Dig Deeper

PHENOMENAL PHENOLOGY

What is phenology?

We can learn a lot about the environment by looking at how plants and animals change and behave in different seasons. Phenology is nature's calendar—it's when flowers bloom, when a robin builds its nest, and when leaves change colour. Investigate some examples of phenology in Surrey's urban forest. What can we learn by going outside throughout the seasons?

Guiding Questions

- How do local plants and animals change throughout the year?
- Why do plants flower at different times?
- What do deciduous trees look like in different seasons?
- Can you list five examples of phenological changes you can see in Surrey?
- What factors trigger changes in plants? What about in animals? (e.g. when to fly south)
- How are animals adapted to the phenology of plants? What signals do they use?
- What are phenophases?
- How long have humans been studying phenology?
- What are some phenological sayings or rhymes? (e.g. April showers bring May flowers.)
- In what ways do Indigenous peoples pay close attention to phenological processes?
- What does phenological data tell us about climate change? Are growing seasons changing?
- How is phenology important to humans? (Hint: think about allergies or agriculture.)?

Background

The study of a species' response to environmental change is called phenology. Phenological changes are regular and seasonal, making them useful for measuring long-term trends. Each year, plants and animals experience changes as seasons change. We can observe plants in different seasons and see patterns arise. Once we tune in to these changes, we begin to notice more patterns. Some of the most common phenological changes are:

- flowers blooming in the spring
- berries ripening in the summer
- leaves changing colour and dropping in the fall
- bare branches in the winter
- migration patterns

By making regular and repeated visits to parks and tuning in to the phenology of local plants and animals,students can become stewards of the environment.

- Get involved in PlantWatch or iNaturalist citizen science
- Learn about the local environment and its interconnectedness
- Study the history of phenology and its connection to climate change research
- Make and record observations, and make predictions

Curricular Connections

Content for students to explore:

Kindergarten: weather changes and seasonal changes
Grade 1: behavioural adaptations of animals, the knowledge of First Peoples: knowledge of the local landscape, plants, and animals; understanding and use of seasonal rounds
Grade 2: life cycles, First Peoples use of their knowledge of life cycles
Grade 3: biodiversity in the local environment, observable changes in the environment
Grade 4: sensing and responding: humans, other animals, plants
Grade 5: First Peoples concepts of interconnectedness in the environment
Grade 6: multicellular organisms rely on internal systems to survive, reproduce, and interact with their environment; connections to community
Grade 7: First Peoples knowledge of changes in biodiversity over time, evolution
Secondary: climate change, ecology

Curricular competencies for students to develop:

- Experience and interpret the local environment
- Identify questions to answer or problems to solve through scientific inquiry

Surrey Parks works together with the community to celebrate nature and protect the environment.

Visit us online to plan your park visits, connect with nearby nature and help your students become stewards of our urban forest.

Additional Resources

Garry oak flowering times chart goert.ca/documents/GOERT-native-plant-flowering-times.pdf
Phenological lesson plans harvardforest.fas.harvard.edu/PhenologyLessonPlans
The Phenology Project cpp.usanpn.org/about
University of Minnesota's Citizen Science in the Classsroom: Phenology video

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