**iNaturalist Bio Blitz**

**Activity 1**

**Science Standards**

BIO1.LS2.5 - Analyze examples of ecological succession, identifying, and explaining the order of events responsible for the formation of a new ecosystem in response to extreme fluctuations in environmental conditions or catastrophic events.

BIO1.LS4.3 Identify ecosystem services and assess the role of biodiversity in support of these services. Analyze the role human activities have on disruption of these services.

**Math Standard**

 A1.S.ID.B.4 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.

***\*\*Teacher Notes -***

* 1. Make an account yourself on iNaturalist and play around for a while before introducing this to your students.
	2. The site depends on quality observations and you will have a responsibility to monitor their work.
	3. Use the [teacher guide](https://www.inaturalist.org/pages/teacher%27s%2Bguide) provided by iNatualist to get some important tips on classroom management and an alternative site for younger students.
	4. All observations should be taken on public property. INaturalist is very specific about the location of observations so students should never make observations at home.

**Engage**

Display some species for the students to try to identify. Real samples are best but a slideshow will work. Try to select species that many students will be able to identify.

**Explore**

* 1. Ask students to download the iNaturalist app
	2. Use the app to identify the species observed earlier.
	3. Take a walk around the school campus and let the students add a few observations to the project.

\*All photos should be taken on public property. Stress to the students that the app will share the location of species with everyone who has an account on iNaturalist. \*

**Explain**

* 1. Provide time for students to accurately identify the species observed.
	2. Encourage students only to identify an organism to the level at which they are confident.
	3. Students will likely get some help from the iNaturalist community with identification. They should by no means identify each other's photos.
	4. Ask them to comment on the photo if they think they know the species.

**Elaborate**

Data collected after a set period “4-6 weeks” should be recorded by student teams. Teams should pay attention to the available water in the area as well as other habitat needs.

Student teams of two should answer the following questions about the project on iNaturalist at the close of the Bio Blitz.

1. Which public areas in the county have observations?
2. How many observations were made during our project?
3. How many species identified?
4. What was the most common species?
5. Would the time of year effect the species observed?
6. Describe patterns of observations – Create a scatter plot to represent student data.
	1. How close to water?
	2. Describe the habitat where most species were observed.
	3. More animals? Plants?
	4. Do more mature successional stages have species diversity?

**Evaluate**

Student teams should create a project report for the Bio Blitz.

The report should include.

1. Team Member Names
2. Students should pose a research question based on the project observations.
3. Student teams should develop a hypothesis based on observations and research. This is a good opportunity to talk about testable questions.

 What makes a good hypothesis?

 Discuss quantitative vs qualitative observations.

Examples... just a few..

* 1. Plant species are more diverse as the researcher nears water.
	2. The early successional stages are more biodiverse than a climax community.
	3. Human activity negatively effects biodiversity.
	4. Human activity positively effects biodiversity.
1. Discuss as a class what an experiment might look like to test their hypothesis.
2. Conclusions will not likely be proven with the limited time available. Students will no doubt find many conclusions shared online. What a great opportunity to discuss how two scientists may arrive at different conclusions.