

Pollinator Garden Handbook

Learn all about what pollinators are, why they are important, and how you can attract them to your garden!



Elementary Workbook: Grades K-5

Pollinator Garden Handbook

By Colleen Andrews, Outreach Coordinator, U.S. Fish and Wildlife Service

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Oregon State
University

Welcome!

We are going to learn all about pollinators in this workbook! You will learn what pollinators are, where they live, and why it is important to help them. You will even learn how to make your very own pollinator garden!

First, tell me a little bit about what you already know...

I know what a pollinator is **YES**

NO

Circle the pictures of animals that you think are pollinators



What is the name of this animal?



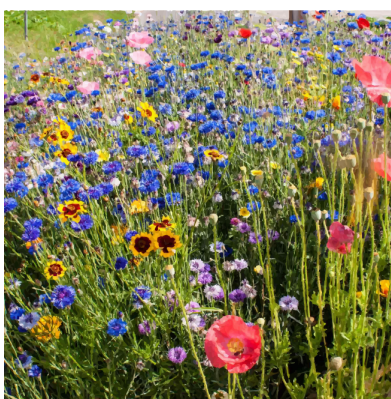
Circle all the things a plant needs to grow



Which space looks like the best garden for pollinators?



A. _____



B. _____



C. _____

Write one thing you are excited to learn about in this book on the line below:

How do plants grow?

Just like animals and people, plants need food, water, and shelter to grow safely. They also need sunlight!

With food that comes from healthy soil, some water, and sunshine, some plants can grow and bloom into beautiful flowers.

With the help of pollinators, flowers can make seeds that will someday grow into new plants.

What are some things that plants and people both need to grow?

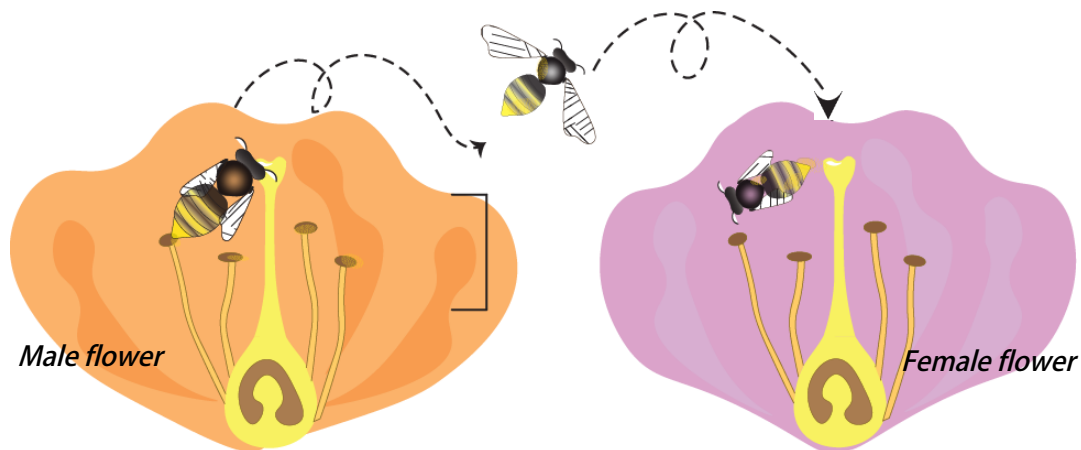
What is pollination?

Butterflies, bees, birds, and other insects, like moths or beetles, are all pollinators. They eat nectar and pollen from flowers.

Pollen is like a yellow dust that is very important to help plants make flowers and seeds. Pollen can be moved around by the wind or rain, but pollinators are also good at moving pollen. Flowers make a lot of pollen so that they can try to make as many seeds as possible.

When a pollinator lands on a flower to eat, pollen gets stuck on its hair or feathers. The pollinators carry around dusty pollen from flower to flower, helping female flowers grow new seeds. This is called pollination!

This is what happens during pollination:



When pollen from a male flower brushes off on a female flower, the female flower can make seeds!

Can you trace the path the pollinator might take to bring pollen to new flowers?

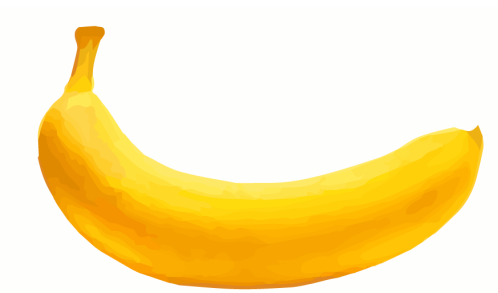


Why should we protect pollinators?

People live and work in places that used to be home to pollinators. It is important to give them back parts of their home. If we help pollinators, they can help us!

Pollinators are important because without them, plants would not produce seeds and no new plants would grow. Without pollinators, we would be missing a lot of things!

Pollinators help beautiful flowers grow. They pollinate plants that we like to eat, like apples, bananas, and tomatoes too. They also help plants that cows like to eat, like alfalfa. Without pollinators we would not have fruits and vegetables, or milk and cheese!



What is your favorite kind of flower?

Draw a picture of it!



What is your favorite fruit or vegetable?

Draw a picture of it!



Those flowers and foods probably wouldn't grow without the help of pollinators!

How would you protect pollinators?

Planting something called a pollinator garden is one way you can help protect pollinators. We will learn more about how to do this later in the workbook...

Let's learn about the pollinators that are in your neighborhood!

There are lots of different pollinators that live in the state of New York!



This is a ruby-throated hummingbird. This hummingbird is a pollinator that uses its long beak to drink the nectar from flowers.



bumblebee



mason bee

These are two types of bees that live in New York. Mason bees live alone and make nests above ground in small holes in trees or branches. The bumblebee lives with a colony in a hive. They are both important pollinators for flowers, fruits, and vegetables.

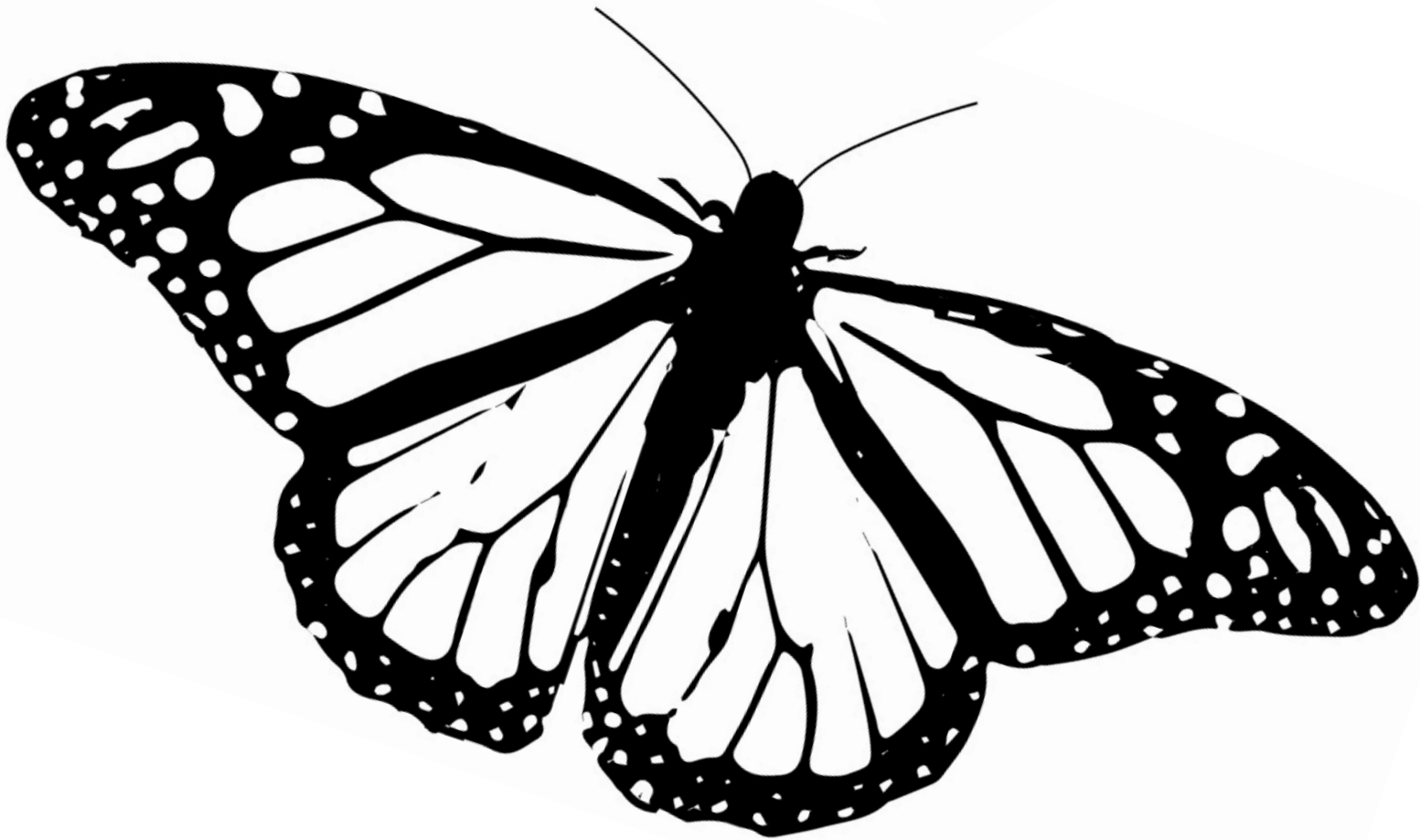


This pollinator is called a hoverfly. Hoverflies look like bees, and sometimes even sound like bees when they fly - buzz! Hoverflies do not have stingers though. Hoverflies are good at pollinating flowers.



Monarch butterflies are beautiful pollinators that you might already recognize. This bright orange butterfly migrates all the way to Mexico in the wintertime and then flies hundreds of miles back to your neighborhood each spring. They are great at pollinating flowers!

Color the monarch butterflies



After you finish coloring, can you circle what parts of the butterfly that you think pollen might stick to?

What makes good pollinator habitat?

Pollinator gardens have flowers that attract pollinators. Planting flowers that are all different colors, shapes, and sizes makes pollinators want to come visit your garden!

Big or small, pollinator gardens are important. Whether you plant one in your backyard, at your school, or even just plant some flowers in a flower pot outside, you are helping your neighborhood pollinators!



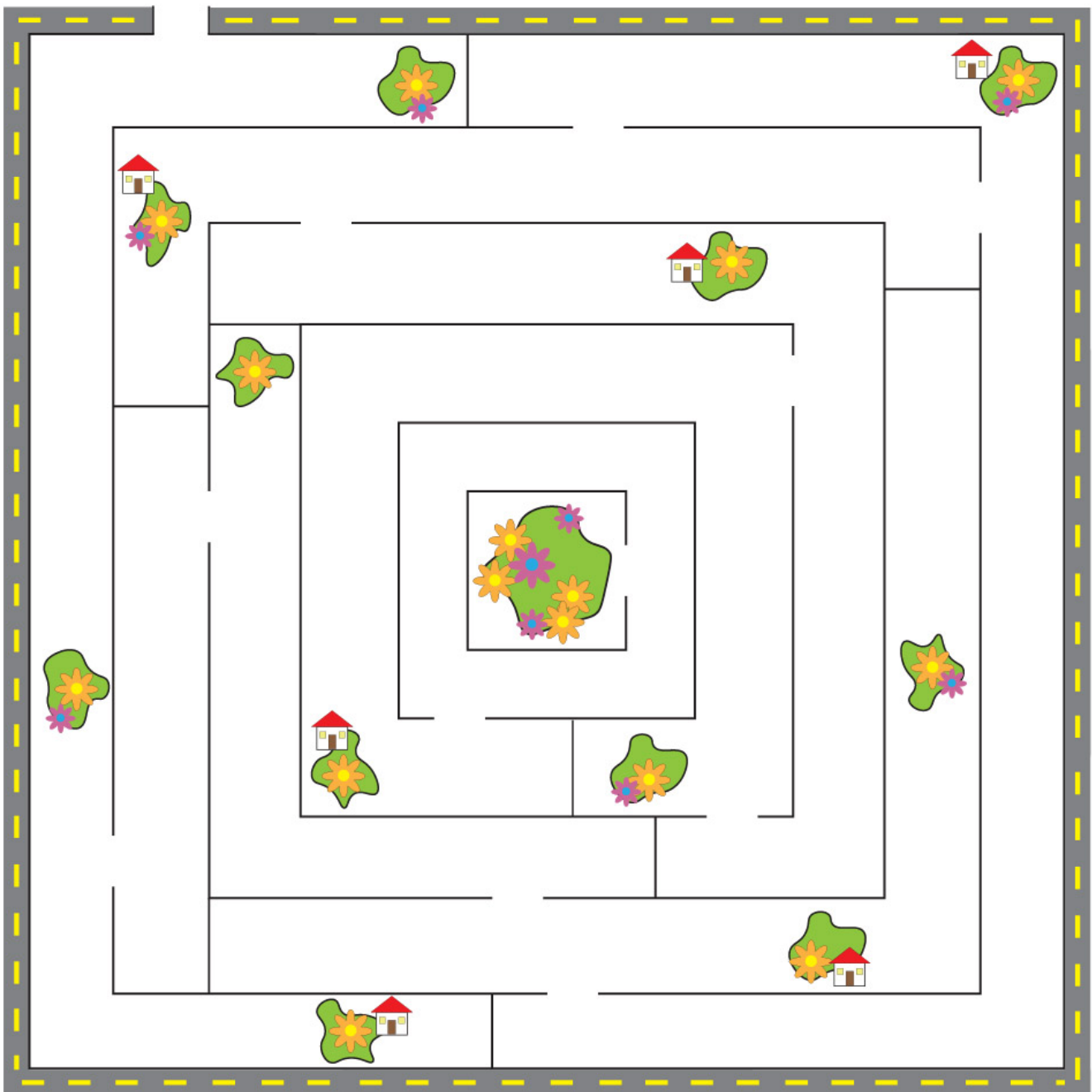
In the city there are large buildings and sidewalks and parking lots, instead of places like fields or forests. It is important to plant pollinator gardens in a city where there aren't a lot of flowers.

Pollinators need us to provide them with safe places to eat and rest when they visit the city. They need food, water, and shelter just like we do. When there aren't many pollinator gardens, pollinators have to travel long and dangerous distances to find flowers.

If everyone planted a pollinator garden in your city, these pollinators would be able to buzz from garden to garden safely, eating, resting, and pollinating all along the way.

Pollinator garden maze

Pretend you are a pollinator in your city. You are looking for flowers for eating, resting, and pollinating. Find your way through the maze to the big pollinator garden in the park at the center of the city. This is your chance to be a bee! Stop at all of the smaller pollinator gardens along the way!



Where should I plant my garden?

Whether you want to plant your garden at home or at school or somewhere else, here is what you need to do to start:

- ✓ Find some open space. Do you have any empty patches of soil or grass that don't have a lot of other plants? That might be a good spot!
- ✓ You need good soil. Look for soil that is a little bit wet but not too muddy. It should feel grainy like there is some sand in it. You want your soil to look dark brown. It's okay if there are some rocks or wood chips in there too.
- ✓ Look for sunshine! Wherever you choose to put your garden needs to be sunny most of the day so your flowers can grow. Pretend that you are a flower – does it feel warm and sunny enough there for you?
- ✓ Look for trees or bushes nearby. If your open space is near some big, healthy trees or bushes that is a good thing. This means pollinators might already be nearby and will find your garden easily!
- ✓ Can you get to it easily? If you find a good spot using the other tips, make sure it is somewhere you can enter easily. You will have to check on your garden often and water the flowers, so it needs to be easy to get to.

Now, try going for a walk outside and see if you can find a good spot for your garden! Tell me what you found:

Where did you find a good spot for your pollinator garden?

How big is the spot?

What does it look like?

Are there any trees, bushes, or other plants nearby?

Okay, so let's plant a garden! What flowers should I choose?

Pollinators that you want to attract to your garden are native pollinators. That means they have lived in your neighborhood for many, many years, before even you lived there. They need food from native plants that have also been growing in your neighborhood for many years!

Native plants and native pollinators get along very well. Pollinators like to eat the nectar from these flowers and do a good job pollinating them. Pollinators like flowers of all different shapes, sizes, colors, smells, and tastes.

These are some native flowers to plant in your garden that will grow back every year:



Marsh marigold



Common milkweed



Black-eyed Susan

Wild bergamot



Eastern monkshood



Limber honeysuckle

It's important to make sure your garden has all of the colors of the rainbow and to plant flowers that are different shapes and sizes, so all sorts of pollinators come to visit!

When you plant your flowers, plant them in clumps. Planting groups of flowers close together makes it much easier for pollinators to fly around, eat, and pollinate your garden.

If I was a pollinator ... where would I go?

Write a few sentences pretending to be a pollinator. Tell me what kind of pollinator you are. What do you look for when you're flying around and need a place for food and rest? What kind of flowers would be attractive to you? Are there any other gardens nearby? Be creative!

Handwriting practice lines consisting of solid top and bottom lines with a dashed middle line, repeated 10 times.

Building a safe place for pollinators

Remember, pollinators need food, water, and shelter, just like we do. Once they find your garden, you want to make sure they have a safe place to stay and rest.



Bird houses are a great thing to have in your garden because it gives birds a safe place to rest and make a nest.

Bird baths are helpful to birds and other pollinators too. Making sure your garden has water for pollinators is important because all pollinators need clean water to drink.



Bee houses are something you can put in your garden to give mason bees a place to safely lay their eggs. Mason bees are one type of bee that makes nests alone in holes of branches and logs, instead of in beehives. We will learn how to make these next!

Make a bee house

You can make your own bee house by following the directions below! Ask an adult to help you with this project.

This is what you need:

- ✓ a clean and empty tin can
- ✓ hollow sticks, like bamboo or knotweed, or paper straws
- ✓ paints and a paint brush
- ✓ hammer and nail (ask an adult for help with these!)
- ✓ string
- ✓ scissors

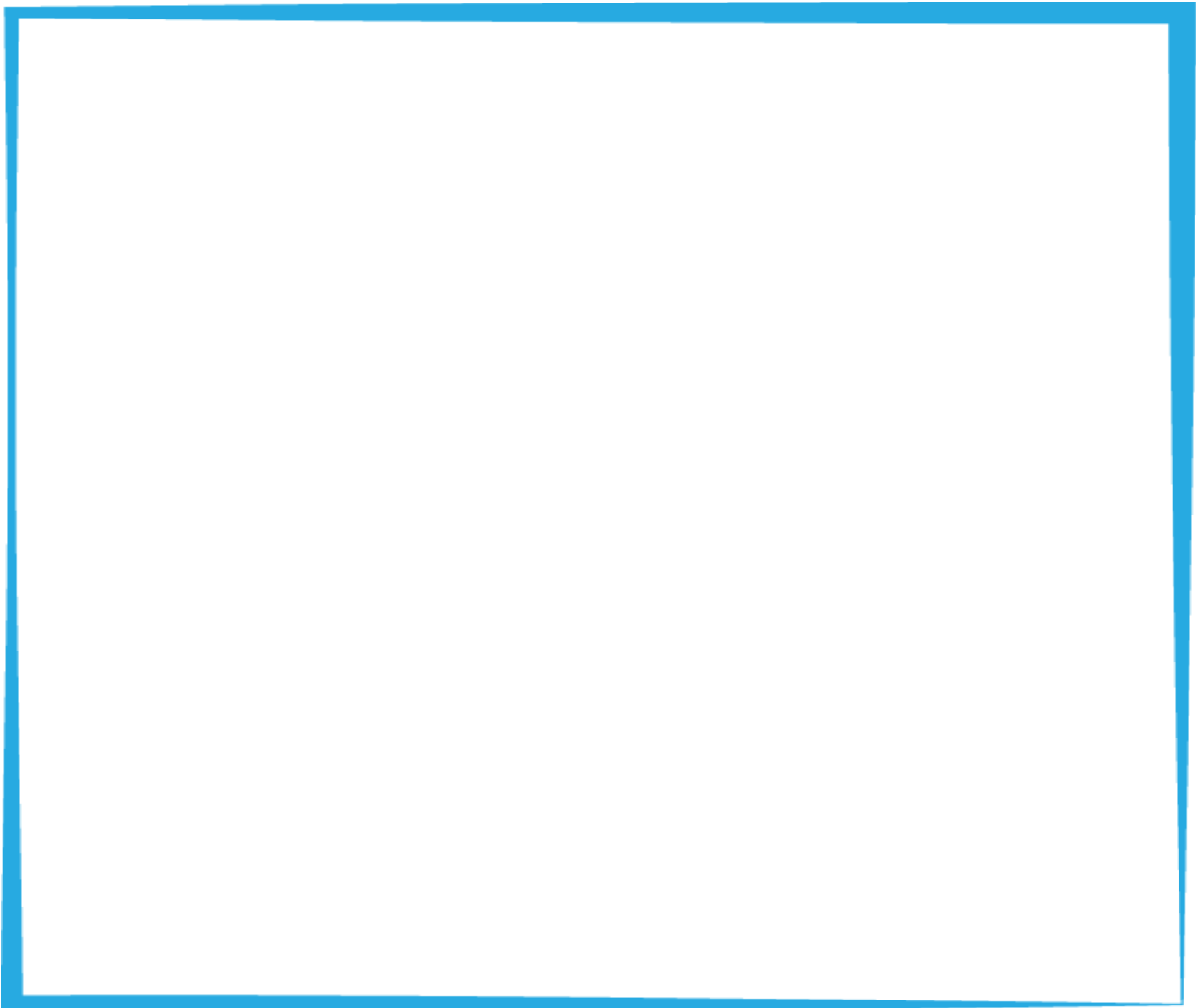
Here is how you make the bee house:

1. Clean and dry your tin can. Take off the label if there is one.
2. Ask an adult to help make a small hole in the bottom of the can using the hammer and nail.
3. Cut a long piece of string and thread it through the hole in the can.
4. Tie the ends of the string together in a knot.
5. If you want to decorate your bee house, paint the outside of the can and let it dry before the next step.
6. Take your hollow sticks and put them inside the can. Make sure to pack them in there tightly so they don't fall out!
7. If you need help cutting the hollow sticks so they fit in the can, ask an adult.
8. Now, once you plant your garden, you will be ready to hang up your bee house!

Design your own pollinator garden!

Before you start planting, you should plan out what your garden will look like. Draw and label what you want your garden to look like in the box below.

What kind of plants would you include? Where would you plant them? What other special things would you include? If you want to, you can draw other gardens nearby too. Use your imagination!



Write two sentences and tell me why you chose to design your garden this way:

What flowers did you choose?

What other special things did you choose?

Once you have a plan, you are ready to find some flowers and get planting!

Tips to take care of your pollinator garden

Now that you know all about pollinator gardens, here are tips on how to take care of your garden!

- ✓ **Water your garden often.** If it hasn't rained lately, make sure to give your plants a drink of water from the hose or a watering can.
- ✓ **Clean out water from bird baths.** When the water starts to look dirty, you can dump it in the garden and fill it up with clean water. Use gloves and ask an adult for help with this one.
- ✓ **Weed your garden often.** Check out your garden once or twice a week with a friend or an adult. If there are weeds growing that don't belong there, you can pull them out! This gives your flowers and other plants more room to grow and makes it easier for pollinators to find the flowers.
- ✓ **Clean out your garden in the springtime.** In May or June, once all of the hibernating creatures are awake, you can clean out dead leaves and litter from around your garden.
- ✓ **Plant new flowers in the springtime.** Each spring you can add new plants to your garden to keep it full of color and life!
- ✓ **Leave the leaves in the fall.** It is good to leave leaves on the ground in the fall. This gives hibernating pollinators and other animals, like frogs and salamanders, places to hide when the weather gets cold.

You don't need to do anything fancy to your garden to keep it healthy! Just follow these tips, and your pollinator garden will do great.

How will you know what pollinators are using your garden?

With a parent, guardian, or instructor's help, you can download these helpful tools on a phone or tablet to help keep track of the new pollinators that will be visiting your pollinator garden.

- ✓ **Garden Answers** is an app that let's you take a picture of a plant and then tells you what plant it is.
- ✓ **Waterbot** is an app that will remind you when to water all of your plants!
- ✓ **iNaturalist** is an app that helps you identify plants and insects, like butterflies and bees, and keeps track of all your discoveries.
- ✓ **Merlin** is an app that helps to identify birds that might visit your garden.
- ✓ **eBird** is an app that helps to log and keep a list of the birds in your garden.

You can use books, field guides, or the internet to help identify other cool critters you might find in your garden too!

You can write down all of the flowers and plants that you put in your garden here:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

**You can keep track of all the
pollinators that visit your garden here:**

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

**Track anything else that visits your garden,
like birds, other bugs, or other cool visitors!**

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

You made it to the end of the handbook,
great job!

What did you learn?

I know what a pollinator is **YES**

NO

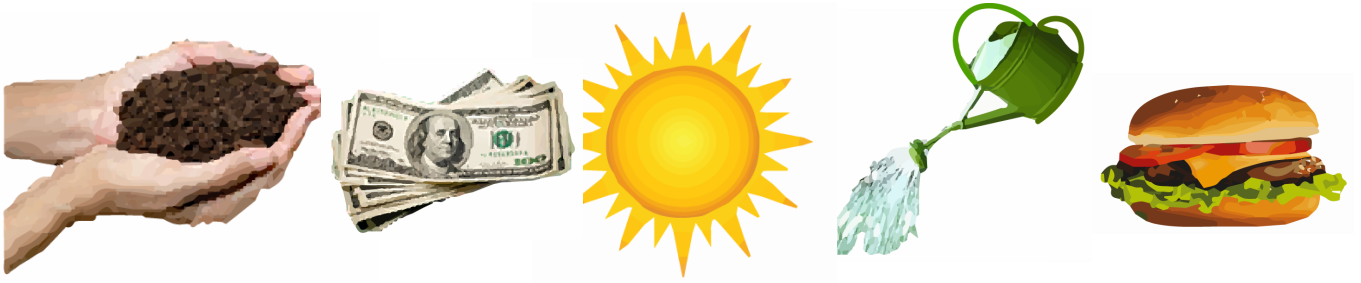
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What is the name of this animal?



Circle all the things a plant needs to grow



Which space looks like the best garden for pollinators?



A. _____



B. _____



C. _____

Write one thing you are glad you learned in this book:

Write one question you still have about pollinator gardens or pollinators:

Thank you to Oregon State University and Susie Dunham.
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About the Author:

Colleen Andrews is the Outreach Coordinator for the U.S.
Fish and Wildlife Service located at the New York Field Office
in Cortland, New York. For queries, please contact
colleen_andrews@fws.gov

