Teacher: Grade Level: 3rd-6th

Time: 1 hour Author: Michelle Coe

Next Generation	3-LS1-1. Develop models to describe that organisms have unique and				
Science Standards:	diverse life cycles but all have in common birth, growth, reproduction, and				
	death. 3-5-ETS1-3. Plan and carry out fair tests in which variables are				
	controlled and failure points are considered to identify aspects of a model				
	or prototype that can be improved. MS-ETS1-3. Analyze data from tests to				
	determine similarities and differences among several design solutions to				
	identify the best characteristics of each that can be combined into a new				
	solution to better meet the criteria for success.				
Enduring	LS3.A Different organisms vary in how they look and function because they				
Understandings:	have different inherited information; the environment also affects the				
	traits that an organism develops.				
Content Objective:	Students will work with a partner to complete their weekly Nature's				
	Notebook (NN) data sheet and collect information on fruits, flowers, and				
	buds. Students will work with their partner to upload that information to				
	the NN citizen science website under the appropriate group and plant				
	page. Students will use their remaining time to explore the NN website.				

Vocabulary	Materials		
Website	Scientific Journals		
Data	NN Data Sheets		
Username	Computers		
Password	Pre-generated Usernames/Passwords		
	Step-by-Step Data Entry Sheet		

Seasonality : This lesson works well during the beginning of the school year so that students can submit their own Nature's Notebook (NN) data into the NN website as well as explore other groups,						
plants, and animals featured on the site.						
Monsoon	Autumn	Winter	Spring	Dry Summer		
July-Sept.	OctNov.	DecFeb.	MarApr.	May-June		

Engage: Up to this point, students should be familiar with gathering information using site-specific Nature's Notebook (NN) data sheets. <u>Guiding Questions</u>: As a citizen scientist collecting data for a big, national project, what do you think is the best method for letting other scientists know about your work? Think-pair-share and record key suggestions on the board. Today, we will be learning a new way to communicate with NN scientists.

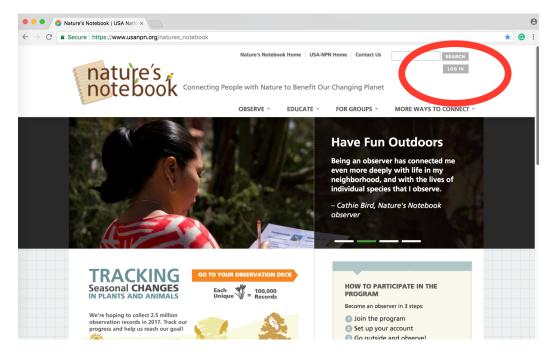
Explore: Introduce the Nature's Notebook website via live feed by visiting www.usa.npn.org/natures_notebook. Go over the title of this organization with students, USA (United States of America) NPN (National Phenology Network). Remind students that they are part of a national program that is tracking the seasonal changes in life cycle events of plants and animals (phenology). This program needs citizen scientists to function, and that is why our work is so important! By tracking and sharing our phenology data with other scientists all over the U.S., we are strengthening and expanding our knowledge about weather, climate, ecosystems, sustainability, and more.

Explain: Today we will learn how to input our data collections into this website so that others can view our work in real time. Review the step-by-step data entry sheet (below) with the class. Have everyone follow along as you read and show live-feed of the site.

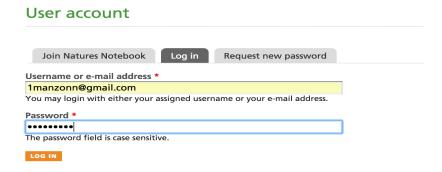
Elaborate: Ask students to sit next to their partner (or anyone that is studying the same plant species as them) in the computer lab. Students will log onto the computer with their personal student ID's and use pre-generated login information to get onto their group's Nature's Notebook site. Student-partners will work together to go through the step-by-step data sheet and input NN data.

Evaluate: Review with students the steps they must take to enter NN data on the website. Have students record their username and their password in their journals for future use. <u>Guiding Question</u>: Did anyone had a difficult time entering data? How did you and your partner solve that problem or how could you overcome it the next time we input data?

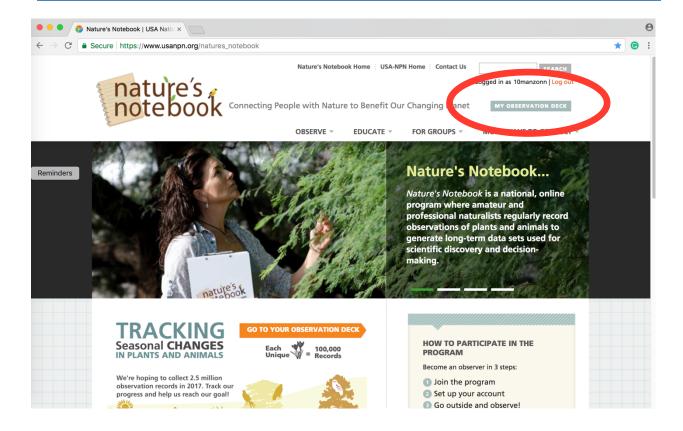
- 1. Open Google Chrome or a search engine
- 2. Type in www.usanpn.org/natures_notebook



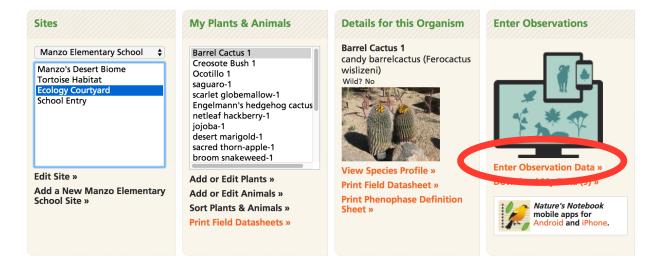
- 3. Click the Log In tab in the upper right-hand corner
- 4. **Enter** the **username** and **password** to Log In. *Teacher Note: Before doing this lesson, you may want to create a handful (~5-10) usernames and passwords for the website. Go to the website, click Login-> Join Natures Notebook->Enter New Login Information (username, email address, password). Make sure to click on the Partner Group for your school so that students are automatically directed to your school site when they log in. Example listed below.*



5. Once logged in, have students click My Observation Deck in the top right corner of the page.



Scroll down to the bottom of the page and have students click on the correct site name for your school site and group under the **Sites** column. Then, click on **Enter Observation Data** on the right.



7. Students will need to fill out the correct **Date** for their NN data sheet.

Home » Observation Deck » Enter Observations

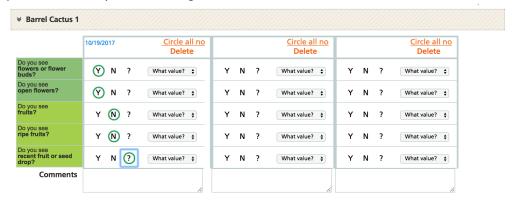
Enter Observations

For each phenophase listed, click: (y) if the phenophase was occurring; (n) if the phenophase was not occurring; (or (2)) if you were not certain of the species or occurrence of the phenophase. If you did not look for the phenophase, leave blank. Once you click "submit observations" your observations will show in blue, but may be edited (more info).

Select the site where your plant or animal is located. Site: (Ecology Courtyard)

Review submitted observations: (1) Column (1) Plant (1)

8. Students will need to scroll down the page until they find their correct **Plant or Animal** name and number. Once they find their correct plant or animal, students can **click Y, N,?** depending on their data collection responses for that day. *Teacher Note: if you do not have the students collecting data on all of the questions listed on the site, have students fill in the ? for any question that they are observing.*



9. Once complete, students will scroll down to the bottom of the page. In the bottom, right corner, have students click **Submit Observations**.



10. With any remaining time, have students explore the NN website and review other groups plants and animals. There are many articles, pictures, and fun facts that they may want to read. Students may also want to use this time to search for more specific facts and information about the plants and animals they are studying at their school by using a different website.