

Teacher-Led Remote Learning Activities

Harvard Forest Schoolyard Ecology Spring Workshop

Session Four



Activity:

- **Description of Activity:** This is one of four lessons in a unit on plants and plant life cycles. This lesson is part of a new distance-learning curriculum being developed by CT Audubon Society in response to the COVID-19 pandemic.
- **Teacher/Author:** Marjorie Porter
- **School:** Connecticut Audubon Society, Center at Pomfret
- **Level:** 2-4 Grade Science
- **Schoolyard Project:** Buds, Leaves and Global Warming

Objectives for the Plant Life Cycle Unit: Students will

- *Find evidence that seeds are important to animals such as birds*
- *Investigate and record information about seeds in their own back yards*
- *Identify, discuss, and record information about the steps of a plant life cycle*
- *Understand that plants are living things, and that they have basic needs in order to survive*
- *Develop a simple model of a seed to explain how it works*
- *Develop their own questions about plants that can be explored*

NGSS Performance Expectations for the Plant Life Cycle Unit:

2-LS2-1., 2-LS2-2., 2-LS4-1., K-2-ETS1-2., 3-LS1-1., 3-LS3-1., 3-LS3-2., 3-LS4-2., 3-LS4-3., 4-LS1-1. ,3-5-ETS1-3.



The Connecticut Audubon Society's Science in Nature distance learning curriculum

Our collection of at-home science units are designed to:

- Include a variety of topics:
 - Bird ecology
 - Plant life cycles
 - Weather and climate; Changing Earth
 - Ecosystems and Adaptations
- Be fun with lots of questioning and investigating
- Embrace reading, writing, and math
- Align to NGSS, grades 3-6
- Be broken into manageable 20 min. sections for children encourage them to enjoy learning about nature at home!
- Encourages learning in nature

Science units:

- Are Phenomenon-based
- Provide hyperlinks to web sites and videos via google searches and QR codes
- Embrace the 8 practices of science and engineering
 - Asking questions and defining problems*
 - Developing and using models*
 - Planning and carrying out investigations*
 - Analyzing and interpreting data*
 - Using math and computational thinking*
 - Constructing an explanation and designing a solution*
 - Engaging in an argument stemming from evidence*
 - Obtaining, evaluating, and communicating information*
- Encourage citizen science
- Suggest “follow-up” activities such as simple engineering projects, etc.

CONTEXT: I will be showing you Lesson #6 of lessons #5-8

Sample of
Lesson #5

Making the
connection
between birds
and seeds

Outdoor challenge:

Work with an adult in your household to find some maple seeds from last fall.

Look carefully along paths, sidewalks, and cracks in the pavement.

Gently pull on the tough seed “coat” to lift the seed up from the ground. You will likely *discover* that something amazing has happened!

See examples ►



To wonder:

Many seeds are hard for birds to crack.
What causes that?

Sample of Lesson #7

Continuing plant observations & studying seed growth



Plants are living things! Let's review:

Continue to observe and record changes in your plant buds! **Reminder...**
your data table should look like this:

Date _____ Temperature: __ °F	Date _____ Temperature: __ °F	Date _____ Temperature: __ °F
<i>Sketch of my twig:</i>	<i>Sketch of my twig:</i>	<i>Sketch of my twig:</i>
<i>What I noticed happening:</i>	<i>What I noticed happening:</i>	<i>What I noticed happening:</i>

Study the photograph on the right. →

What happens in the spring to cause a plant's leaf buds and flower buds to develop? What makes this change occur?



Write your ideas down on paper.

Scan this QR code to watch a short video about buds.



Notice:
**All the leaves
turn green!**

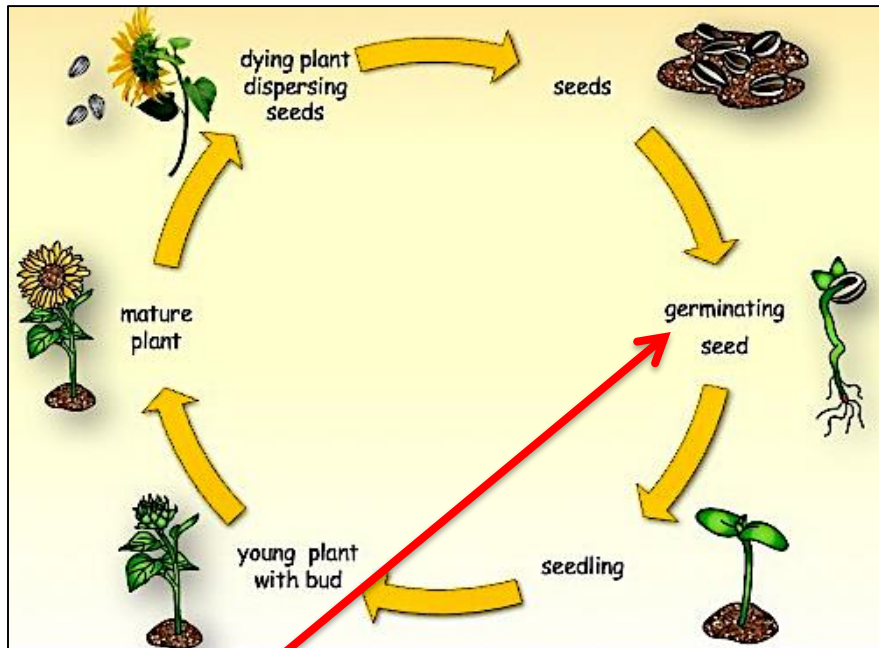


Parents: If you cannot scan the code, Google search “time lapse spring awakening” or type in this URL: <https://bit.ly/2KClGQv>



Lesson #6

Plants are living things! Let's review: In your journal, or on a piece of paper, write about something **you** have now observed and learned about plants. What do you think this means about plants?



Example:

I observed a maple seed from last autumn. The baby plant had begun to grow.

I learned that the root came out of the seed first.

I think this means that a plant needs water right away.



I observed:

I learned that:

I think this means:

Plants are living things: Connections

Scan this QR code to watch a short “Dr. Binocs” cartoon about plant parts.



Google search: “dr binocs plant video” or visit: <https://bit.ly/3bGdieE>

Check off ✓ each plant part as soon as you hear about it in the video:

- ___ leaf
- ___ bud
- ___ flower
- ___ stem
- ___ fruit
- ___ root

I think the most awesome plant part is the _____

because _____

Plants and “Nature’s Calendar”

To watch this important video about plant “phenology” scan the QR code,



or visit this web address: <https://bit.ly/2RTbXcO>

After you set up a plant buds “phenology” investigation, what data or evidence will you be collecting?



Shadow Puppet Edu:

Free app for developing presentations grades 2-12





Fun with Phenology
(pronounced *fen-ol-a-gee*)

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Three-week Phenology Investigation Challenge:

1. With an adult's help, find a shrub or tree in your yard that you can watch over time.
2. Select one that still has very small (not puffy) buds.
3. Tie a small string or ribbon on the branch you have selected.
4. Draw a simple sketch of the buds on your twig. If you think it will be helpful, take a photo of your twig. Add labels and measure length and width if possible.
5. Record the date, and label plant parts such as the buds and stem.
6. Copy the chart on the next page to keep track of your buds over time.





Conserving Connecticut's environment through science-based education and advocacy

Three-week (Or Three-day indoor) Phenology Investigation Challenge

In your science journal, or on a separate sheet of paper, describe the plan for your investigation:

- List the steps of your plan.
- Draw a simple sketch to help you explain how you will do it.
- Describe how and what you will measure
- Make a prediction of what you think will happen to the buds.

Date _____ Temperature: _____ °F	Date _____ Temperature: _____ °F	Date _____ Temperature: _____ °F
<i>Sketch of my twig:</i>	<i>Sketch of my twig:</i>	<i>Sketch of my twig:</i>
<i>What I noticed happening:</i>	<i>What I noticed happening:</i>	<i>What I noticed happening:</i>



For more information about our distance-learning curriculum, contact:

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