COLUMBUS ZOO AND AQUARIUM

ZOO CAREERS

FOR MIDDLE & HIGH SCHOOL STUDENTS

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WELCOME TO YOUR ZOO CAREER EXPLORATION GUIDE

Dear Teachers and Students,

We're thrilled to have you use this resource to explore the many exciting career opportunities available at the Columbus Zoo and Aquarium. Whether you're interested in caring for animals, studying conservation, preparing diets, or designing habitats, this guide will help you discover what it takes to be part of a zoo team.

This guide is designed to support self-guided learning during a Zoo visit, classroom exploration, or a deeper dive into real-world careers. Inside, you'll find:

- **Career Spotlights:** Learn what it's really like to work as a zookeeper, veterinarian, nutritionist, conservation biologist, or exhibit designer through interviews.
- **Student Activities:** Each career section includes an activity to guide your observation, thinking, and reflection.
- **Career Planning Tools:** Reflect on your strengths and interests, compare career paths, and begin mapping out your own journey.
- **Student & Teacher Resources:** Explore blog and video links, internship opportunities, a glossary, standards alignment, and answer keys.

How to Use This Handbook

- This guide is organized by career.
- **Preview the Careers:** Preview the career options, then read the interview for that career.
- **Observe & Explore:** Use the activities during your Zoo visit or in class to think like a real zoo professional.
- **Reflect & Plan:** Use the reflection and planning pages to connect what you've learned to your own future goals.

We hope this guide helps you see zoos as more than places to visit, and inspires you to imagine yourself in a future that supports animals, people, and the planet.

Happy exploring,

The Conservation Education Team
Columbus Zoo and Aquarium

ANIMAL CARE

You may have heard the term ‘zookeeper’ before, but we use ‘animal care professional’ to better reflect the wide range of skills and responsibilities involved in caring for animals.They feed, clean, train, and monitor animal health and behavior while building trust and providing enrichment. Their close observations are key to keeping animals healthy and safe.

CAREER SPOTLIGHT INTERVIEW: ANIMAL CARE

Featuring voices from Animal Care staff at the Columbus Zoo and Aquarium . For more specific Zookeeper interviews, check out the Starting Your Zoo Career page on our website.

Q: What does a Zookeeper do?
Zookeepers are the frontline caregivers for animals at the Zoo. They feed, clean, train, and observe animals, helping them stay healthy and active. Keepers also build strong relationships with animals and contribute to guest education and conservation efforts.

Q: What does a typical day look like?
Zookeepers work year-round—weekends, holidays, rain or shine. A typical day includes preparing and delivering diets, cleaning habitats, checking for safety issues, observing animal behavior, providing enrichment and training, and writing care notes or reports. They may also assist with medical procedures, habitat maintenance, and educational programs.

Q: What kind of education or experience is needed?
Most zookeepers have a degree in Zoology, Animal Science, Biology, or a related field. Hands-on experience is essential. Volunteering, internships, and animal handling (such as farm work, wildlife centers, or vet clinics) are common entry points. Many zookeepers begin as seasonal or part-time workers before moving into full-time roles.

Q: What skills are important in this job?
Observation, physical stamina, time management, communication, flexibility, and patience are essential. Keepers also need strong teamwork skills, creative problem-solving abilities, and a willingness to learn new techniques and information throughout their careers.

Q: What advice would you give a student interested in this job?
Start gaining experience early by volunteering with animals in any setting (pet shelters, stables, vet clinics, or wildlife centers). Be persistent. Zookeeping is competitive, and it may take time to earn a permanent role. Learn from every opportunity and be open to working with animals you didn't expect to love.

Q: How does this job impact your personal life?
Animal care is a year-round responsibility. Most zookeepers work weekends, holidays, and early mornings. It can be physically and emotionally demanding, and schedules may not always align with family or friends. However, most keepers say the job is incredibly rewarding and worth the commitment.

Q: What is the best part of the job?
Building trust with animals, celebrating milestones like births or training breakthroughs, seeing animals thrive because of your care, and helping guests connect with wildlife in meaningful ways.

Q: What is the hardest part of the job?
Saying goodbye when animals pass away or move to other facilities. It can also be physically demanding and emotionally stressful, especially during medical situations. Keepers often wish they had more time and resources to give the animals everything they envision.

Q: How does this job support animal conservation?
Zookeepers help educate the public about wildlife and inspire conservation action. They support Species Survival Plans, contribute to research, and help raise funds for animals in need around the world. By caring for animals here, they also help protect their counterparts in the wild.

Q: What is the most important thing you do for animal wellbeing?
Keepers provide consistent care, enrichment, and training that improve animals' physical and mental health. They observe animal behavior closely, adjust care as needed, and work closely with veterinarians and curators to ensure every animal's needs are met.

Name: _____

ANIMAL CARE EXPERT

Learn how staff support animal health and well-being by observing behavior, managing habitats, and providing daily enrichment and care.

	ANIMAL 1	ANIMAL 2

BEHAVIOR

The Zoo focuses on understanding animal behaviors; this helps us animal care in native ranges, too. Pay attention to how animals interact with each other and their environment.

ANIMAL 1	ANIMAL 2
How do the animals interact with their environment and each other?	**How do the animals interact with their environment and each other?**
What signs are present that the animal is healthy?	**What signs are present that the animal is healthy?**

HABITAT DESIGN

The Zoo focuses on creating habitats similar to the animals' native environment. Pay attention to design features that support animal well-being and comfort.

ANIMAL 1	ANIMAL 2
Features available to meet this animal's physical and mental needs:	**Features available to meet this animal's physical and mental needs:**
Enrichment items:	**Enrichment items:**

NUTRITION

The Zoo focuses on providing balanced diets tailored to each animal's needs. Pay attention to what animals eat and how it is presented to encourage natural behaviors.

ANIMAL 1	ANIMAL 2
What nutritional needs can you observe being met?	**What nutritional needs can you observe being met?**
What natural behaviors are encouraged?	**What natural behaviors are encouraged?**

Name: _____

ANIMAL 1

ANIMAL 2

ENRICHMENT

The Zoo focuses on providing enrichment to keep animals mentally and physically stimulated. Pay attention to the activities or objects that encourage animal participation.

What do you notice in how they use space, objects, or enrichment items? What types of enrichment do you see being used?	**What do you notice in how they use space, objects, or enrichment items? What types of enrichment do you see being used?**
What might this tell you about their needs or personalities?	**What might this tell you about their needs or personalities?**

REFLECTION

What do you think are the most important responsibilities of the animal care team in ensuring well-being?
How do you think teamwork between zookeepers, veterinarians, and other staff contributes to animal care?
What skills or personal strengths do you think are essential for a career in animal care and well-being, and why?

EXTENSION ACTIVITY- CREATE AN ETHOGRAM

Want to dig deeper into the work of animal care professionals? Try creating an ethogram—a tool zookeepers and researchers use to observe and track animal behavior. By recording how animals spend their time, you can better understand their needs and how to support them.

Use the ethogram worksheet to guide your observations and discover more about the daily lives of your favorite animals!

Name: _____

EXTENSION ACTIVITY: CREATE AN ETHOGRAM

An ethogram is a tool used by animal care professionals to observe and record animal behavior. By completing your own ethogram, you'll practice a skill used by zookeepers and researchers to ensure animals are healthy and thriving.

1. **Choose an Animal**: Select an animal you will observe during your Zoo visit.
2. **Create a Behavior Key**: Identify and define common behaviors for your animal. For example: R=resting, F=feeding, E=exploring, S=socializing, ER=enrichment, P=playing, etc
3. **Observe and Record**: Spend 10–15 minutes observing the animal. Use the chart below to record how much time the animal spends on each behavior.
4. **Analyze Your Data**: Look for patterns in the animal's behavior. Did the animal spend most of its time resting, feeding, or exploring?
5. **Reflect**: Write a short summary about what your observations might say about the animal's well-being. What other factors (weather, habitat design, enrichment) might influence its behavior?

Time (minutes)	Behaviors			SAMPLE This sample uses the example key from above.	
				Bear 1	*Bear 2*
0-2				*P with 2, S*	*P with 1, S*
3-5				*E, ER*	*R in den*
6-8				*E, ER*	*R in den*
9-11				*E in water*	*R in den*
12-15				*F from ER*	*E*

KEY

Reflect on your ethogram observations by summarizing which behavior the animal spent the most time on and what this might reveal about its well-being. Consider how the habitat or environment influenced the behavior and how a zookeeper could use this data to improve the animal's care.

ANIMAL NUTRITION

Animal nutritionists make sure every animal gets the right food in the right way. They balance species-specific diets, adapt feeding for medical needs, and use nutrition creatively to support training, enrichment, and overall wellness.

CAREER SPOTLIGHT INTERVIEW: ANIMAL NUTRITION

Meet the Animal Nutrition team! From giant hay bales for elephants to live fish for penguins, this behind-the-scenes crew makes sure every animal gets the right food, at the right time, in the right way.

Q: What does the Animal Nutrition team do?

We prepare and deliver balanced, healthy meals for animals all across the Zoo! That includes:

- Chopping produce for herbivores
- Measuring meat for carnivores
- Sourcing seasonal, hard-to-find foods
- Creating fun and enriching ways for animals to eat
- Hiding medicine in treats for animal health

We work closely with keepers, veterinarians, and curators to ensure that animals of all ages get exactly what they need.

Q: What are your work hours like?

- Our day starts early—around 6:00 AM
- Most of our team works Monday through Friday, so we're ready when keepers begin their routines
- We don't typically work evenings, which makes it a great fit for morning people

Q: What kind of education do you need?

- A degree in Animal Science, Biology, Zoology, or Nutrition is required
- You also need to understand food safety, measurement, quality control, and basic math
- Experience working with animals or food helps too!

Q: What kind of personality works best in this role?

- Detail-oriented—a small mistake can affect an animal's health
- Creative—figuring out how to deliver medicine or make enrichment fun
- Analytical—using math and science to adjust diets
- Strong communicator—we work with almost every department in the Zoo
- Motivated and focused—this job is consistent, and staying positive is key!

Q: What do you do every day?

- Prepare and sort food for dozens of species
- Track nutrition data and adjust diets as needed
- Coordinate deliveries from over 100 vendors
- Work closely with departments like Animal Care, Facilities, Horticulture, IT, and even Events
- Problem-solve things like:
  - How to feed a sick animal without them noticing the medicine
  - How to get a picky eater to try something new
  - How to store enough hay to last the winter

Q: What's something people don't know about your job?

Food connects to almost everything in the Zoo:

- It's used in training and enrichment
- It helps with medical treatments
- It's featured in videos and seasonal events
- It even plays a part in guest safety and exhibit planning

And yes—our team helped figure out what to feed animatronic dinosaurs for fun videos and helped supply the cat litter used to clean up theme park rides!

Q: What are some challenges in Animal Nutrition?

- Seasonal sourcing—some foods aren't available year-round in Ohio
- Balancing act—foods must be healthy and useful for training or behavior
- Creative problem solving—like hiding 200 bitter pills inside a snack an elephant will eat!
- Consistency—our job repeats daily, so loving your routine and staying focused matters

Q: What's a typical project timeline like?

Our projects run on daily and weekly schedules—animals don't take days off from eating! But some longer-term tasks include:

- Adjusting diets for new animal arrivals
- Planning for seasonal food needs
- Working with Planning & Horticulture on new exhibits or plant safety lists

Q: How does this connect to conservation and education?

Our work helps animals live longer, healthier lives, which supports the Zoo's conservation goals. Education teams also share behind-the-scenes stories about nutrition with guests, students, and donors to help build connections and empathy.

Name: _____

ANIMAL NUTRITION 101

Animal nutritionists make sure every animal gets the right food, in the right way, at the right time. They use science, creativity, and problem-solving to support animal health through diet, enrichment, and medical care.

COMPARE ANIMALS

Choose two animals that classify differently and compare:

Animal 1:	**Animal 2:**
Diet:	**Diet:**
Current Season:	
How might the season impact its diet?	**How might the season impact its diet?**

DIET DETECTIVE

This is a fictional scenario created for educational purposes. It is not a real-life case or a reflection of the current health status of any bear at the Columbus Zoo and Aquarium.

See the brown bear diet chart below. Please note, these are sample numbers and diets are ever changing. The amounts listed will change, whether from day to day, week to week, month to month or season to season.

	Greens (romaine, endive, iceberg, and spinach)	**Carrots and Sweet Potatoes**	**Vegetables** (broccoli, cucumber, tomatoes, peppers, celery)	**Omnivore Biscuits**	**Meat** (supplemented with vitamins and minerals)	**Fish**
Spring	16 lbs	5 lbs each	20 lbs	Fluctuates with Appetite	3 lbs	2.5 lbs
Summer	20 lbs	7 lbs each	24 lbs	12-20 lbs	3.5 lbs	2.75 lbs
Fall	8 lbs	9 lbs each	0 lbs	20-28 lbs	4 lbs	3 lbs
Winter	0 lbs	2 lbs each	1 lbs	0-6 lbs	2.5 lbs	2 lbs

Why do you think their greens are reduced in winter?	**Using the data provided, calculate the percentage increase in biscuit use from spring to fall. What do you notice about the food intake throughout the seasons?**
□ Less appetite □ Less availability □ Behavioral changes □ Preparing for torpor □ All of the above	

Name: _____

SOLVE A PROBLEM

This is a fictional scenario created for educational purposes. It is not a real-life case or a reflection of the current health status of any lions at the Columbus Zoo and Aquarium.

During the morning check-in, a keeper reports that one of the male lions is refusing his usual carnivore meat blend for the second day in a row. He's still active, alert, and socially engaged with the other lions. His weight appears steady, and he's shown interest in his enrichment items.

Your job is to identify possible causes and suggest short-term and long-term nutrition solutions. Use the background info provided and your own reasoning to complete the challenge.

Background Info:

- Lions consume a premium quality ground carnivore diet with added vitamins and minerals.
- Each lion typically eats about 134 lbs of meat per week (approx. 19 lbs per day).
- Bones vary in size and are selected based on the animal's age and jaw strength.
- Keepers monitor behaviors like hoarding, pacing, appetite, and social dynamics closely.

1. What are 3 possible next steps you might take as the animal nutritionist?
Think about health, food quality, and behavior.

-
-
-

2. What specific behaviors would you observe or ask the keeper about to help you investigate further?
Check all that apply or write your own.

□ Interest in water
□ Chewing or swallowing difficulty
□ Relationship with other lions
□ Response to enrichment
□ Movement and activity level
□ Sounds or vocalizations
□ Interest in other food types
□ Other:

3. How might you temporarily change or adapt this lion's diet?
Check all that apply or write your own.

□ Offer a bone instead of soft food
□ Mix in a small amount of whole prey
□ Add an attractant (like fish oil or blood ice cube) to stimulate appetite
□ Try a smaller portion of the usual diet at a different time of day
□ Offer the food in a puzzle feeder to encourage curiosity and stimulation
□ Other:

Explanation:

4. Reflection: Based on what you've observed and the information provided, what do you think is the most likely reason the lion isn't eating his usual diet?

VETERINARIAN

Zoo veterinarians care for animals through health exams, surgeries, diagnostics, and teamwork. They use observation, problem-solving, and medical science to ensure animals stay healthy—and to treat them when they're not.

CAREER SPOTLIGHT INTERVIEW: VET

Meet Dr. Priya Bapodra-Villaverde! As the Senior Veterinarian at the Columbus Zoo, she helps care for animals of all shapes and sizes, making sure each one gets the medical care they need to stay healthy, thrive, and inspire future conservationists.

Q: What do you do as a Zoo Veterinarian?
I care for the health of all animals at the Zoo—from tiny frogs to elephants. That means performing checkups, surgeries, and treatments, and working closely with animal care teams to make sure animals are thriving. Zoo veterinarians must be ready for anything—our patients can't tell us what's wrong!

Q: What does a typical day look like?
- We start at 7:00 AM and meet as a team at 7:30 AM to go over the day's appointments and procedures.
- We spend the day doing exams, surgeries, or treatments in various regions of the Zoo.
- In the afternoon, we complete important desk work (writing records, prescribing medications, and planning next steps).
- Some days are calm; others are very busy or unpredictable!

Q: How do you become a veterinarian?
- You'll need strong grades and lots of hands-on animal experience—I worked on a dairy farm, at an equine surgery center, and even in a slaughterhouse before applying to vet school.
- Attend an accredited veterinary college
- You can specialize in zoological medicine after earning your DVM/VMD

Q: What skills are most important for this job?
- Empathy
- Patience
- Creative problem-solving
- Strong communication

Zoo medicine involves a lot of teamwork and creative thinking since you can't always use the same tools and techniques as you would for pets or farm animals.

Q: What advice would you give a student who wants to be a vet?
Get real-world experience early to be sure this is the career you want. Veterinary school is challenging—you need a strong passion to keep you motivated through tough moments. And yes, you'll need good grades!

Q: How does this job affect your life outside of work?
Being a zoo vet isn't a typical 9–5 job. We are on call 24/7, 365 days a year. You may have to miss holidays or family events if an animal needs care. It's a big commitment—but an incredibly rewarding one.

Q: What is the hardest part of the job?
Losing animals is difficult, especially seeing how it affects the people who care for them daily. But the challenges are also what make the job meaningful.

Q: What is the best part of your job?
Getting to work with incredible animals every day and helping them stay healthy. No two days are the same—I'm always learning something new.

Q: Does your work help animals around the world?
Absolutely. Keeping animals healthy here helps protect endangered species by supporting breeding programs and sharing knowledge about how to care for these animals. What we learn in zoos can also be applied to animals in the wild.

Q: What's the most important thing you do for animal well-being?
We work every day to keep animals as healthy as possible—preventing problems before they start and responding quickly when something goes wrong.

Name: _____

THINK LIKE A VET

Use your powers of observation and critical thinking as you explore the Zoo and discover how veterinarians support animal health through exams, treatments, and teamwork.

OBSERVE AND INFER

As you visit animals today, choose one species to focus on. Write the name below and observe them carefully for 5–10 minutes.

Animal:

Behavior Check
List 3 things this animal is doing (or not doing) that might give a clue to its health or well-being:

1.
2.
3.

Habitat Scan
Describe 2 features of the habitat that help keep the animal physically or mentally healthy:

-
-

Enrichment Evidence
Can you spot anything in the habitat that might be used for training, enrichment, or health care?

Describe it and what you think it's used for:

Based on your observations, how do husbandry routines like feeding, cleaning, enrichment, and training support the work of veterinarians?

Name: _____

VET CASE FILE CHALLENGE

You're on the Animal Health team at the Columbus Zoo. A zookeeper from the Congo Expedition region reports a change in behavior for one of the African leopards.

This is a fictional veterinary scenario created for educational purposes. It is not a real-life case or a reflection of the current health status of any leopard at the Columbus Zoo and Aquarium.

IMPORTANT

Fold your paper along the dotted line to see only one clue at a time.

Work through the case file step by step like a Zoo veterinarian would.

Use your observation skills, scientific thinking, and problem-solving strategies.

Good luck!

Clue #1: Appetite Change	The leopard has not eaten for two days. She normally eats her full diet every morning. She is still drinking water and alert.

List 2–3 possible reasons why the leopard might not be eating:

-
-
-

Clue #2: Behavior Observation	Keepers report the leopard is resting more often and avoiding her favorite high perch. She is not limping, but is slower to move.

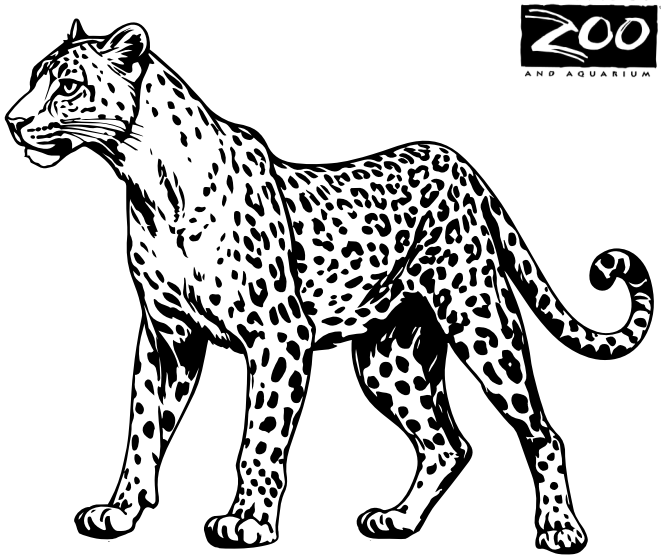
What might this tell you about her physical condition?

- What part of the body might be uncomfortable or in pain?
- Would this change your original guesses?

Name: _____

FUN FACTS

- Leopards are typically solitary and don't usually show obvious signs of pain or illness.
- They are territorial and sensitive to changes in environment or routine.
- Leopards are excellent climbers and often rest or eat in trees.



Clue #3: Physical Exam	The vet team decides to perform a visual check using binoculars and video overnight. They notice the leopard licking her back leg repeatedly.

Diagnostic
As the vet, what 2 diagnostic tools would you recommend to learn more?
Example: x-ray, bloodwork, temperature, ultrasound, fecal exam

-
-

Clue #4: Results	X-rays show the leopard has a small bone bruise on her hind leg, likely from a misstep during a leap. It's minor but painful. She is otherwise healthy, but the discomfort is affecting her appetite and movement.

Make a Treatment Plan
You're the vet. What will you recommend to:

- Help the leopard heal:
- Monitor her recovery:
- Ensure she gets proper nutrition and enrichment during this time:

Would you need help from other Zoo teams? (Animal Nutrition, Zoo Keepers, Facilities, etc.)
□ Yes – who and why?

CONSERVATION BIOLOGIST

Conservation biologists study animals and ecosystems to protect species in the wild and in human care. They use data, fieldwork, and collaboration to support research, habitat protection, and education about conservation challenges.

CAREER SPOTLIGHT INTERVIEW: CONSERVATION BIOLOGY

Meet Greg Lipps! As a conservation biologist, Greg works to protect Ohio's native wildlife by researching threatened species, restoring habitats, and building partnerships that help animals thrive in the wild before they ever need a rescue.

Q: Can you describe your role as a conservation biologist and the main focus of your work?
My role is focused on keeping Ohio's wildlife off endangered species lists—or moving them to lower risk categories. This involves understanding population status, identifying threats, creating recovery plans, and working with partners to implement them. While there's a lot of science involved, success ultimately depends on people and the choices they make that impact wildlife and habitats.

Q: What does a typical day or week look like for you?
My work shifts by season. During the field season (mostly April–September), I'm outside monitoring species like turtles, snakes, and salamanders. This includes tracking animals, setting traps, using trail cameras, and adapting plans around wildlife activity and weather.

In the off-season, I analyze data, write reports and grant proposals, and meet with partners. I also manage permits, hire seasonal staff, and plan for the next field season.

Q: What kind of environment do you work in most often—at the Zoo, in the field, or both?
Both! I spend as much time as possible outdoors during the field season—working in prairies, wetlands, streams, and forests across Ohio. The rest of the year is mostly spent at the Zoo or at home doing computer-based work and attending meetings.

Q: What type of education or background is needed to work in this field?
Most conservation biologists have a degree in biology, ecology, or natural resources—often a master's or PhD. Field experience is critical, and many people get started by working seasonal technician jobs, which are often listed online. Most of these positions are posted here: https://jobs.rwfm.tamu.edu/search/

Q: What skills or personality traits are most important for success in conservation biology?
You need strong research skills—attention to detail, good data collection, and analysis. But conservation is also about communication. You must work well with people from all backgrounds, build trust, and collaborate toward shared goals.

Q: Who do you collaborate with regularly—inside or outside the Zoo?
I work with many partners: federal and state agencies, landowners, soil and water districts, land trusts, nonprofits like The Nature Conservancy, and other zoos. Conservation only succeeds when many people work together.

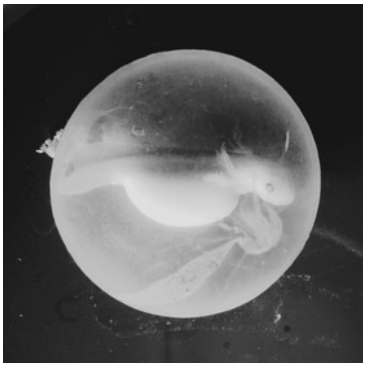
Q: Can you tell us about a conservation project you've worked on and what impact it had?
From 2006–2010, we led a state assessment of the Eastern Hellbender. We found an 82% population decline, which led to the creation of the Ohio Hellbender Partnership. Since then, we've protected over 1,000 acres, placed over 100 Hellbender Huts (like nest boxes), and released 2,000 zoo-reared salamanders into the wild. In 2023, one of those animals was found guarding a nest—a huge milestone for the species!

Q: What advice would you give to students interested in this type of work?
Don't wait—get involved now! Attend wildlife or conservation conferences, many of which have student discounts. Ask about volunteer opportunities, internships, or seasonal jobs. Talk to your professors, zoo staff, or park rangers. The best way to figure out your future is to try the work and start building relationships early.

Name: _____

DIG DEEPER INTO HELLBENDERS & CONSERVATION CAREERS

Why are hellbenders so important to river ecosystems? How does one conservation career connect with others? Use what you've learned to investigate how different roles work together to protect species like the hellbender—and imagine where your interests might fit in.




- Hellbenders are giant salamanders native to Ohio's rivers.
- They need clean, cool water to survive.
- Hellbenders are bioindicators—animals that show us how healthy (or unhealthy) a river is.
- The Columbus Zoo has helped raise and release hellbenders for over a decade!

What might happen to other parts of the ecosystem if hellbenders disappear?
How might that impact people who live nearby?

Draw lines to connect each job title to the way they support hellbender conservation. Then choose two jobs and explain how they might work together.

Water Quality Technician	Test rivers for pollution and monitor water health
Animal Keeper	Feed and care for young hellbenders at the zoo
Zoo Educator	Teach students and the public about why hellbenders matter
Conservation Geneticist	Study hellbender DNA to improve breeding programs
Habitat Engineer	Design stream shelters to keep hellbenders safe in the wild
Wildlife Policy Advocate	Help create laws to protect clean water and habitats

Name: _____

CONSERVATION PRACTICE

Now it's your turn to step into the role of a wildlife conservationist! Use what you've learned, and a little extra research, to test out the real skills used by people protecting hellbenders in Ohio.

Want to dig deeper? Look up the Ohio Hellbender Partnership to see how scientists, zoos, and students are working together to save this species.

Use the resource links in the back of this guide to explore blog posts and videos from the Columbus Zoo's hellbender conservation work!

OBSERVATION AND DATA Sketch or list 3 signs of a healthy stream.	
ORGANIZATION AND RECORD KEEPING Make a checklist for caring for a young hellbender. What do you monitor each day?	
SCIENTIFIC TESTING Imagine you're testing water for safety. What things might you measure?	
EDUCATION You're presenting to a class. What's your "hook" to get them excited about hellbenders? Write 1-2 sentences.	

EXHIBIT DESIGN AND PLANNING

From planning safe animal spaces to developing educational signage and theming, this team brings together science, design, and storytelling. Jobs include: Project Manager, Director of Planning, Architect, Landscape Architect, Graphic Designer, Theming and Interpretive Design

CAREER SPOTLIGHT INTERVIEW: EXHIBIT PLANNING & DESIGN

Meet our Exhibit Planning & Design Team! This creative group is responsible for making the Zoo an engaging, educational, and immersive space—for both animals and people.

Q: What does the Exhibit Planning & Design team do?
We work together to design and maintain animal habitats, guest signage, themed environments, and interactive experiences at the Zoo. Our job is to make sure spaces are safe, educational, beautiful, and engaging.
Our work serves three clients:

1. The Animals (enrichment, safety, and comfort)
2. The Zoo Staff (functionality and workflow)
3. The Guests (immersion and learning)

Q: What are your daily duties like?

- Designing or updating signage, graphics, and exhibit theming
- Managing construction or renovation of exhibits
- Creating hands-on interactives with lights, buttons, sounds, or movement
- Building themed animal enrichment items (like custom water bowls or toys!)
- Collaborating with departments like Animal Care, Education, and Facilities

We often switch between creative design, project planning, and hands-on fabrication—sometimes all in one day!

Q: What kind of education or training is needed?

- Most of us have degrees in Fine Arts, Architecture, Design, or Interactive Technology
- Some team members attended the Columbus College of Art & Design (CCAD)
- Backgrounds in Project Management, Construction, or AV/IT are also helpful
- Hands-on experience with tools, electronics, and fabrication is key

Q: What kind of person would thrive in this job?

- Creativity
- Problem-solving
- Hands-on skills
- Flexibility
- Teamwork
- Time management

It also helps to be okay with revising your ideas—we often go through multiple versions before landing on the final design.

Q: What are some challenges in this work?

- We design for animals who can't tell us what they want—and who often surprise us!
- We work around weather, animal behaviors, and tight construction schedules
- Sometimes projects shift based on exhibit access or animal temperament
- We balance aesthetic goals with safety and functionality

Q: What do project timelines look like?

- Major exhibit projects can take 18+ months of design and over a year of construction
- Smaller theming or prop projects might take days or weeks
- Interactive elements often follow the larger project timeline but can also be standalone upgrades

We always adapt based on the animals' needs, weather, and available access to exhibit areas.

Q: What's something surprising about your work?
We don't just make things "look cool"—our work helps guests learn about conservation, connect with wildlife, and understand ecosystems. Every themed rock, sign, or sound button is part of a larger educational mission.

Name: _____

ENRICHMENT UPGRADE

Propose an enrichment or habitat feature based on observed bear behavior and needs.

Black bears are curious, strong, and love to forage. Based on this:

- Propose one new feature that could encourage natural behavior

Enrichment: Items or activities that encourage natural behaviors and keep animals mentally and physically active, like puzzle feeders or scent trails.

What will you design? How would this help support animal well-being?

Notes and Plans:

Sketch and label your idea:

Name: _____

MAP IT OUT

Visit the black bear habitat. Create a key and add labels to show how this design meets the needs of an American Black Bear, staff, and guests.

KEY

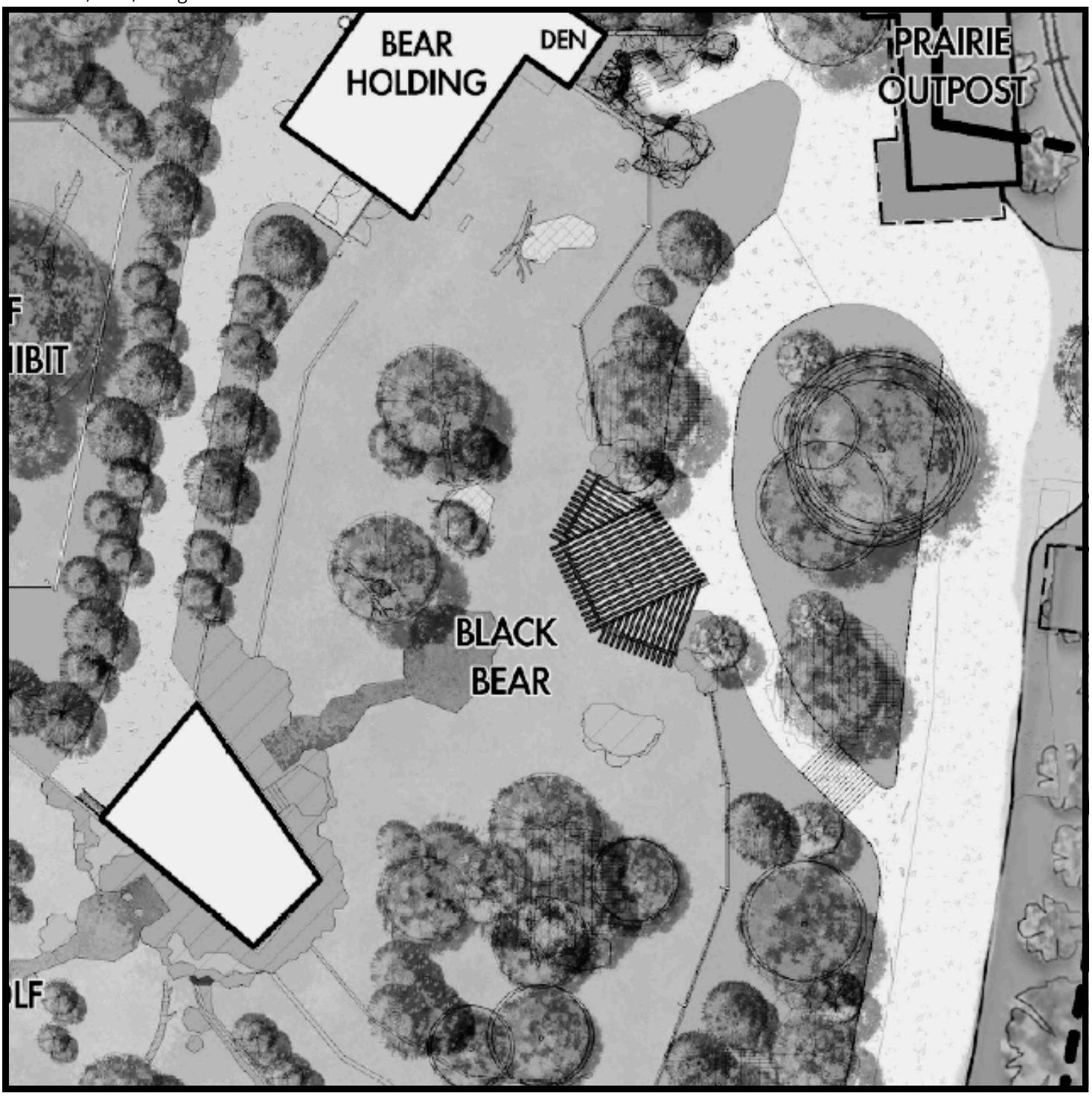
- ☐ Areas that support the bear's natural behaviors
- ☐ Areas for keeper access and safety
- ☐ Areas for guest engagement
- ☐ Other:

How does this exhibit balance animal care, staff safety, and guest engagement?

Name: _____

MAP IT OUT

Visit the black bear habitat. Create a key and add labels to show how this design meets the needs of an American Black Bear, staff, and guests.



KEY

- ☐ Areas that support the bear's natural behaviors
- ☐ Areas for keeper access and safety
- ☐ Areas for guest engagement
- ☐ Other:

How does this exhibit balance animal care, staff safety, and guest engagement?

Name: _____

ARCHITECTURE

Practice applying scale to architecture drawings. Choose an exisiting habitat or decide on a new animal.

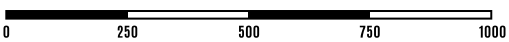
Use the scale key to design your own exhibit plan.
Calculate:

- The square footage of the main animal yard
- The distance between two enrichment features
- The size of the holding building or indoor den area
- Label your unit of measurement on the scale

Animal:

Notes and Plans:

Sketch your habitat and add measurements here:



Name: _____

GUEST INTERPRETATION

Create an educational element for exhibit signage or guest interaction.

What do you want guests to learn or feel about black bears?

Choose an element to design:

- □ Interpretive sign
- □ Flip panel with fun facts
- □ Digital interactive (button-activated audio or quiz)
- □ Other:
- □ Projector and interactive
- □ Animal ID/story
- □ Sculpture
- □ Tactile element

Bonus: Does your interpretive element align with conservation messaging?

Sketch and label your idea:

REFLECTIONS AND PLANNING

Think about what you've learned, explore your strengths, and start mapping out your next steps toward a future in zoo and conservation careers.

Name: _____

ZOO CAREER REFLECTION

Reflect on career insights, personal connections, and the role of zoos in conservation.

CAREER DISCOVERY

Which zoo career stood out to you the most? Why?

What are two things people in this career do every day?

-
-

STRENGTHS AND INTERESTS

What subjects or activities do you enjoy that connect to this career?

What is one skill or trait you have that would help in a zoo-related job?

PURPOSE AND CONSERVATION

How do zoo careers support animals and the environment?

What's one conservation issue you learned about that you care about?

ADDITIONAL THOUGHTS

Name: _____

EXPLORE A PATH: WHAT COULD YOU DO NEXT?

Careers that interest me:

□ Animal Care/Zookeeper
□ Animal Nutritionist
□ Veterinarian
□ Conservation Biologist
□ Exhibit Design and Planning
□ Other:

List 2–3 things you enjoy or feel confident doing (school subjects, activities, etc.)

-
-
-

Which of these could you try in the next year to learn more?

□ Visit the Zoo
□ Interview someone about their job
□ Volunteer with animals or nature
□ Read a book or watch a video about careers
□ Take a class about science, animals, or art
□ Explore the included resource links
□ Other:

Write a goal or plan here:

Name: _____

EXPLORE A PATH: WHAT COULD YOU DO NEXT?

List 1–2 zoo or animal-related careers you're interested in:

-
-

What Skills or Experiences Do I Already Have?

- **List courses, volunteer work, or skills related to your interests.**

- **What else would you like to learn?**

What education or training does this career require?
Do some quick research or reflect on what you've learned—write your notes here:

What's Next for Me?

- **One course or program I could take in high school:**

- **One experience I want to pursue (volunteer, internship, field trip):**

- **One question I still have about this career:**

What path do you see for your future career? List the steps you need to take to get there.

RESOURCES

Explore zoo careers beyond the page with videos, blog posts, job links, a career comparison chart, and a glossary to guide your next steps.

Name: _____

RESOURCE LINKS

Click any underlined title to explore the link when using the digital version of this page.

Starting Your Zoo Career	Visit our website here for additional career related interviews and information.	
Animal Care/Zookeeper	**Videos:** • Petrie Training • King Cobra Training • "Winging It": Using Creativity and Technology to Improve a Crane's Quality of Life • California Sea Lions and Harbor Seals Arrive at the Columbus Zoo and Aquarium	**Blog Posts:** • Interview with a Zoo Keeper: Chris Killilea • Interview with a Zookeeper: Erin Bauer • Seal Smiles: Behind the Scenes of Harbor Seal Dental Care at the Columbus Zoo • Training Tales: Alternative Therapies • Training Tales: Crate Training • Training Tales: Scale Training • Training Tales: Primate Training • Training Tales: Targets • Training Tales: Guest Engagement with Columbus Zoo Animals • Training Tales: Natural Behaviors • Training Tales: Injection Behavior • Training Tales: Feathered Friends
Veterinarian	**Videos:** • Bonobos & Underdogs- Leading with Heart • Future in Her Hands- Why Support Matters • Behind the Scenes: Extraordinary Animal Care • Meet Dr. Priya – A Leader, A Role Model • Sea Lion Eye Procedures • "Winging It": Using Creativity and Technology to Improve a Crane's Quality of Life • Elephant Endotheliotropic Herpesvirus (EEHV) Lab • Great Ape Heart Project • Bonobos & Underdogs – Leading with Heart • Do Animals Go To The Dentist? – Columbus Zoo Qs • Giraffe Blood Draw and Radiographs • Giraffes on the Frontline – Science in Action • Patty the Goat's Hoof Care • Orangutan Khali's Doppler Ultrasound	**Blog Posts:** • Interview with a Zoo Keeper: Chris Killilea • Interview with a Zookeeper: Erin Bauer • Seal Smiles: Behind the Scenes of Harbor Seal Dental Care at the Columbus Zoo • Training Tales: Alternative Therapies • Training Tales: Crate Training • Training Tales: Scale Training • Training Tales: Primate Training • Training Tales: Targets • Training Tales: Guest Engagement with Columbus Zoo Animals • Training Tales: Natural Behaviors • Training Tales: Injection Behavior • Training Tales: Feathered Friends
Conservation Biologist	**Videos:** • Columbus Zoo's 1,000th Hellbender Release **Blog Posts:** • Team Spotlight: The Wilds Welcomes Ruth Freemon • Greg Lipps Joins Columbus Zoo and Aquarium as First Conservation Biologist • The Watters Aquatic Conservation Center Marks the Beginning of an Exciting New Chapter in Freshwater Mussel Conservation • Greg Lipps Receives Columbus Zoo's Commitment to Conservation Award	
Exhibit Design and Planning	**Blog Posts:** • The Making of North America Trek • Exploring the Columbus Zoo: Discover Orangutans in Their Indoor Habitat • Soaring to New Heights: An Inside Look at the Columbus Zoo's New Bald Eagle Habitat • The Redevelopment of a Historic Region of the Zoo, and How You Can Help • OSU's Center for Design and Manufacturing Excellence Helps the Zoo • Something Big is Rising at Zoombezi Bay: Meet Conservation Tower	
Animal Nutrition	**Blog Posts:** • Animal Nutrition at the Columbus Zoo: Feeding Carnivores • Columbus Zoo Animal Nutrition: What to Feed a Hyena • 3 Facts About Snake-Necked Turtle Nutrition at the Columbus Zoo	

JOBS AND INTERNSHIPS

Click any underlined title to explore the link when using the digital version of this page.

AZA Job Postings	Search all jobs in AZA accredited facilities.
Columbus Zoo Job Postings	Find information about upcoming job fairs, as well as different types of employment at the Zoo.
EDGE Program for High Schoolers	Details for working towards the OhioMeansJobs Readiness seal for seasonal employees at the Zoo.
Internships	View current openings for internships at the Columbus Zoo.
Natural Resources Job Board	Take a look at the job board shared by Conservation Biologist, Greg Lipps.
RISE Scholarships for College Students	Details about 12–16 week programs with scholarship support for pay and transportation, available in a variety of departments throughout the Zoo.
Volunteer	Learn about different volunteer opportunities at the Zoo for students entering grades 8-12. Adult volunteer opportunities are also avaiable.

Name: _____

COMPARE AND EXPLORE

Explore how different zoo careers work together to support animal care, education, and conservation. Compare job duties, skills, schedules, and training to find a path that matches your strengths and interests.

Career Area	What They Do	Skills Needed	Typical Schedule	Education or Training	Works With...
Zookeeper / Animal Care	Daily care of animals: feeding, cleaning, training, and enrichment	Observation, patience, teamwork, physical stamina	Early mornings, weekends, holidays	Degree in animal science, biology, or zoology and experience	Vets, nutritionists, curators, exhibit staff, education
Animal Nutrition	Plans, prepares, and delivers species-appropriate diets for all zoo animals	Biology, organization, problem-solving, detail-focused	Early mornings, weekdays	Degree in biology, animal science, or nutrition	Keepers, vets, warehouse, vendors, conservation education
Veterinarian	Diagnoses and treats animal health issues; performs exams and surgeries	Problem-solving, communication, precision, science-based	Variable and on-call/emergencies	Doctor of Veterinary Medicine (DVM) and zoological training	Keepers, curators, nutrition team, planning
Conservation Biologist	Studies and protects wildlife and habitats through field research, planning, and partnerships	Biological research, data analysis, communication, flexibility	Seasonal: fieldwork in warmer months; office-based work in cooler months	Degree in biology, ecology, or natural resources; often a master's or PhD	State and federal agencies, landowners, nonprofits, land trusts, zoo departments
Exhibit Planning and Design	Designs animal habitats and guest spaces; balances function, safety, and storytelling	Creativity, collaboration, planning, engineering or art	Weekdays, extended hours as needed	Degree in architecture, design, landscape architecture, or related field	Animal care, education, facilities, marketing, construction

Name: _____

GLOSSARY

Accredidation	A certification that shows a zoo or aquarium meets high standards in animal care, safety, conservation, and education (like through AZA or WAZA).
Association of Zoos and Aquariums (AZA)	Accredidation that represents more than 251 facilities in the United States and overseas.
Animal Care	The daily tasks and responsibilities involved in keeping animals healthy, safe, enriched, and comfortable in human care.
Curator	Someone who oversees the care, transport, and conservation of animals.
Enrichment	Items or activities that encourage natural behaviors and keep animals mentally and physically active, like puzzle feeders or scent trails.
Exhibit Design	The process of planning and creating habitats that meet the needs of the animals while also helping guests learn and connect.
Husbandry	The routine care of animals, including feeding, cleaning, training, and habitat maintenance.
Life Support Services (LSS)	The staff that tends to the water quality needs for specific animals.
Interpretive Design	The creation of educational signs, interactives, and displays that help guests understand animals, ecosystems, and conservation messages.
Medical Observation	Watching an animal's behavior, movement, and body condition to look for signs of illness or injury.
Saving Animals from Extinction (SAFE)	A collaborative conservation program spearheaded by the Association of Zoos and Aquariums (AZA).
Species Survival Plan (SSP)	A program managed by accredited zoos to help protect endangered species by carefully planning breeding and animal placement.
Wellbeing	A measure of how healthy, comfortable, and mentally stimulated an animal is in its environment.
World Association of Zoos and Aquariums (WAZA)	World Association of Zoos and Aquariums. "WAZA is the global alliance of regional associations, national federations, zoos and aquariums, dedicated to the care and conservation of animals and their habitats around the world. "
Zoology	The scientific study of animals, including their behavior, physiology, and classification.

TEACHER RESOURCES

Find a standards alignment guide and answer keys to help connect zoo careers to your classroom curriculum.

STANDARDS GUIDE

Ohio Career Connections Framework	**Grades 6-8**	**CCRS.6-8.1:** Apply knowledge, interests, and skills to explore career options. **CCRS.6-8.2:** Investigate the education and training requirements of various careers. **CCRS.6-8.3:** Identify and demonstrate employability skills (e.g., teamwork, communication, responsibility).
	Grades 9-12	**CCRS.9-12.1**: Use self-awareness to analyze and evaluate a wide range of career options. **CCRS.9-12.2:** Demonstrate essential career-readiness skills in real-world and simulated settings. **CCRS.9-12.3:** Develop a plan for post-secondary success
Science	**Grades 6-8**	**Science Inquiry & Application:** Use observations, identify questions, interpret data. **LS.6.2:** Animals rely on physical and behavioral adaptations for survival. **LS.7.3:** Biotic and abiotic factors influence ecosystems. **LS.8.1:** Diversity of species and the role of natural selection. **STEM.6–8:** Apply engineering design to solve real-world problems.
	Grades 9-12 **Biology and Environmental Science**	**LS.HS.1:** Structure, function, and behavior of living organisms. **LS.HS.5:** Homeostasis, feedback mechanisms, and responses to stimuli. **ENVS.HS.4:** Biodiversity and conservation. **Science & Engineering Practices:** Analyzing data, constructing explanations, designing solutions.
Social Studies	**Grades 6-12**	**Geography Strand:** Analyze how people modify and adapt to their environment (e.g., zoo design, conservation). **Economics Strand:** Understand how people allocate resources, make decisions, and value services (e.g., sustainability, nonprofit missions).
ELA	**Grades 6-12**	**RI.6–12.1–4:** Read and interpret informational texts. **W.6–12.2:** Write informative/explanatory texts to examine a topic clearly. **SL.6–12.1:** Participate in collaborative discussions on grade-level topics.

ANSWER KEY

Answers will vary since most questions are observational and reflective. See below for more detailed sample responses for the Animal Nutrition scenarios and the Veterinarian scenario.
See below and the following 2 pages for specific keys.

ANIMAL NUTRITION- DIET DETECTIVE
Why do you think their greens are reduced in winter?
Correct answer: All of the above

Explanation:
- Less appetite – Bears naturally eat less in winter, especially if preparing for torpor (a winter slowdown similar to hibernation).
- Less availability – Leafy greens are harder to source in winter months.
- Behavioral changes – Bears become less active in colder months and may not engage as much with food.
- Preparing for torpor – Their metabolism slows, and their dietary needs shift toward more fat and protein for energy storage.

Using the data provided, calculate the percentage increase in biscuit use from spring to fall. What do you notice about the food intake throughout the seasons?
Spring biscuit amount: Fluctuates with appetite (we'll use an average of 10 lbs for calculation)
Fall biscuit amount: 20–28 lbs (we'll use the average: (20 + 28) ÷ 2 = 24 lbs)

Calculation:
Spring amount: 10 lbs
Fall amount (average): (20 lbs + 28 lbs) ÷ 2 = 24 lbs
Step 1: Subtract to find the difference
24 lbs – 10 lbs = 14 lbs
Step 2: Divide the difference by the original (spring) amount
14 ÷ 10 = 1.4
Step 3: Convert to a percentage
1.4 × 100 = 140%

Answer: Biscuit use increased by approximately 140% from spring to fall.

What do you notice about food intake throughout the seasons?
Sample Response:
- Food intake increases in the fall to help the bear build fat stores before winter.
- Most categories (greens, veggies, biscuits, meat, fish) increase in summer and fall, then drop sharply in winter.
- This pattern reflects the bear's natural feeding cycle and preparation for torpor.

Key Observations & Inferences
- Appetite loss is a common early sign of discomfort or injury in solitary big cats.
- Avoiding the perch suggests possible discomfort while jumping or climbing.
- Licking the leg may indicate a localized issue such as bruising, soreness, or a minor soft tissue injury.

ANIMAL NUTRITION- SOLVE A PROBLEM
Lion Diagnosis:
The lion may be bored or disinterested in the current diet due to lack of variety, changes in temperature, or behavioral preference (such as a shift in taste, smell, or texture). In some cases, this reflects a need for diet rotation or sensory stimulation rather than a medical issue.

Key Clues Leading to This Conclusion:
- The lion is still active and alert (no clear signs of illness).
- There have been no changes in food safety or delivery timing.
- Similar diet refusal behaviors have occurred seasonally or during environmental shifts.
- Enrichment patterns or feeding presentation methods may be repetitive.

Temporary Diet Change Strategy:
- Offer a slightly altered version of the meat blend (e.g., different cut or thawing method).
- Add scent-based enrichment (like herbs, spices, or frozen blood cubes).
- Provide feeding in a new format (e.g., hidden in puzzle feeders or placed on a log)
- Monitor appetite and behavior to evaluate response over several days.

VETERINARIAN- CASE FILE CHALLENGE
Likely Cause:
The leopard likely has a minor injury—such as a bone bruise or soft tissue strain—possibly from a slip, awkward landing, or overexertion.

Diagnostic Tools a Vet Might Use:
- X-rays to rule out fractures or internal injury
- Video observation to monitor movement
- Physical exam
- Behavior logs from keepers for comparison

Treatment Plan (Sample Response):
- Rest and limited climbing to avoid strain
- Pain management medication if needed
- Diet modification (hand feeding or easier-to-chew food) to stimulate appetite
- Continued monitoring by the care team
- Environmental adjustments (e.g., lower platforms) during recovery

Insight:
In solitary, animals like leopards, subtle changes in movement or appetite may be the only visible sign of a medical issue. Zoo veterinarians rely on observation, collaboration with keepers, and animal training to diagnose and treat without causing stress.

MAP IT OUT- KEY

Visit the black bear habitat. Create a key and add labels to show how this design meets the needs of an American Black Bear, staff, and guests.

KEY

- Areas that support the bear's natural behaviors
- Areas for keeper access and safety
- Areas for guest engagement
- Other:

How does this exhibit balance animal care, staff safety, and guest engagement?

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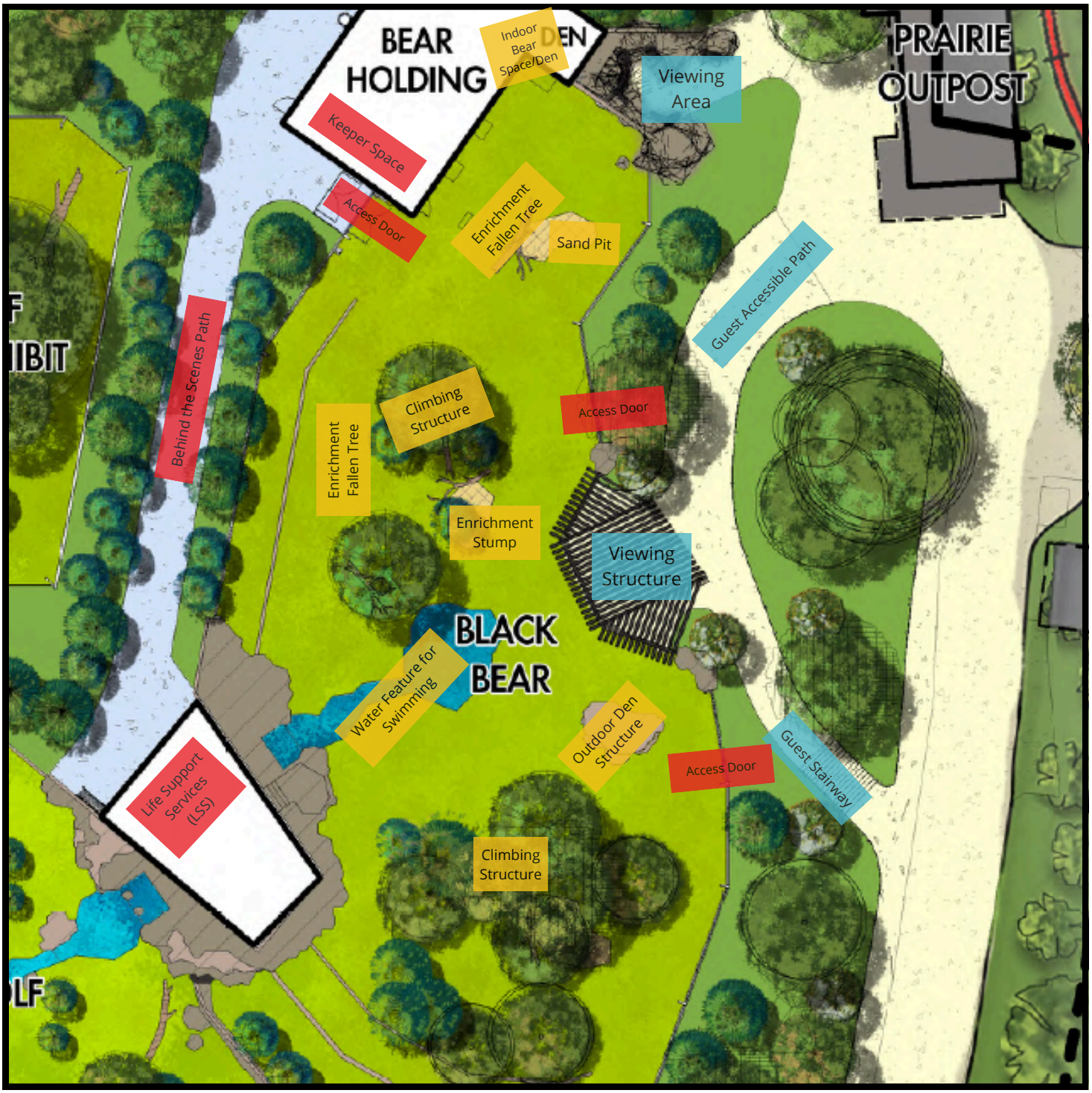

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