traits that help an animal survive are called: _____

Hint: talons, camouflage, opposable thumbs are all _____

The first letter of that word is: _____

Station #2

The track below belongs to a: _____

(The answer is just one of the names for this animal; it is also called mountain lion, puma, panther, painter, catamount, and ghost cat)

The first letter of it's name is: ____

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Station #3

We have been learning about a group of prey-eating animals called: _____

Hint: Bears, Wolves, Eagles, and Lions are all_____

What is the 4th letter in that word? ____

Station #4

When there are no more living animals of a species, the species is: _____

The first letter of that word is: ____

Station #5

A species of bird that we learned about that *only* eats fish: _____

Hint: Today's predator of the day

The first letter of that word is: ____

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Station #6

Animals that are hunted, killed, and eaten by other animals are called: _____

The first letter of that word is: ____

Station #7

The collection of information and data about a particular subject is called: _____

Hint: Cougar _____ helps us learn about their lives

The first letter of that word is: ___

Station #8

An animal that eats animals/meat that was already dead is called a: _____

The first letter of that word is: ___

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Station #9

Eagles and Osprey use their _____ to capture, kill, and carry prey.

The first letter of that word is: ____

Station #10

Using body colors, shapes, and patterns to blend in with the surroundings is called: _____

The 5th letter of that word is: ____

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STUDENT WORKSHEET

At each station, you will answer question(s) and discover the secret letter for that station. Fill in the letters below with their matching station number.

1= _____

2= _____

3= _____

4= _____

5= _____

6= _____

7= _____

8= _____

9= _____

10= _____

Using the letters you have unlocked at each station, match the letters to the numbers below to crack the code and discover the secret message!

____	____	____	____	____	____	____
6	7	5	9	4	2	9

____	____	____
5	10	7

____	____	____	____	____	____	____	____	____!
6	7	4	3	1	9	5	7	8

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