




## Lesson 6 Invasive Species

Teacher: Akira, Lauren, Mercedes

Grade Level: 8th

Lesson Length: 50 minutes

This lesson has been adapted from: [Invasive Species Game – Lesson Plan](#)

<b>AZ Science Standard:</b>	<p>6.L2U1.13 Develop and use models to demonstrate the interdependence of organisms and their environment including biotic and abiotic factors</p> <p>8.L4U1.11 Develop and use a model to explain how natural selection may lead to increases and decreases of specific traits in populations over time.</p>
<b>Learning Objectives:</b>	<ul style="list-style-type: none"><li>• Students will be able to describe how resources are limiting factors in an ecosystem</li><li>• Students will be able to share about the impacts of invasive species on ecosystem health</li></ul>
<b>Scientist of the Week:</b>	<ul style="list-style-type: none"><li>• Sidney Woodruff</li></ul>  <ul style="list-style-type: none"><li>• Native Reptile and Amphibian Conservationist</li><li>• University of California, Davis</li><li>• Sidney Woodruff (she/they) is a Black, biracial, queer, nonbinary Ecology PhD student at the University of California in Davis, researching native reptile and amphibian conservation. After receiving a BS in Wildlife Sciences and a BS in Forestry, Sidney spent time with the National Park Service at Yosemite National Park. In graduate school, they also dedicate themselves to mentoring and community-building by helping run M.U.S.E. (Mentorship for Underrepresented STEM Enthusiasts).</li></ul>



Vocabulary	Materials
<ul style="list-style-type: none"><li>• Invasive Species</li><li>• Non-Native Species</li><li>• Native Species</li><li>• Ecosystem</li></ul>	<ul style="list-style-type: none"><li>• <a href="#">Powerpoint</a></li><li>• <a href="#">Coding Worksheet</a></li><li>• <a href="#">Coding Activity</a></li></ul>
<p style="text-align: center;"><b>Guiding Questions</b></p> <ul style="list-style-type: none"><li>• What are some local invasive species that are threatening our local ecosystem?</li><li>• What are invasive species, why are they a problem, and what can be done about them?</li><li>• What role do humans play in management of invasive species?</li></ul>	

### Teacher Preparation:

- Email partner teacher ahead of time the lesson plan, slides, and coding activity
- Send the coding activity as a link to the google drive instead of a .ipynb file to make sure it does not get deleted from attachments
- Emphasize to partner teacher that they should share the link to all the student in the class ahead of time
- We will show them how to access the file during our lesson

### Engagement Activity (15 Minutes):

- Invite students to define the terms “Invasive species, non-native species, and invasive species.” It is recommended that student start as think-pair-share activity in small groups and then come together as a class
1. Have the students reflect in their journals about what they think is the difference between invasive, non-native, and native species. Give them 3-5 minutes.
  2. Have them pair with the person next to them to talk about what conclusions they came up with. Give them 3 minutes.
  3. Bring the group together and have each pair share their thoughts.
  4. Then, connect their ideas to the following definitions:
    - Native: species that naturally lives in a region (Explain how native species are often referred to as indigenous species as this can be helpful in remembering the terms definition)
    - Non-native: species that does not naturally live in a region
    - Invasive: species that does not naturally live in a region and disrupts its ecosystem
- Ask students, “Can you think of examples of invasive species here in Tucson?” Follow up with, “How might invasive species affect humans?”
  - Play the [following video](#) (4:45)

### Exploratory Activity (15 Minutes):

- Ask students what they remember about our previous coding activity
  - Guiding Questions:
    1. How can coding help us pick apart and visualize large datasets? ie. pandas
    2. How can coding improve efficiency?
    3. What are problems that coding can assist in solving?
- Introduce to the class that we are going to do another [coding activity](#)



## The Bio/Diversity Project

- Pass out [coding worksheet](#) to class.
- Split the students into pairs; each student should still have a laptop to follow along with the activity
- Have the students sign into their chrome books and open google drive and type in the search bar Invasive\_Species
- Link or show screenshots of activity in slides and have the students follow along with you
- As you move through the activity, pause at each step that correlates with the worksheet
- While going through the worksheet, make sure to discuss results that the students collected

### Evaluation Activity (5 Minutes):

- On butcher paper or whiteboard, draw a web with the following prompt in the middle:
  - “What is one thing that we can do to help prevent invasive species in Tucson?”
- Invite a student volunteer as a scribe for discussion they will write their classmates thoughts on the web
- Have some examples prepared so students can have something to bounce off from ie:
  - go on buffelgrass pulls ie. service projects
  - workshops to help the community identify native and invasive species to spread awareness
  - planting native species ie. cacti
  - clubs
  - infographics / posters

### Reflection Time (5 Minutes)

- Why are invasive species a problem, and what can be done about them?
- What was fun about our activity?
- What was challenging?