

Program Name: Nature's Notebook

Program Website: www.naturesnotebook.org

Program Contact: Erin Posthumus, Outreach Coordinator

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Locations: All regions



Project Summary:

Nature's Notebook engages observers across the U.S. in tracking the seasonal changes of plants and animals, a study called phenology. Observers register a site and add to it at least one individual plant and/or animal species from the Nature's Notebook species list. Observers may participate independently, registering a site in their backyard or other nearby location, or as a group of individuals called a Local Phenology Program that observe at shared sites. Observers use the Nature's Notebook app or paper datasheets to answer a series of yes/no questions for each individual plant or animal species about whether they see life cycle stages such as "open flowers" for plants or "nest building" for birds. Additional optional questions ask about the intensity, such as "what percent of flowers are open" or "how many birds". Observers are invited to collect data 2-3 times per week during the periods of greatest activity and less often in winter or other dormant periods, though any amount of observations is welcome! We estimate a single observation takes about 3 minutes for a trained observer. Data entered via the app are automatically entered into the USA National Phenology Network's Database; paper datasheets must be transferred online by participants onto the Nature's Notebook website. Data visualization tools are available to assist participants in viewing their data and those collected by other observers across the country.

Potential for application to the following STEM concepts:

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| <input checked="" type="checkbox"/> Biology/Ecology | <input checked="" type="checkbox"/> Measurement and Scale |
| <input type="checkbox"/> Physics | <input checked="" type="checkbox"/> Precision/Accuracy |
| <input type="checkbox"/> Chemistry | <input checked="" type="checkbox"/> Statistical Analysis and Patterns |
| <input type="checkbox"/> Earth Sciences | <input checked="" type="checkbox"/> Graphing Trends |
| <input checked="" type="checkbox"/> Cause and effect | <input checked="" type="checkbox"/> Stability and change |
| <input checked="" type="checkbox"/> Hypothesis testing | <input type="checkbox"/> Other: _____ |

Requirements of Participation

Time/Physical Commitment: Flexible - each observation takes 3 minutes, we recommend selecting 2-3 individuals of each plant species to observe

Tools Needed: Nature's Notebook app OR printed paper datasheets from website. Binoculars may be helpful for some animals or tall trees.

Target Age for *Independent* Participation: 14 and above

Other Requirements:

Nature's Notebook provides the greatest benefits as a multi-year program where individual plants are tagged for observation or animal species are observed at the same monitoring sites over multiple years. Teachers may engage different students over multiple years in observing at the same locations, building a dataset that students can investigate to see changes happening from year to year, exploring data collected by previous students. Students must be 14 or over to create their own account, though teachers can create an account for the class. We recommend participants take at least the first module of our online Observer Certification Course, which is estimated to take 45 minutes. Other modules are available that cover more advanced topics.