

# Introduction to Phenology Activity

## Make a Plant Observation

### Introduction

Whether you have an afternoon, a few weeks, a season, or a whole year, your students can make an important contribution towards a better understanding of changing climate in your area. In this activity, your students will learn how to submit plant observations to Project BudBurst, a national network of citizen scientists who make observations of the timing of leafing, flowering, and fruiting phases of plants (plant phenophases) throughout the year.

Project BudBurst has two protocols, Single Reports and Regular Reports, that you can follow to record your observations. Single reports refer to observations that are made once, for a particular plant, at a particular location. Regular Reports are “event-based.” Event-based phenophase observations refer to specific changes in a plant’s stage during a growing season and require you to monitor a plant regularly, throughout the growing season, so that you can detect the first signs of change. We’ll focus on Single Reports in this activity, but you can learn more about Regular Reports on the Project BudBurst website ([budburst.org](http://budburst.org)).

**Estimated Time:**  
30 minutes - 1 hour

**Materials:** Internet connectivity, an Internet browser (e.g., Google Chrome, Mozilla Firefox, etc.), ability to print from the Internet, writing utensils

### Background Information

Single Reports are status-based phenophase observations that you make one time, for a particular plant, in a particular location. Thus, you are observing the phenophase ‘status’ of the plant at that particular time, for example, the plant may be in the middle of its bloom time and thus “flowering” (phenophase: flowers-middle).

Examples of these status-based phenophase events:

*Leaves unfolding:* you can specify whether leaves are in the early middle or late stages of unfolding.

*Flowers:* you can specify whether the plant is in the early, middle or late stages of bloom.

*Changing Color:* early, middle or late stages of leaf color change.

### When To Consider Single Reports

Single Reports are ideal if you simply can’t commit to watching a plant during the entire growing season. Granted, you can certainly go back and report on that plant again. But Single Reports allow for greater flexibility in participating in Project BudBurst. Single reports also make good homework assignments for your students as they can be done anywhere – while out on a hike, walking through the neighborhood, or on family vacations. You may choose to have your students submit

a single report if you know that regular visits/observations to a site are not feasible. Single reports allow your students to contribute useful information to Project BudBurst, without the longer term commitment.

### Selecting a Plant For Single Reports

Single Reports can be made for both plants that are found on the Project BudBurst Master Plant List or for another plant that you find while out and about. Project BudBurst has single report forms for each plant group. We recommend you find a plant that is in a convenient place for you, such as a street tree on the block where you live, a plant in your yard, at your workplace, schoolyard or in a nearby park.

## Activity Instructions

### Task 1: Register Your Classroom

Registration is easy. As an educator, you will create one managing account for your site(s) and students. This should be tied to your professional email account. (Note: If you would like to have a separate account for personal involvement in Project BudBurst, that is great! Please simply register again with your personal email address, creating new login information.)

**Register:** To set up a Project BudBurst teacher account, go to the My BudBurst button on the menu bar and click the Join link to access the Registration page (<http://budburst.org/register.php>). Here you will be asked to verify that you are at least 13 years old and then for Name, City, and State, along with an email address. Be sure to click the “I am an Educator” option. You will also be asked to provide a Login name and Password that you will use to access and manage your

account. *Note: The login name is a unique identifying name. Please do not use your email address.*

Completing this step will take you to your personalized My BudBurst Page where you can submit observations, subscribe to the newsletter, and view your data. For those planning to make Single Reports observations, site registration is not required. In the future, if you'd like to submit Regular Reports, you'll need to choose the Regular Reports option to register site(s) and plant(s).

Congratulations! You and your students are now ready to make observations and submit data. You can submit data at any time. Simply have them go to the Report Now button and login to access the MyBudBurst Page where you can enter their reports.

### Task 2: Observe Your Plant

**Choose a plant.** This may be a plant in your neighborhood, yard, school ground, or somewhere convenient for you.

**Download a Single Report datasheet.** Once you've selected your plant, you can download an easy-to-use Single Report datasheet for the appropriate plant group. You can print this report form and use it to record information about your plant. That way you won't forget anything!

**Determine your plant's location.** Tell us the latitude, longitude, city, state, and zip of your plant. Use the Project BudBurst Geocoder or a GPS unit to determine latitude and

longitude.

**Make observations using the Single Report Form.** Choose the phenophase category that best describes what your plant is doing.

**Share your observations Online.** Your Project BudBurst investigation is not complete until you have entered your data online. By doing this, you not only contribute to science (citizen science) but you also share your plant's story with others. This final step only takes a few minutes on our website.

## Wrap-Up

After making your observation, your data will be submitted to our online database so that scientists can use the data to learn more about the responsiveness of individual plant species to changes in climate locally, regionally, and nationally. Thousands of people from all 50 states have and continue to participate. The Project BudBurst data are freely available to all in several formats on the [website](#).

Participating in Project BudBurst provides an authentic context for learning more about plants, adaptations, populations, ecosystems, and the interactions between organisms and their environments. Involvement in Project BudBurst will give students valuable experience in collecting data and will give them the opportunity to make meaningful contributions to ongoing scientific research where scientists are very interested in the observations students across the country are making.