

# Lesson Plan & Activity: (K- 5th grade)

## Theme & Objectives:

Students will learn about various pollinators and their importance to the Chesapeake Bay watershed. This is a hands-on activity that will allow students to create their own mini pollinator garden.

At the end of this activity, you will become a steward of the Bay!

## Discussion Questions:

- What do you already know about bees or pollinators?
- How are pollinators helpful for the environment and for the food we eat?
- Have you seen a lot of bees and butterflies near your house or in your community? If so, when?



# Bees & Pollinators



Did you know that June 22-28, 2020 is National Pollinator Week?

In 2019, last year, all 50 states advocated in support of Pollinator Week! Let's keep the momentum going! In celebration of National Pollinator Week, here is an educational activity you can compete at home.

For more information about Pollinator Week, how you and your family can get involved, and for more activities, visit [Pollinator Partnership](http://www.pollinator.org).



# Vocabulary:

**Pollinator**- an animal or insect such as a bee, bird, bat, beetle, hummingbird, moth, fly, butterfly, etc. that pollinates flowers and crops by using pollen.

**Ecosystem**- made up of and includes all of the living and nonliving things in a particular area.

**Pollination**- pollen moves from one flower to another flower of the same kind or crop by wind or by bees, birds, insects to make seeds.

**Threatened**- an animal or plant species that can become in danger and is starting to decrease in number of individuals.

**Endangered**- a plant or animal species that is in danger or at risk of disappearing completely and has a low number of individuals remaining in the world or in an area.



## A Bee's Journey

Have you ever seen a bee buzzing around in your yard or at school?

Let's imagine that you have a bee friend, let's give our bee friend a name!

As we watch our bee friend visit our yard, we see them visiting the flowers and plants.

However, due to the warming planet and people putting chemicals on their lawns, your bee friend is in danger from the chemicals, hot weather and pollution coming from the Earth and the **ecosystem**. Due to these actions mostly caused by humans, bee species are becoming or have become **threatened** and

**endangered** within the Chesapeake Bay watershed. (The bee) is not only your friend but is very important to the environment and the ecosystem. Bees and other **pollinators** help bring pollen to many different flowers all day which help make seeds. That is their job! These seeds grow into crops and food that you eat today! The bees and pollinators help grow fruits, vegetables, oils, honey and nuts! All of these foods are so delicious and nutritious for us to live! This is why we need bees and pollinators to stay alive and help them live in a healthy environment again!



# Pollinator Friends

Besides the well-known and popular honeybees and bumblebees, there are other important and valuable pollinators to be aware of! Bees help to pollinate by sipping the nectar and collecting pollen onto their bodies from flowers. Bees as well as birds, bats, butterflies, moths, beetles, and flies transport and carry pollen from flower to flower. They help spread the pollen to help pollinate and grow many crops which we eat.

Did you know that almonds are 100% dependent on honeybees?! That means almond plants requires honeybees to pollinate it.

Bats, like other pollinators such as bees and butterflies transfer the pollen from their bodies and onto another flower. Nectar-feeding bats are beneficial for the environment because they can carry large amounts of pollen in their fur and fly long distances as part of pollination. Many may think that bats only eat insects, but bats also feed on nectar-producing flowers. Learn more about Nectar-feeding bats and bat pollinators by visiting this [National Wildlife Federation blog](#).



The seed ball is supposed to grow flowers for bees and pollinators. The seed ball or balls can be placed in your yard or garden.

## **Activity: Seed Ball**



### **Materials Needed**

1. Clay/ powdered clay– enough to make into a medium sized ball or as many as you would like to make!
2. Flower Seeds (1 small packet) (Native flower seeds)
3. Soil
4. Water

C'mon let's get to the fun!

**First step**- Take a small-medium amount of clay and roll it into a ball using your hands.



**Second step**- Next, add a little bit of soil to mix into the clay and water.

**Third step**- If the clay and soil are too dry, add a little bit of water.



**Fourth step**- Add the seeds. You can add as many seeds as you would like.

**Fifth step**- Mix all of them together into the clay ball. Press the seeds into the clay and soil in order for the seeds to stick.



**Sixth step**- Now you are ready to plant your seed ball!



**Seventh step-** Head outside with your parent or guardian and pick an ideal spot. This spot should be in a grassy area with plenty of sunlight and a place to get enough water.

**Eighth step-** Throw the seed ball in that spot and watch it grow each day!



This is an exciting step towards helping out our fellow bee, butterfly, and pollinator friends! Once the flowers begin to grow, it will attract bees and other pollinators. Bumble bees are native and live throughout the Chesapeake Bay watershed. About 20 out of 250 species of bumble bees live within the Chesapeake Bay watershed. That is a lot of bumble bees!

## **Native Plants to grow in your garden or backyard!**

Visit the Chesapeake Bay Native Plant Center to find what native plants you can plant in your garden to attract pollinators!

### **Reflection**

Native plants are important because these plants and flowers attract bees and pollinators. Not only are you providing a valuable part to the ecosystem, it is fun to observe and watch these creatures visit your house! Watch from your window or from outside but be mindful not to go too close to the pollinator, or to disturb or touch the pollinator. It is busy being a busy bee! Create a pollinator journal and write or draw pictures of your pollinator observations.

To learn more about what native plants would be best to grow in your region, visit the [Pollinator Partnership](#). This is an Ecoregional Planting Guide that provides the best suited plants for your ecoregion! Read about some of the native plants for the Chesapeake Bay below.



## **Common/Butterfly Milkweed** (*Asclepias syriaca*)

Color: Pale purple, orange-yellow

Bloom time: May-July-Aug.

Needs full sun, wet soil

Attracts: flies, butterflies and bees!

The Milkweed attracts the well-known iconic beautiful Monarch Butterfly! The Monarch Butterfly has gorgeous orange, black and white coloring on its wings.

## **Purple Coneflower**

(*Echinacea purpurea*) The purple coneflower grows throughout the Chesapeake Bay watershed.

Color: Rose to purple

Bloom time: Jun-Aug

Needs full sun, part shade, wet to drained soil.

Attracts: bees & butterflies.



## **Goldenrod** (*Solidago spp.*)

Color: Yellow

Bloom time: Jun-Oct.

Needs full sun to part shade, dry to medium soil and well drained.

Attracts: migrating butterflies, bees, beetles and flies.

**Cardinal flower** (*Lobelia cardinalis*) The Cardinal flower grows all throughout the Chesapeake Bay.

Did you know? The cardinal flower also depends on hummingbirds for pollination!

Color: Red, blue or violet.

Bloom time: Jul-Sept.

Needs full sun, part shade, wet soil.

Attracts: Butterflies, bees and hummingbirds.



# References & Sources Used:

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<https://bees.techno-science.ca/english/bees/what-is-a-bee/default.php>

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<http://kids.nceas.ucsb.edu/ecology/endangered.html#:~:text=A%20threatened%20species%20is%20one,of%20threatened%20species%20is%20increasing.>

<https://www.pollinator.org/pollinator.org/assets/generalFiles/What-is-a-pollinator.pdf>

Similar lesson plan- [https://www.wardmuseum.org/app/uploads/2020/04/Lesson\\_PreK\\_Bees.pdf](https://www.wardmuseum.org/app/uploads/2020/04/Lesson_PreK_Bees.pdf)

Go to- <https://www.wardmuseum.org/learn-explore/education/virtual-learning/kids-activities-and-lesson-plans/>

For more lesson plans.

<https://blog.nwf.org/2014/06/not-just-the-birds-and-bees-6-fast-facts-about-pollinating-bats/>

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[https://www.chesapeakebay.net/news/blog/10\\_chesapeake\\_bay\\_native\\_plants\\_to\\_plant\\_in\\_your\\_yard\\_this\\_spring](https://www.chesapeakebay.net/news/blog/10_chesapeake_bay_native_plants_to_plant_in_your_yard_this_spring)

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Photos courtesy of Carly Sniffen.