TEACHER GUIDE

POLLN8

Pollination, Native Pollinators & Meadow Ecology

Ages 4–9

guide the bee. wake the meadow.

polln8.me · polln8.me/field-guide · polln8.me/teacher-guide

A free companion for parents, homeschoolers, and early-elementary educators

HOW TO USE THIS GUIDE

Wonder, don't quiz

POLLN8 was made to be felt, not quizzed. This guide follows the same spirit. It gives you a few gentle ways to wonder alongside a child before, during, and after they play — plus low-prep activities that move learning from the screen into hands, paper, and the outdoors.

You do not need a science background. Every prompt is open-ended. There are no right answers to collect and no worksheets to grade. Pick one activity, or string several together across a week. The meadow is patient, and so is this guide.

This guide supports early life-science learning goals — observation, cause and effect, and the relationships between plants and animals. It is not a formal curriculum and is not tied to any standard. Use it as a springboard for curiosity.

LEARNING GOALS

Observation. Noticing color, shape, movement, and change in a living system.

Cause & effect. “When I do this, that happens” — touch a flower, it blooms; a fuller meadow invites new visitors.

Plant–animal relationships. Flowers feed pollinators; pollinators help flowers make seeds.

Habitat needs. What living things require to thrive: food, shelter, water, and undisturbed space.

Vocabulary. A small, real set of nature words used in context — not memorized in a list.

A note on screen time. POLLN8 has no scores, no timers, no leaderboards, no ads, and no fail states. It is designed for short, calm sessions. Many activities here intentionally lead children away from the screen and into the real meadow.

A QUICK POLLINATION EXPLAINER

What is pollination?

Pollination is how pollen travels from one flower to another so plants can make seeds and fruit. Flowers use color, shape, and scent to invite visitors closer. As a pollinator drinks nectar or gathers pollen, a little pollen brushes onto its body — and it carries that pollen to the next bloom it visits.

That quiet hand-off, repeated flower after flower, is what lets meadows, gardens, orchards, and whole wild places keep growing. A great deal of the food we eat — and the wild plants that feed and shelter other animals — depends on pollinators doing their everyday work.

In POLLN8*, a child can feel it happen: guide the bee, brush a flower, and watch the meadow begin to wake.*

Different visitors follow different signals. Some forage in cold and drizzle, some only in warm sun, some after dark. Because each one reaches different flowers in different weather and seasons, a meadow with many kinds of pollinators stays alive longer and recovers more easily — diversity is the meadow's quiet insurance.

BEFORE YOU PLAY

Discussion prompts

Spend two or three minutes wondering together before opening the game. There are no wrong answers — the goal is simply to turn attention toward the living world.

- Have you ever seen a bee or a butterfly land on a flower? What was it doing?
- Why do you think flowers are so colorful and sweet-smelling?
- What do you think a bee carries from flower to flower?
- What might a meadow need to stay full of life?
- If you were a tiny pollinator, which flower would you visit first?

WHILE YOU PLAY

What to notice in POLLN8

Sit alongside the child and narrate gently, or let them lead and notice out loud together.

- The trail of the bee. Its fuzzy, pollen-dusted path is what first wakes the meadow.
- Cause and effect. Brushing a flower opens it. A fuller meadow invites new visitors on its own.
- Who arrives, and when. The hawk moth only comes at dusk. The bumblebee keeps working in drizzle. Day-flyers arrive once color fills the meadow.
- Difference between visitors. Bees, butterflies, a moth, a hummingbird, a hoverfly, a beetle — each reaches different flowers in different ways.
- The field-guide card. Every pollinator a child meets unlocks a card with its forage, habitat, and one true detail. Read it together.

ACTIVITIES

From screen to hands to outdoors

15-MINUTE ACTIVITY · quiet indoor play

Touch, bloom, notice

You need: the game and a quiet space.

1. Open POLLN8 together and let the child guide the bee to one flower.
2. Pause the moment it blooms. Ask: “What changed? What did the bee do to make that happen?”
3. Wake three or four more flowers. Notice the meadow growing fuller.
4. Watch for the first new visitor to arrive on its own. Ask: “Why do you think it came now?”

What it builds: *cause and effect, close observation, patience.*

30-MINUTE ACTIVITY · play + paper

Build a meadow map

You need: a large sheet of paper, crayons or colored pencils.

1. After playing, ask the child to draw their meadow from memory.
2. Add the flowers they remember, then the pollinators that visited.
3. Draw simple lines from each pollinator to the flowers it liked.
4. Talk about it: which visitor liked which flower? What does the meadow give them, and what do they give back?
5. Optional: add a sun and a moon to show day visitors and the dusk hawk moth.

What it builds: *plant–animal relationships, recall, representing a system on paper.*

OUTDOOR ACTIVITY · 15–20 minutes outside

Pollinator watch

You need: outdoor space with flowers (garden, park, or schoolyard), optional paper to tally.

1. Find a sunny patch of flowers and sit quietly nearby.
2. Watch for visitors. Make a small mark each time one lands.
3. Notice: is it fuzzy or smooth? Does it hover or crawl? Which flower does it choose?
4. Back inside, compare what you saw with the pollinators in POLLN8. Which matched? Which were new?

What it builds: *real-world observation, comparison, connecting game to nature.*

Gentle reminder: watch, don't touch. Pollinators are calm when left in peace.

VOCABULARY

A small word bank

Use these in context as they come up. There is no need to define them all at once.

Pollen the fine powder a flower makes; it must travel for new seeds to form.	**Nectar** the sweet liquid a flower offers; food and energy for visitors.	**Pollinator** an animal that carries pollen from flower to flower.
Meadow an open space full of grasses and wildflowers.	**Habitat** the place a living thing finds its food, water, and shelter.	**Forage** to search for and gather food.
Bloom when a flower opens.	**Native** a plant or animal that belongs naturally to a place.	**Diversity** many different kinds living together, which keeps a meadow strong.

WHAT POLLINATORS NEED

… and how we help

The same things that wake a meadow in POLLN8 help pollinators in the real world. A small garden, balcony pot, or schoolyard patch can do a surprising amount.

Nectar & pollen flowers are food: nectar for energy, pollen for growing young.	Native flowers local wildflowers and nearby pollinators grew up together and fit best.
Shelter & nests bare soil, hollow stems, old wood, and undisturbed grass.	Water & mud a shallow dish to drink from; damp clay to build nest walls.
Fewer pesticides skipping sprays keeps pollinators and the small insects many rely on safe.	Season-long blooms flowers from early spring through late autumn feed visitors all year.

MEET THE CAST

The 12 POLLN8 pollinators

The exact twelve visitors a child can meet and collect in POLLN8 — each detail drawn from the game's field guide.

01 Bumblebee

social bee

Buzz-pollinates by shivering flowers until hidden pollen falls free. It can warm its own flight muscles, so it forages in cold and drizzle when other bees stay home.

Help it: leave undisturbed grass where queens can nest underground.

02 Mining bee

ground-nesting native bee

An early-season pollinator that nests in the ground and visits low spring flowers. Many dig their own small nests in bare soil.

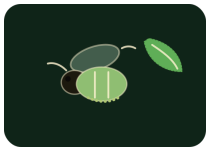
Help it: leave small patches of bare soil and plant early blooms.

03 Mason bee

solitary bee

An early, efficient pollinator that tumbles belly-first through blossoms. A few hundred can pollinate an orchard that would otherwise need tens of thousands of other bees.

Help it: offer hollow reeds near a patch of damp clay.



04 Leafcutter bee

solitary bee

Carries dry pollen on the underside of its abdomen. It snips neat oval pieces from leaves to wrap each egg in a tidy green nursery.

Help it: tolerate small leaf cuts and leave hollow stems for nesting.

05 Carpenter bee

solitary bee

A large, powerful flier that buzz-pollinates big open blooms. The biggest females bore smooth tunnels in wood, reusing them year after year.

Help it: leave a stump or untreated wood standing.

06 Sweat bee

solitary bee

A tiny, often metallic bee that pollinates small flowers in great numbers. Many shimmer green or gold.

Help it: keep small patches of bare, undisturbed ground for nesting.

The 12 pollinators — continued

07 Monarch butterfly

butterfly

Sips nectar through a coiled tongue, brushing pollen between sunlit blooms. Some travel thousands of miles, taking several generations to complete the round trip.

Help it: plant native milkweed and late-season nectar flowers.

08 Swallowtail butterfly

butterfly

A large butterfly that flutters constantly while feeding. The tails on its hind wings can fool a predator into striking a wing instead of its body.

Help it: plant parsley, dill, and carrot-family plants for caterpillars.

09 Hawk moth

moth

Hovers like a hummingbird to drink from deep flowers, pollinating after dark. One has a tongue long enough to reach a flower no other pollinator can empty.

Help it: plant pale evening-scented flowers; keep night lights low.

10 Hummingbird

bird pollinator

Drinks nectar mid-hover, brushing pollen on its head and bill. Its wings beat so fast they hum, and it can even fly backward.

Help it: plant native tubular flowers and skip pesticides.

11 Hoverfly

fly pollinator

A bee-mimicking fly that pollinates while feeding. Its young often eat aphids by the hundreds, so it pollinates and protects plants at once.

Help it: grow flat open flowers and avoid sprays.

12 Beetle

beetle pollinator

An ancient pollinator that carries pollen as it crawls through open blooms. Beetles were pollinating flowers long before bees existed.

Help it: leave leaf litter and old logs; grow open bowl-shaped flowers.

DISCUSSION QUESTIONS BY AGE

Two ways into the same meadow

Ages 4–6

- Which pollinator is your favorite? What does it look like?
- Can you buzz like a bumblebee or flutter like a butterfly?
- What does a flower give to a bee? What does the bee give back?
- Which visitor comes out when it gets dark?
- What color flowers do you think bees like best?

Ages 7–9

- Why does a meadow with many kinds of pollinators stay healthy longer?
- How is a hummingbird’s way of feeding different from a beetle’s?
- What might happen to the flowers if the pollinators disappeared?
- Why does the hawk moth visit at night while butterflies visit by day?
- What could we plant or leave alone to help pollinators where we live?

KEEP THE MEADOW GOING

Extension ideas

- Plant a small pollinator patch. A pot, a window box, or a corner of a yard with native flowers does a surprising amount.
- Draw a flower up close. Look at a real bloom and notice its parts — petals, center, scent.
- Compare two pollinators. Pick any two of the twelve and list how they are alike and different.
- Watch for the seasonal return. Note when the first bees appear in spring and the last visitors in autumn.
- Make pollinator cards. Let children draw their own field-guide card for a visitor they saw outside.

TEACHER & PARENT NOTES

Learning through play

POLLN8 teaches the way a meadow does — by inviting attention, not by quizzing. A few things worth knowing:

Calm by design

No scores, timers, leaderboards, streaks, or ads. Sessions are meant to be short and unhurried.

Learning through play

The science lands because the world feels alive. A child notices the hawk moth only comes at dusk, or that the bumblebee works in the rain. Curiosity does the rest.

No pressure to “finish”

There is no win state. Children can return to the same meadow as many times as they like.

Pairs with the real world

The strongest learning happens when the game sends a child outdoors to look more closely at the living things nearby.

POLLN8

guide the bee. wake the meadow.

Visit the POLLN8 Field Guide

Meet all twelve pollinators, learn what pollination is, and discover what pollinators need to thrive.

polln8.me/field-guide

Join the meadow list

Be the first to hear about new POLLN8 activities and companions. No spam, ever — just a quiet note when something new lands.

polln8.me/teacher-guide

Play POLLN8

polln8.me