

Earth Day Phenology Bingo



For 10-150+ players of all ages, abilities, attention spans & allergies

Materials

- Scavenger Hunt lists
- Pencils, pens, crayons and/or makers
- Large Bingo posters (one per team)
- Tokens (eg. paper flower cut-outs with tape on back) (optional)
- Slips of paper with one list item each
- Hat (or bowl, basket, etc.) for drawing slips
- Prize(s) (optional)

Introduction

What are some of the signs of spring you've experienced in nature recently? [Folks might name either biological changes (like birds singing, flowers blooming or pollen allergies acting up) or non-biological/climatic changes (like longer, warmer days and more sun and/or rain).]

These changes are part of what scientists call "phenology" (literally, the study of appearances, from Greek "*pheno-*" to show/appear and "*-ology*" to study). ***Phenology*** is the science of how climate (temperature, precipitation and the changing amount of daylight) impact the timing of natural, biological events (such as plants blooming or dropping leaves, or animals migrating or mating).

Phenology is important because it teaches us about how plants, animals and the earth are all connected in an ***interdependent web*** (Unitarian Universalism's 7th Principle). When trees put out leaves or flowers, this provides food for insects like caterpillars and bees -- which in turn become a food source for birds and frogs, who are mating and feeding their young at this time. (*What would happen if the flowers bloomed too early one year and there were no bees around yet?*)

Do you know any scientists? You sure do!! What would you say if I told you that *you* could be a scientist just by going outside and exploring nature in your own backyard? Ordinary people all over the planet can be "***citizen scientists***" by paying attention to the natural world and writing down their observations. Things like: *How many birds did you see at your bird feeder today, and what kind were they? How many flowers have bloomed in your garden? What day did you see the first new leaves on your favorite tree?* Then, citizen scientists share their observations with others (often online), and researchers can come along and gather all that information together to see the BIG PICTURE of what's going on in nature during different seasons, and how changes in climate and the environment impact that big picture.

Today, we're going to play a game of Phenology Bingo, and you'll get the chance to be a citizen scientist, too -- you'll explore the natural world around you, and then get together with your fellow citizen scientist teammates to compare notes and pool your observations!

Instructions (for outdoor play)

After your introduction, explain the rules of the game (see below). It might be good to point out how some of the scavenger hunt items are animals that might be hard to spot or might get scared away by noise. Encourage people (younger kids especially) to be "sneaky, like nature spies," observant but quiet and gentle. If there are really little kids, remind them that we are using our senses of sight, hearing and smell, but not touch or taste! Don't pluck the flowers -- let them grow so we can enjoy them again next year!

1. Introduce the concept of "phenology" to the congregation (see above), and explain the rules of the game before getting started. Split everyone up into teams (easiest way to do this is probably by seating, especially if service is held in the round -- eg. each section is a team). (2 *min.*)
2. Hand out Scavenger Hunt lists (or make the lists available in the Order of Service), along with pencils, crayons, markers, etc.
3. Invite everyone outside to explore the church grounds, rain garden and orchard. Folks can work together in teams or family groups, or by themselves, to find as many of the items on their list as possible. To keep the game fun and the service moving, remind people they only have a certain amount of time to find the items -- maybe have someone announcing a countdown during the last few minutes (eg: "Five minutes left!" "Only three minutes left!" etc.) (10 - 15 *min.*)
4. Call everyone back inside! (2 - 5+ *min.*)
5. Once everyone's back inside, one person (the minister or game leader) stands up at the front and draws the slips of paper from a hat, calling out the item listed on the paper.
6. For each slip drawn, everyone on a given team compares lists to see if anyone on their team has that item marked off. If so, and the item also appears on their team's Bingo card, they place a token (or draw an X) on that spot.
7. Continue until one team is able to complete one full row, column or diagonal and calls out Bingo! (5 - 10 *min.*)
8. Depending on time, continue to play to determine 2nd, 3rd, etc. place -- or just for fun!
9. Wrap-up and transition.

(For indoor play -- In the event of terrible weather, instead of going outside, folks can stay inside and use this game as a getting-to-know-you game. Teams gather together and ask each other when was the last time they noticed/experienced each item on the list. For each item, if at least two people can recount an experience in the past [week/month], the group can check that item off their list.)

Wrap-Up

Wrap-up will depend on what comes next in the service. If there's time, it might be fun to bring all the groups back together and asking folks to share with some questions, such as the following:

- What was something you found that surprised you?
- Was there anything you found that no one else on your team did?
- Was there anything on the list that no one on your team found?
- How did you feel when you were outside exploring?
- How did it feel to get together with your team and compare results?
- What did you learn?



Further Resources

- "[What is Phenology?](#)" from the National Wildlife Federation
- "[Why Phenology?](#)" from the [USA National Phenology Network](#)
- "[Phenology and nature's shifting rhythms](#)," a TED talk by Regina Brinker
- Lots of other cool [phenology-based games and resources](#) on the [USANPN](#) website
- Citizen scientist projects that you can get involved in! Such as [Project BudBurst](#), [The National Ecology Observatory Network \(NEON\)](#), [The North American Bird Phenology Program](#), [Journey North](#), [Earth Alive](#) and [iNaturalist](#)

PLANTS

ANIMALS

- A TREE OR SHRUB THAT HAS:
 - LEAF BUDS
 - NEW LEAVES
 - FULLY-GROWN LEAVES
 - FLOWER BUDS
 - OPEN FLOWER BLOSSOMS
 - WILTED OR BROWN FLOWERS
- A SOFT-STEMMED PLANT THAT HAS:
 - FLOWER BUDS
 - OPEN FLOWER BLOSSOMS
 - WILTED OR BROWN FLOWERS
- A PLANT THAT STAYS GREEN ALL YEAR
 - RED CEDAR
 - DOUGLAS FIR
 - ANOTHER KIND? _____
- CONES ON AN EVERGREEN TREE
- A PLANT THAT LIKES SHADE OR DAMP
- YOUR FAVORITE COLOR FLOWER
- AN INVASIVE PLANT SPECIES
 - DANDELIONS
 - SCOTCH BROOM
 - IVY
 - ANOTHER KIND? _____

- AN INSECT
 - BEE
 - CATERPILLAR/BUTTERFLY
 - ANT
 - ANOTHER KIND? _____
- AN INSECT THAT IS:
 - IN OR ON A FLOWER
 - ON THE GROUND
 - FLYING IN THE AIR
- A BIRD
 - A BIRD
 - ROBIN
 - CROW
 - CHICKADEE
 - HUMMINGBIRD
 - ANOTHER KIND? _____
- A BIRD THAT IS:
 - SINGING OR CALLING
 - EATING OR FORAGING FOR FOOD
 - BUILDING A NEST
 - A BIRD'S NEST
 - A SOURCE OF WATER FOR AN ANIMAL
 - A SOURCE OF SHELTER FOR AN ANIMAL
 - A PERSON WITH SPRINGTIME ALLERGIES

P H E N O L O G Y

B	I	N	G	O
Your favorite color flower	A bird's nest	Ivy	A bird flying	A soft-stemmed plant with flower buds
A bee	A tree or shrub with new leaves	A person with allergies	An invasive plant species	A chickadee
A western red cedar	A crow		An insect on or in a flower	A tree or shrub with open flowers
A source of water for an animal	A plant that likes shade or damp	A bird singing or calling	Cones on an evergreen	A bird eating or looking for food
A soft-stemmed plant with wilted flowers	An insect on the ground	A dandelion	A caterpillar or butterfly	A Douglas fir

