

Phenology: Background Info for Teachers

- What is Phenology?
 - Phenology is literally "the science of appearance." The word phenology comes from the Greek words "phaino" (to show or appear) and "logos" (to study). It is the study of the timing of the biological events in plants and animals such as flowering, leafing, hibernation, reproduction, and migration. Scientists who study phenology are interested in the timing of such biological events in relation to changes in season and climate.

- Why is Phenology important?
 - Changes in the timing of phases of the plant life cycle, known as *phenophases*, are directly affected by temperature, rainfall and day length. While these factors change through the year because of seasonal variation, temperature and rainfall are also changing in many regions because of climate change.
 - That's where plants come in. By monitoring plants and noting when the first buds appear, when the first flowers appear, when leaves drop in the fall, and other parts of plant life cycles, scientists can figure out how seasonal patterns are changing and make predictions for the future.
 - By observing, recording, and sharing how and when the plants in our area are changing with the seasons, we are contributing scientific data that can help us understand how plants are responding to this year's seasons and long-term changes in climate. Scientists are using data about the timing of seasonal changes in species in computer models to predict how climate and ecosystems will change decades and even centuries into the future.

- How does Phenology fit in at Foothill Horizons/Your School?
 - Phenology is a great tool for taking student observations to the next level. It offers another form of guided exploration, and gives students the tools to make close, detailed observation that complements existing practices (ie 'I notice, I wonder, It reminds me of').
 - It represents an application to making observations, and provides students a reason for exploring and observing (ie it answers 'So What?').
 - By sharing our data, phenology provides a tangible service and connection between our students and the broader scientific community.
 - It aligns well with the Next Generation Science Standards. Students will ask questions, carry out investigation, and analyze and interpret data.

Deciduous Tree Report Card

Type of Tree

Date

What is your tree doing now?

(Check the most appropriate option in each category below.)

<p>Leaves Unfolding</p> <p>_____ No leaves</p> <p>_____ Early: Only a few leaves have unfolded from the buds (less than 5%)</p> <p>_____ Middle: Many leaves have unfolded from the buds</p> <p>_____ Late: Most leaves are fully unfolded (over 95%)</p>	<p>Leaves Changing Color</p> <p>_____ No leaves have changed color</p> <p>_____ Early: Only a few leaves have changed color (less than 5%)</p> <p>_____ Middle: Many leaves have changed color</p> <p>_____ Late: Most leaves have changed color (over 95%)</p>	<p>Leaves Dropping</p> <p>_____ No leaves have dropped</p> <p>_____ Early: Only a few leaves have dropped (less than 5%)</p> <p>_____ Middle: Many leaves have unfolded from the buds</p> <p>_____ Late: Most leaves are fully unfolded (over 95%)</p>
<p>Flowers</p> <p>_____ No flowers</p> <p>_____ Early: Only a few flowers have emerged (less than 5%)</p> <p>_____ Middle: Many flowers have emerged</p> <p>_____ Late: Most flowers have wilted or fallen off (over 95%)</p>	<p>Fruit</p> <p>_____ No ripe fruits</p> <p>_____ Early: Only a few ripe fruits are visible (less than 5%)</p> <p>_____ Middle: Many fruits are ripe</p> <p>_____ Late: Most fruits have fallen from the plant (over 95%)</p>	