

Teacher Workshop

PAW

PROJECT ARIZONA WILDLIFE



phoenixzoo
ARIZONA CENTER for NATURE CONSERVATION



Today We Hope You...



Feel confident using the Project AZ Wildlife materials and lesson plans



Feel confident teaching STEM concepts, accountable talk, and project-based learning to your students



Clarify your understanding of any difficult or challenging concepts related to the curriculum/project



Collaborate with colleagues



Engage in rich discussion



Apply what you've learned to your classroom

Agenda

- Part 1:
 - Welcome
 - Intro to the project, resources, and curriculum elements
 - Conservation Center Tour!
- Part 2:
 - Case Study
 - Learning Activity: Shrinking Habitats
 - Lunch!
- Part 3:
 - Socratic Seminar
 - Learning Activity Stations
 - Debate
- Part 4:
 - Create your Save a Species Plan
 - Reflection
 - Individual/team time!



Tell Us What You Already Know...



Project AZ Wildlife Pre-Assessment



Part 1

- Welcome!
- Story Harvesting
- Intro to the project, resources, and weekly parts of the lesson
- Conservation Center Tour!



A hand is placing a yellow paper cutout of a castle onto the left page of an open book. The book's right page features a large yellow moon and several birds flying against a teal background. The book is resting on a wooden surface.

Story Harvesting Roles

Teller: Tells a story about a discussion or project-based activity that they did with their students (could be successful or not)

Questioner: What questions arise from the story that applies to other STEM experiences?

Process: What processes, applications, discoveries happened?

Pivotal Points: When did breakthroughs occur, what was the learning?

Emotional: How did the story make you feel?

Connection: How do your experiences connect to the story? Have you experienced something similar or different?

Save a Species Plan

The project will include...

- The importance of that animal
- Common challenges the animal faces in the wild
- A proposed solution which identifies the interested parties and potential partners involved
- How they are planning to monitor the animal's progress
- An awareness campaign or action-based element to involve the public in saving the species





Why Project-Based Learning?

Integrates science, technology, engineering and math into one learning experience


Learning retention

Empowers and builds confidence


Promotes skills needed to solve problems we don't know we have yet

Enhanced engagement and motivation (And it's fun!)

Resources



PROJECT ARIZONA WILDLIFE

TEACHER GUIDE

Recommended Grades: 6th – 12th


Type of Lesson: Self-paced curriculum with videos, discussions, activities, and final project.

Recommended Timeframe: 9-week research-based project. Approximately 90-minute sessions per week with opportunities for extended learning and independent research.

Overview: This program will guide participants through research experiences involving the Phoenix Zoo's conservation efforts. Participants will learn about the complex process of saving endangered species, then be inspired to create their own "Save a Species" plan. This project is aligned to state and national science standards.

Key Concepts:

- Identify everyday actions that people can take to conserve and protect wildlife
- Discuss how human actions positively and negatively affect animal habitats and populations
- Respectfully engage in argument about the controversial aspects of human intervention on wildlife populations
- Conduct research about the ecosystem and needs of endangered and threatened species
- Understand the importance of genetic diversity in endangered and threatened populations
- Define and create a solution for a real-world problem
- Collaborate with peers to complete a project
- Evaluate own work and the solutions of others
- Present work to an audience using public speaking skills
- Develop empathy for animals by considering multiple perspectives
- Identify the conservation efforts of the Phoenix Zoo
- Identify how multiple careers engage in conservation efforts

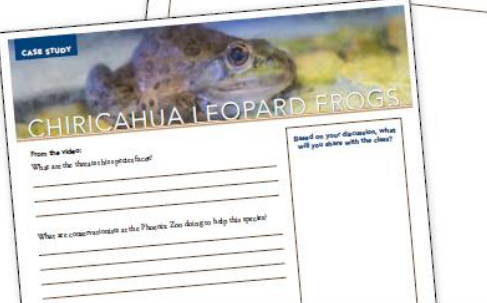


ACTIVITY

WILDLIFE CORRIDOR DESIGN

Directions:

1. Study the map and identify where you would like to put a corridor. You must connect at least 2 patches.
2. Label a type of natural resource or habitat you want.
3. Using the map, draw a path for your corridor. (You may use a ruler.)



CASE STUDY

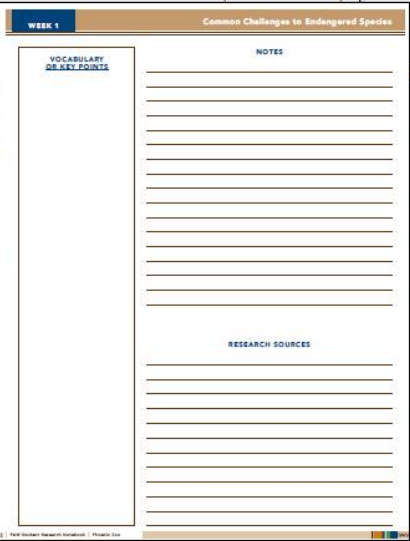
CHIRICAHUA LEOPARD FROGS

From the video:

What are the threats to leopard frogs?

What are conservation efforts at the Phoenix Zoo doing to help this species?

Based on your discussion, what will you share with the class?



WEEK 1 Common Challenges to Endangered Species

VOCABULARY OR KEY POINTS

NOTES

RESEARCH SOURCES

Example Student Research Notebook Pages

Weekly Parts of the Lesson

- Case Study
- Learning Activity
- Independent Research
- Discussion
 - Socratic Seminar
 - Debate



Let's Go
Outside!





Break Time!

Part 2

- Case Study
- Learning Activity: Shrinking Habitats



Reflection: Triangle Circle Square



Triangle: 3 important points

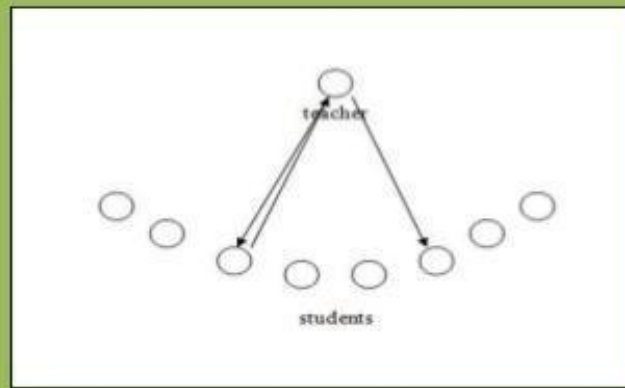


Circle: What's circling around in your head?



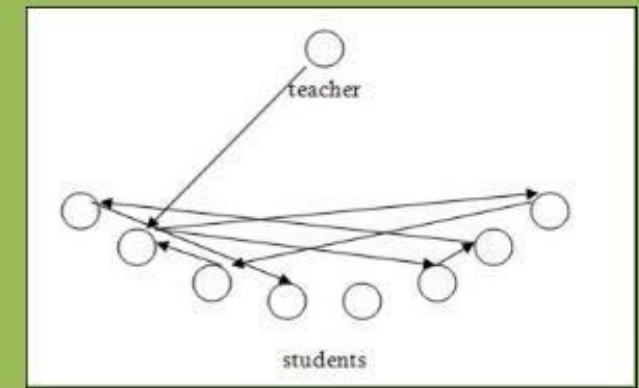
Square: Something that "squares" with your way of looking at the world

What is Accountable Talk?



Teacher-Centered Discussion::

Here the teacher can evaluate the understanding of only one child at a time. Students are likely to become disengaged because they do not have the constant opportunity to actively participate. They may not retain new information for an extended period without the chance to discuss it actively.



Student-Centered Discussion:

Students are engaged because they are allowed to use their natural inclination to talk to each other. They will process lesson material more deeply through the active discussion and defense of their ideas and opinions. The teacher is able to assess every student through his or her participation in the conversation.

Accountable Talk Requires...



STUDENTS RESPONDING TO AND
FURTHER DEVELOPING WHAT
OTHERS IN THE GROUP HAVE
SAID



KNOWLEDGE THAT IS ACCURATE
AND RELEVANT TO THE TOPIC
UNDER DISCUSSION

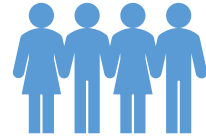


REQUIRES ACTIVE AND
ATTENTIVE LISTENING



REQUIRES THE USE OF EVIDENCE

Must Be Accountable To...



The learning
community



Accurate and
appropriate knowledge



Rigorous thinking

Strategies

Set expectations as a group

Use pictures

Notecards

Practice particular skills



Chiricahua Leopard Frog


Case Study

Shrinking Habitats





Lunch Break!



Reflection: Rose, Bud, Thorn

- **Rose:** A positive experience or something you learned so far
- **Bud:** Something you are looking forward to doing with your students
- **Thorn:** Something you need help with or are not looking forward to

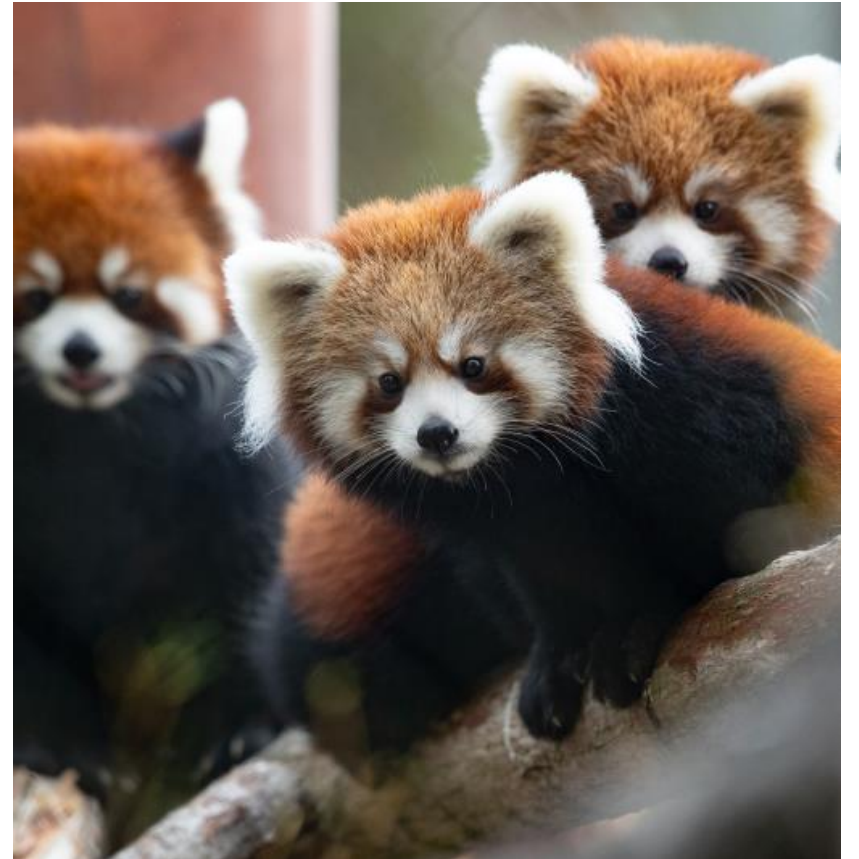
Part 3

- Socratic Seminar
- Learning Activity Stations
 - Pronghorn Wildlife Corridor
 - Bottleneck Effect
 - Telemetry Engineering Challenge



Socratic Seminar

- Usually, the discussion focuses on a moral dilemma or ethical question that inspires multiple viewpoints.
- *It is important that the teacher does not state whether an answer is correct or not and does not dictate who gets to speak (i.e., no raising hands and calling on students).*



What are some techniques you can use with a group?

Set clear expectations

Time and space to collect their thoughts!!

Sticky notes

Inside-Outside Circle

Speaker-Listener or Speaker-Scribe Roles

Question Stems and Sentence Frames

- To add to what ____ said
- In my experience ____
- Say more about ____
- I wonder ____



- What is the value of human intervention on wild populations?

Learning Activity Stations

- Pronghorn Wildlife Corridor
- Ferret Bottleneck Effect
- Telemetry Engineering Challenge



A photograph of two coyotes in a natural, wooded environment. One coyote is in the foreground, looking towards the right, while the other is standing further back to the left, also looking right. The ground is sandy and covered with fallen branches and leaves. The background is filled with trees and dense foliage.

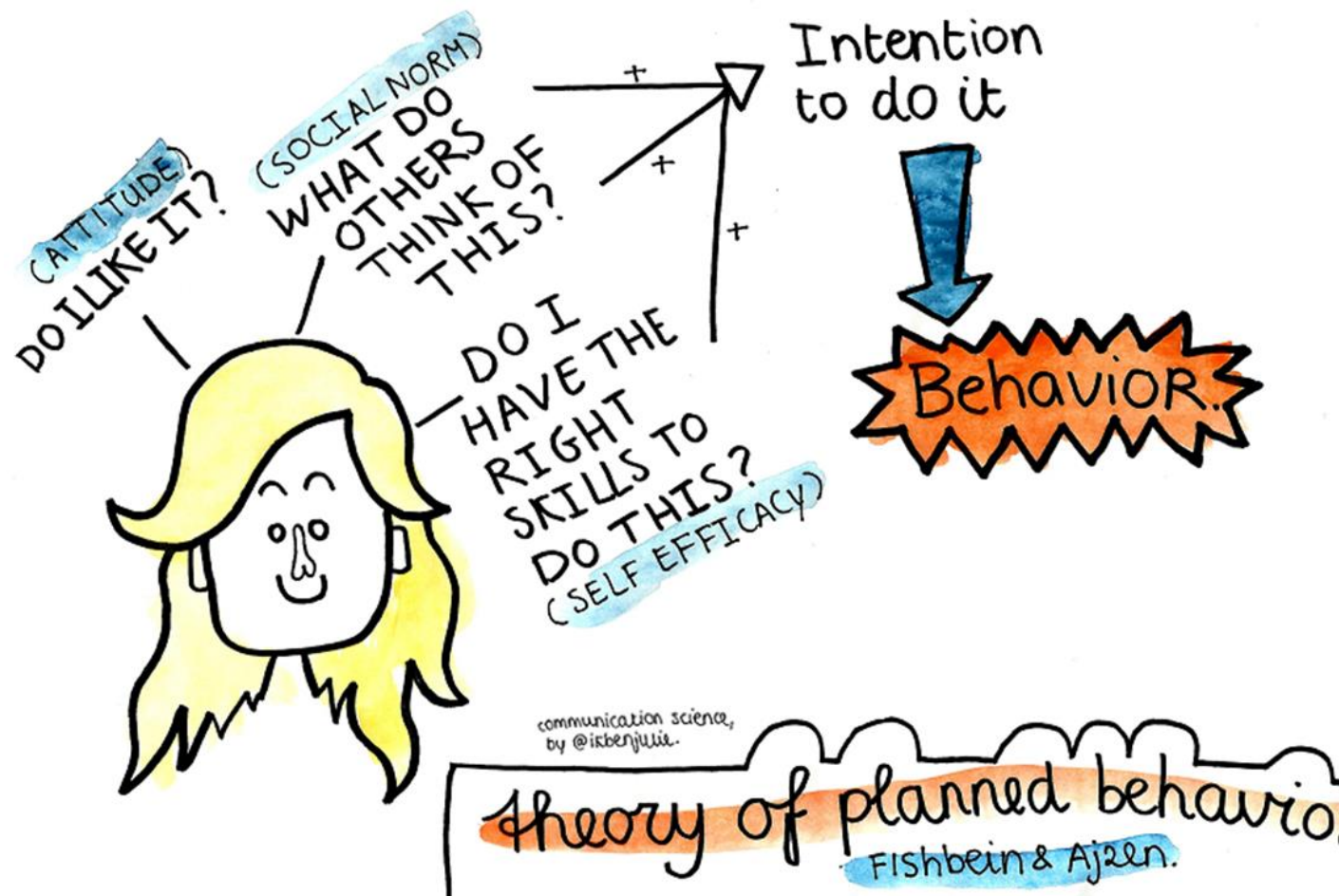
Debate

Part 4

- Action and Awareness Campaigns
- Create “Save a Species Plan”
- Present/Feedback
- Final Reflection



Awareness & Action Campaign



- Basics of behavioral psychology
 - Why should they care?
 - What is the impact?
 - Address barriers
 - Do it together!

Create Your
Save a Species
Plan!

5 more
minutes!



Feedback Sentence Stems



ONE THING I LIKE IS...



ONE SUGGESTION I HAVE
IS...



ONE QUESTION I HAVE
IS...

Reflection



What was easy and difficult?



Where could you see your students needing guidance or more structure?



Are there any questions about the process?

Glow & Grow

- One thing that makes them “glow” (i.e. something you are proud of doing or learning today)
- One thing that you want to “grow” (i.e. do more of or learn more about)



In the Future, We Hope You...

1

Complete the PAW curriculum with your classroom

2

Help or train at least one colleague on how to use the PAW curriculum

3

Provide feedback on your experience teaching it

4

Use the Phoenix Zoo resources in the future

Next Steps...



How you'll get the PAW resources



How you'll receive the stipend



Any questions or additional feedback?



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Tell Us What You
Think Now...



Project AZ Wildlife Teacher
Workshop Post-Assessment

