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# EGG CARTON CATERPILLAR

Design your own caterpillar and learn what it will eventually become.



# Egg Carton Caterpillar

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## About the Activity

Caterpillars may look like simple insects, but they live a very fascinating life! They start their life as squirmy larvae, change into a chrysalis or cocoon, and then transform into a moth or butterfly! In this activity, kids will create their own caterpillar and learn facts about the insect's life cycle.

## Supplies

**These simple art supplies are all you'll need to create your caterpillar:**

- Egg carton (the cardboard/paper kind will work better than foam or plastic)
- Scissors
- Paint
- Paint brush
- 2 pipe cleaners
- Black permanent marker

### Optional:

- Two small googly eyes
- Glue

## Grades: Pre-K - 2

**Topic:** STEM, Biology, Crafting

**Time:** 20 minutes

# Activity Steps

Let's create our own colorful caterpillar!

1

First, you will need to cut your egg carton. Make sure to have an adult's permission and supervision while using the scissors. You will only need one section of the egg carton for this exercise, so start by cutting off a single row.

**DID YOU KNOW?** Not all caterpillars are created equal. Some will grow to spin a silk cocoon and turn into a moth, while others will shed their skin to reveal a chrysalis before transforming into a butterfly.

2

Now, it's time to get creative by painting the egg carton. Green and black are colors seen in different types of caterpillars, but since this is your own caterpillar creation, you can use as many colors and patterns as you like.

**DID YOU KNOW?** While a moth or butterfly is not necessarily reminiscent of its younger caterpillar self, it can be fun to guess how a caterpillar will turn out once its metamorphosis is complete.

3

After you're finished painting your caterpillar, allow 15-20 minutes for the paint to dry before moving to the next step.

**DID YOU KNOW?** Have you ever seen a caterpillar munching on a plant? As it eats the caterpillar grows and becomes too big for its own skin. Eventually it will have to shed or molt the old skin.

4

It's time to insert the antennas on your caterpillar! Poke two holes with a tack or pen at the top of the first egg cartridge. You may want to ask an adult for help. Now that you have two holes at the top of the carton, thread one pipe cleaner through each hole and then tie the two pipe cleaners together on the inside of the carton. If you want, you could twirl each pipe cleaner around a pen to make them spiral.

5

Finally, glue your googly eyes to the side of the caterpillar's head. If you don't have googly eyes, use a marker to draw them on.

**DID YOU KNOW?** Butterflies and moths are holometabolous, meaning that they undergo a complete metamorphosis from egg to caterpillar and from chrysalis to adult.



# Test Your Knowledge

## See how much you learned about caterpillars!

### QUESTION 1

**True or false?** All caterpillars turn into butterflies.

- True.** All caterpillars form a chrysalis and eventually change into a butterfly.
- False.** Some caterpillars turn into butterflies and some turn into moths.

### QUESTION 2

**Butterflies and moths are holometabolous, meaning:**

- That they are insects
- That were once caterpillars
- That they undergo a complete metamorphosis from egg to caterpillar and from chrysalis to adult.
- That they fly

### QUESTION 3

**What happens after a caterpillar outgrows its skin?**

- It will shed or molt the old skin
- It will transform into a butterfly or moth
- The old skin will adjust to the new body
- It will turn into a cocoon or chrysalis

### QUESTION 4

**A caterpillar will either form a chrysalis or a \_\_\_\_\_ to help it transform.**

- Silk
- Antennae
- Cocoon
- Pattern

## Reflection Questions

**Bonus questions to inspire wonder:**

- What do you think is happening to a caterpillar while it's in the cocoon or chrysalis?
- Do you think you could spot the difference between a cocoon or chrysalis?
- Do you think moths and butterflies have differences other than the type of structure they use to transform?



# Investigate & Explore

Take your new knowledge to the next level.

Whether a caterpillar transforms into a butterfly or moth, it will see four stages of life- egg, larva, pupa, and adult. A mother moth or butterfly typically lays eggs on a plant, which will later serve as food for the offspring. Over time, a caterpillar (known as the larvae) will hatch from the egg. The caterpillar's first meal is it's own egg shell, and

after that it will eat plants. Once the caterpillar is ready, it will make a transformation into the third stage of life - the pupal stage. During this time, the caterpillar will spin itself into a cocoon or chrysalis to transform into its final form. When the time is right, the butterfly or moth will emerge from the cocoon or chrysalis, dry their wings and fly!

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# CREATE YOUR OWN LADYBUG

Create your own lucky beetle with some simple art supplies!



# Create Your Own Ladybug

Create your own lucky beetle with some simple art supplies!

## About the Activity

Did you know ladybugs are considered symbols of good luck? That's right, this beautiful beetle earned its praise in Europe for fighting off other plant-eating pests. Learn to create your own ladybug, so you always have a little bit of luck on hand.



## Supplies

**These simple art supplies are all you'll need to create your own lucky ladybug. You may need to make a trip to an art store for some supplies:**

- Black paper plate
- Red paper plate
- 1-2 black pipe cleaners
- Brad nail
- Black construction paper
- White construction paper
- Cup (approx 3" wide mouth)
- Scissors
- Permanent black marker
- Hole puncher
- Glue

### Optional:

- Two small googly eyes

## Grades: Pre-K - 2

**Topic:** STEM, Biology, Crafting

**Time:** 20 minutes

# Activity Steps

In this activity you will learn about ladybugs and make your own!

**1** The first step is to prepare your plates. Punch a hole in your black plate about a half-inch from the edge.

**2** Now grab your red plate, and cut it in half. Take your two halves of the red plate, and hold them as if you are going to put the plate back together. Now, slightly rotate one of them, so the inside top of one side overlaps with the other. You've just created wings for your lady bug.

**DID YOU KNOW?** Not all ladybugs are ladies! They can be either female or male. It is difficult to determine the sex of a ladybug, but females tend to be larger than males.

**3** Punch a hole through the two red plates where they overlap, about a half-inch from the edge. Line up the holes in the red plates over the hole in the black plate, and use your brad nail to attach them.

**DID YOU KNOW?** Ladybugs go through a life cycle of four stages: egg, larva, pupa, and adult. It takes 4-8 weeks for a ladybug to mature from an egg to an adult. An adult ladybug will live for about 1 year.

**4** Now, take your cup and place it upside down on top of the black construction paper, and trace the cup sized circle. Cut out the circle. This will be your lady bug's head!

**DID YOU KNOW?** While it may look like this paper ladybug doesn't have a mouth, that's actually far from the truth! One single ladybug can eat up to 5,000 insects in its lifetime! They also look for pollen as a food source. Flowers and herbs such as cilantro, dill, fennel, caraway, yarrow, tansy, angelica, scented geraniums, coreopsis, and cosmos are good choices for luring ladybugs to your yard.

**5** Next, it's time to make the antennas! Using a pen, a tack, or something pointy, poke two small holes in the circle about ¼-inch from the edge. You may want to ask an adult for help. Cut two pieces of pipe cleaner, each 3-inches long. Thread one piece through each hole in the paper, and bend the end back to help keep it in place. If it's easier, you could also glue the pipe cleaner pieces to the top of the head.

**6** If you choose to use googly eyes, you can glue them on to the lady bug's head. If you don't have googly eyes, you can cut out two small circles from the construction paper to glue on to the head.

**7** The final step is to decorate your lady bug. Use a permanent marker and color spots for the ladybug.

**DID YOU KNOW?** A ladybug's color actually helps to protect it. The markings on a ladybug communicate to predators that they taste terrible and should eat something else. Depending on the species, they can have spots, stripes, or no markings at all and come in many colors.



# Test Your Knowledge

## See how much you learned about ladybugs!

### QUESTION 1

Are all Ladybugs female?

- a. No, ladybugs can be either male or female.
- a. Yes, that's why they are called ladybugs.

### QUESTION 2

Which is not a stage of the lady bug life cycle:

- a. Egg
- b. Larva
- c. Wings
- d. Adult

### QUESTION 3

How many insects can a ladybug eat in its lifetime?

- a. 50
- b. 500
- c. 5,000
- d. 5 million

### QUESTION 4

What do ladybugs eat?

- a. Other insects
- b. Flowers
- c. Herbs
- d. All of the above

## Reflection Questions

**Bonus questions to inspire wonder:**

- What are some ways that lady bugs could help farmers to keep pests away?
- What purpose does the color of a ladybug serve in nature?
- Why are ladybugs considered lucky in some cultures?



# Investigate & Explore

Take your new knowledge to the next level.

You may have heard that if a ladybug lands on you, it's a sign of good luck. Why is that?

Before they were considered ladybugs, these insects were actually called "Beetle of Our Lady." They were given their name by European farmers who struggled with pests eating their crops. They prayed to the Virgin Mary for help, and when the beautiful red beetles arrived and wiped out the invading insects, the farmers named them

after their savior. The beetles had answered their prayers. Eventually, the name was shortened to "ladybug."

So while many people now enjoy lady bugs because of the beauty and luck they bring, farmers actually appreciate them because they eat aphids, mites, scales, thrips, white flies, and other plant-eating pests.

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# GARDEN IN A GLOVE

Learn about conservation by creating your own garden





# Garden in a Glove

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Learn about conservation by creating your own garden.

## About the Activity

Conservation is the use of Earth's natural resources—such as water, soil, air, minerals, wildlife—while protecting their ecosystems at the same time. In this activity, kids will learn more about conservation by creating their own ecosystem. By the end, they will have their very own garden!



## Supplies

**These simple supplies are all you'll need to create your own garden in a glove. You may need to make a trip to a plant or hardware store for the seeds:**

- Plastic / rubber glove
- Cotton balls
- 5 different types of seeds (tomatoes, beans, and sunflower seeds are a few examples)
- Permanent marker
- Spray bottle with water

## Grades: Pre-K-5

**Topic:** STEM, Biology, Gardening

**Time:** 20 minutes, 5 minutes per day afterward



# Activity Steps

In this activity, we will grow our own garden in a glove. Be sure to pay special attention to the elements of the ecosystem that will help your seeds flourish.

- 1 First, take your glove and use a permanent marker to write the name of each seed on a finger of the glove.

**DID YOU KNOW?** An ecosystem is a community or group of organisms that live in and interact with each other in a specific environment. All creatures rely on balanced ecosystems, where they interact with pieces of their environment -- such as soil, air, and water -- to create a cycle of life.

- 2 Now, wrap each seed inside of a cotton ball. And then place the cotton ball in the corresponding finger of the glove.

**DID YOU KNOW?** Sometimes natural disasters, or even human interference, can disrupt an ecosystem. Ecosystem disruption could lead to disastrous consequences for the environment and the organisms that live there. This is why pollination is so important. Even when certain factors get in the way of our environment, other factors—such as animals, birds, or even wind—may help to transfer pollen from one flower to another, allowing plantlife to reproduce.

- 3 Next, take your bottle and lightly spray water inside of the glove so that each seed receives water. Spray just enough water to make the cotton ball moist. Too much water could drown or rot the seed.

**DID YOU KNOW?** When pollen transfers from the male parts of one flower to female parts of another, it fertilizes the flower, allowing seed production to occur.

- 4 Place your glove in the window near sunlight, and continue to water your seeds daily and track how they grow. Your glove now serves as an ecosystem for your plants. By days 3-5 your seeds should start to sprout, and by days 9-14 the seeds should be able to be transferred to a small container with soil.

**DID YOU KNOW?** There are two types of pollination: abiotic and biotic. Abiotic pollination is the result of environmental factors, such as air, wind, and rain, distributing pollen from one type of organism to another. Biotic pollination is when live pollinators, such as insects and animals, transfer pollen from one flower to another. Live pollinators can include bees, ladybugs, butterflies, bats, or hummingbirds. A live pollinator may even be a person who carries pollen and seeds on their shoes and clothes.



# Test Your Knowledge

## See how much you learned about pollination and ecosystems:

### QUESTION 1

What is an example of abiotic pollination?

- a. Air
- b. Wind
- c. Rain
- d. All of the above

### QUESTION 2

What is the cause of biotic pollination?

- a. Hummingbirds
- b. People
- c. Bees
- d. a, b, and c

### QUESTION 3

**True or False?** Pollination is necessary for survival of plants and animals.

- a. True
- b. False

### QUESTION 4

A community or group of living organisms that live in and interact with each other in a specific environment is a...

- a. Animal
- b. Plants
- c. Pollination
- d. Ecosystem

## Reflection Questions

### Bonus questions to inspire wonder:

- Which natural resources will help the seeds in your garden grow?
- How could pollination help your garden?
- How can you protect your garden from disruptions?



# Investigate & Explore

Take your new knowledge to the next level.

Pollination is happening around us every day! Take a walk outside or visit a nature preserve near your home. Observe the plants and animals around you. What do you see, hear, and feel? Look for signs of both biotic pollination and abiotic pollination in the environment. Maybe you see

ladybugs or hummingbirds. Or maybe you can feel a breeze as you observe the wind blowing through the trees and flowers. The next time you are outside with a friend, share all the different examples of pollination around you.

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