

Lifecycle of a Butterfly Transcript

0:00 - Intro

A backdrop photo of a monarch butterfly nectaring from a purple coneflower covers the screen. On the right, a green circle takes up half of the view. The text inside reads: The Lifecycle of a Butterfly. Below, the presenter's name, Mykayla Hagaman, is visible.

Calming, upbeat music plays in the background.

As the music fades, the scene transitions to a video of Mykayla sitting in her office which has a white wall with a butterfly poster behind her. She has blond hair and is wearing a butterfly shirt.

Mykayla: "Hello everyone! My name is Mykayla Hagaman, and I work with the Iowa Monarch Conservation Consortium. And today, we're going to be talking about the lifecycle of a butterfly, and specifically, we're going to be making a fun craft together to talk about each stage of a butterfly's lifecycle."

She holds up a demonstration of the craft which shows a white paper plate separated into 4 sections. Each section represents a specific stage of the butterfly lifecycle and will be discussed in detail as we work through the craft throughout the video.

0:26 – What You'll Need

The initial intro slide and upbeat music returns. This time, the text in the green circle writes: Craft Supplies:

We enter a Power Point presentation with the slides displayed in the center of the screen and a smaller video of Mykayla in the top right corner. Mykayla reads through the words displayed on the slide while also providing additional information. As Mykayla works through the supplies you will need, images of these materials appear on the screen.

"So, for this craft, what you're going to need is: a paper plate, and then you're going to need a few different types of pasta for the different life stages of the butterfly. The first one you'll need is pearl couscous. You can also use rice or any kind of circular kind of pasta. You'll also need some spiral-shaped pasta, some shell pasta, and some bow tie pasta. And then a few other things you'll need include glue, that way we can stick our pasta to our plate, and then something to color with. So, you can use markers or crayons or colored pencils, really whatever you'd like to use for coloring."

1:10 – Step 1

We transition back to the intro slide and music with the green circle text reading: Let's Get Started!

Returning to the office video setup, Mykayla begins to explain the first step of the craft, working through those instructions in real time.

"So, the first thing you'll need is a paper plate. And you're going to take a marker, and we're going to split this plate into four different sections because butterflies have four different life stages. So, you can just go ahead and draw a line right down the middle and then turn it and draw a second line, so it gives you four sections."

At this point, Mykayla has drawn 2 perpendicular lines on her plate which split the plate into 4 equally divided sections.

"So, the first stage of a butterfly's lifecycle is the egg."

Mykayla holds up an enlarged photo of a monarch egg that has been laid on a milkweed leaf.

"So, monarchs and other butterflies will find what's called a host plant, and they will lay their egg on the leaves or the stem or the flowers of these plants. So, the first thing we're going to do is we're going to draw a leaf in this top section right here. So, you can color your leaf green, or you can get creative and use any kind of color you want for your leaf. But I'm just going to go ahead and draw a leaf up here in this section!"

2:24 – The Egg and Host Plant

The intro slide and music return. The text in the green circle states: Stage 1: The Egg and Host Plant.

We transition back to the Power Point video. This time the slide backgrounds are cream in color. The title of the slide reads: Stage 1: The Egg and Host Plant. As Mykayla explains this stage, photos appear on the slide.

"A host plant is a specific plant that the caterpillars of a butterfly can eat. Now each different species of butterfly has its own specific type of host plant that is unique to them!"

A photo of a regal fritillary butterfly, an orange butterfly with black markings on its wings, appears on the left along with a photo of its host plant, a prairie violet with a small purple flower.

"So, a few common butterflies in Iowa include fritillary butterflies, and their host plants are native violets, like prairie violets."

On the left, a photo of a black swallowtail, a black butterfly with white and blue markings, appears with its host plant, Golden Alexanders with small yellow flowers.

“Another very common butterfly in Iowa is the black swallowtail, or swallowtail in general, and their host plant is the native golden alexander plant. But swallowtails can also use a variety of other different plants for host plants – things like fennel and dill and parsley. So, some butterfly species have a really limited window of host plants, maybe they can only use one or a few different species of plants, while other butterflies can select from a range of different plants for their host plant.”

The photos shift to display a monarch butterfly, orange wings with black veining, on the left and four different species of native milkweed on the right. As Mykayla discusses each milkweed species, her cursor circles the corresponding picture.

“Today, we’re really going to be focusing on the monarch butterfly, and their host plant is the milkweed. So, we have a variety of different native milkweed species that grow here in Iowa, and I’ve just kind of highlighted four of the more common ones. So, we’ve got our common milkweed here in the top left. We’ve also got whorled milkweed here with the white flowers. We’ve got swamp milkweed in the bottom right with the pink flowers, and we’ve also got butterfly milkweed with the orange flowers.”

The photos transition again. This time on the left is a female monarch butterfly laying an egg on the underside of a milkweed leaf. On the right, is a close-up photo of a monarch egg on a milkweed leaf. The egg is creamy white in color, cone shaped, with vertical ridges on the outside.

“So female monarchs will locate a milkweed plant, and they will lay a very small egg. It’s really tiny.”

The photo of the egg transitions one taken from further away to give a better idea of the size. The egg is about the size of the tip of a pencil.

“As you can see, it’s very small. And generally speaking, monarchs will lay their eggs on the underside, or bottom, of a leaf. However, they can lay their eggs on other parts of the plant.”

The egg photo transitions again, this time showing a monarch egg that has been laid next to the flower buds of the milkweed plant.

“Sometimes they’ll lay them on the flowers or near flowers, but generally speaking, it’s on the underside of a leaf.”

The egg photo now transitions to an extreme close up. This egg is translucent, and Mykayla explains what you can see inside.

“Now, when the eggs are laid, they’re generally white, but as the caterpillar develops inside, they’ll become translucent, meaning you can see through the egg. And here you can see the caterpillar with its black head and its white body.”

4:57 – Gluing on the Egg and Step 2

With the intro and upbeat music returning, the green circle text reads: Let’s check back in on those leaves ...

We return to the office where Mykayla is finishing drawing her leaf. As she finishes, she holds up her plate to display her drawing. She then explains and demonstrates how to finish off the first section by attaching the pearl couscous pasta “eggs” to the leaf.

“Alright! So, we’ve got our leaf, which is excellent, and now we’re going to glue on our pasta to represent the egg. So, you’re going to take a little bit of glue, and you’re just going to put a dot of glue onto your leaf wherever you want to put your pasta egg. Now, you can just put one egg on it; I think I’m going to put a few eggs on it, so I’ll go ahead and add a few dots of glue for my eggs. And then you’ll take your little pasta, and you’ll stick it onto the leaf. Just like that! Alright, so it’s going to take a little while for this to fully dry, but as it’s drying, we can continue to work on the next section!”

Setting down the craft to dry, Mykayla holds up a picture collage of monarch caterpillars and explains stage 2.

“So, once the eggs hatch, out come the caterpillars! So, the caterpillars start really small, really tiny. And then they’ll eat the leaves, they’ll munch much munch, and they’ll get bigger and bigger and bigger.”

Returning to her plate, Mykayla points to the next open section clockwise of the egg stage, explaining what you will draw there.

“So, we need to draw a second leaf for these caterpillars to feed on. So, in the next section you can draw another leaf. If you want to add some little sections in the leaf that have been munched out by the caterpillar to show it feeding on the leaf, that’s awesome. You can just kind of draw whatever leaf you want. Again, you can use green or a different color, whatever leaf you would like.”

6:56 – The Caterpillar

With the intro slide and music returning, the green circle text now reads: Stage 2: The Caterpillar.

Transitioning back to Power Point, a photo of a miniscule monarch caterpillar, just hatched appears in the top left corner under the heading: Stage 2: The Caterpillar. This picture of a caterpillar shows a miniscule caterpillar, the size of a grain of rice, munching on the shell of the egg it just hatched from. Mykayla begins to explain this stage of a butterfly's life.

“So stage two for the butterfly lifecycle is the caterpillar. And as you can see, when caterpillar emerges from its egg, it's super small. Really tiny. And generally speaking, the caterpillar will have its first meal of the egg itself to get some energy.”

Four more pictures gradually appear on the screen, showing the monarch caterpillar growing larger and larger with its signature yellow, black, and white stripes becoming more and more apparent.

“Now monarch caterpillars go through five different larval stages. And as you can see, as they go from one stage to another, they get bigger and bigger and bigger.”

The photos transition to display 2 videos. The right video, currently playing, shows a monarch caterpillar munching on a milkweed leaf. This video has no sound, and Mykayla continues to discuss the caterpillar life stage.

“And this is because they spend all their time eating. And they eat the leaves of the milkweed plants to grow big and strong.”

The video on the right ends, allowing the other video to begin. This shows a different monarch caterpillar eating the orange flowers of a butterfly milkweed plant. This video also has no sound.

“So generally, they'll eat the leaves of the plants, but they can also eat other parts of the plant, including the flowers. So here we have a monarch caterpillar eating the leaves of a common milkweed plant on the right and then we have a video of another monarch caterpillar eating the flowers of a butterfly milkweed plant on the left.”

8:06 – Gluing on the Caterpillar and Step 3

Transitioning back to the craft, the title slide and music return with the text questioning: What type of leaf did you draw?

Mykayla finishes drawing her second leaf and displays her project to the camera. She goes on to demonstrate how to glue on the spiral pasta “caterpillar”.

“Alright! Now we've got our second leaf; you can see I added some little sections of the leaf that have been chewed on by the caterpillar. So, you can do that as well or just draw whatever leaf you'd like. Then, we'll take our glue. This time we kind of just want a line of glue across the leaf to hold our caterpillar pasta. So, I've just put a line of glue on the leaf, and then we'll take our

spiral pasta and we'll stick it on the leaf. And this time you might need a little extra glue and it might take a little extra time to dry, but that will dry on the leaf there in just a few minutes."

With her craft set aside, Mykayla holds up a photo of monarch chrysalises and discusses the third lifecycle stage.

"Ok. So, after the caterpillars have eaten lots and lots of leaves, they'll eventually form a chrysalis. So, this is where the caterpillars will transform into the butterflies. So, caterpillars will usually go off of the plant; they'll maybe try to find a tree branch or another plant stem, somewhere they can hide away and camouflage so they can't be easily found by other creatures, and they'll form their chrysalis."

Holding up her craft, Mykayla points to the next section clockwise of the caterpillar stage.

"So, in the next section, we're going to draw a tree branch so that the caterpillar can form its chrysalis."

9:50 – The Chrysalis

The intro slide and music transitions us back to the Power Point with the text reading: Stage 3: The Chrysalis.

Underneath the heading (Stage 3: The Chrysalis), a photo on the left displays a monarch chrysalis, a green pod with golden dots and a gold and black line semi circling the upper portion of the chrysalis. This chrysalis is hanging from a twig by white fibrous strands.

"So, once the caterpillars have reached their fifth instar stage, their fifth larval stage, they'll be ready to form their chrysalis. So, at this point, monarch caterpillars will generally leave the milkweed plant and go find some secluded area to form their chrysalis to help give them some protection, make it harder for predators to find them."

A second picture appears in the middle of the slide showing a chrysalis hanging from the underside of a leaf.

"So often times, they'll form their chrysalis on tree branches, but they can also go to other plants and hang from the underside of leaves."

A third picture appears on the right; a chrysalis hanging from the edge of a brick.

"And sometimes they'll even form their chrysalis on the sides of buildings! So, you might see them on bricks or hanging from the edge of a roofline, and they'll find really interesting places to form their chrysalis."

10:46 – Gluing on the Chrysalis

The intro slide and music transition us back to the craft with the text reading: Time to add on the chrysalis.

Mykayla finishes her tree branch and holds up her plate to show the completed drawing. Then she explains how to attach the shell pasta “chrysalis”, demonstrating that putting the glue directly on the inner edge of this pasta works best for getting it to stick.

“Alright! And once you’ve got your tree branch, you can get ready to glue on the next piece of pasta. Now, for this shell pasta, I find that putting the glue on the edge of the pasta shell works best for getting it to stick to the plate. So, you can take your glue and just put a ring of glue around the edge of the pasta. Your hands might get a little sticky, but that’s ok! That’s what we do with crafts. So, you’ve got a little glue and then you’ll stick it onto your plate there. Again, it might need a few minutes to dry, so just leave it sitting flat on your desk or a table, and that’ll work well.”

Mykayla then holds up a picture of a monarch butterfly with its iconic orange wings with black veins, and white dots along the edge.

“So, after the caterpillar has been in its chrysalis for a while, eventually it will emerge as a beautiful butterfly.”

11:54 – Emerging from Chrysalis Video

The intro slide and music take us back to the Power Point with the text: Let’s see what that process looks like!

This time a video plays showing a monarch chrysalis hanging inside a box. This video has no sound. The chrysalis is transparent at this point, showing the dark body of the monarch held inside. Eventually the chrysalis splits open and the monarch butterfly emerges, hanging upside down from the chrysalis shell. Its wings are small and crumpled.

“So here I have a video of a monarch butterfly emerging from its chrysalis. Now, this is a really cool process to watch, but it does take a long time. This original video took about 30 minutes for this monarch butterfly to emerge from its chrysalis. So, I sped up the video a lot so we can watch it in just about two minutes. So, once the caterpillar has spent around 14 days or so, about two weeks, in its chrysalis, it will emerge as a complete monarch butterfly. So, once it emerges from its chrysalis, it’s going to hang from its chrysalis for a while. And it needs to do this because it needs some time to expand its wings. You can see here that the wings kind of look a little crinkly, a lot smaller, kind of wrinkled, so in order to fly, the monarch butterfly needs to fully expand its wings. And to do so, it will pump fluids from its abdomen, through its wings. Over time, the wings will expand to its full size. So, we can kind of see it going through that process right here!”

Slowly throughout the video, the monarch's wings fully expand to their full size.

"So generally speaking, the full time it takes from when the butterfly lays its egg, for that egg to hatch and grow as a caterpillar, form its chrysalis, and emerge as an adult, takes about a month or so. It'll spend its time as an egg for maybe around four days, and then it'll spend maybe around two weeks as a caterpillar going through those five larval stages. And then it'll spend maybe another two weeks or so as a chrysalis before it fully emerges as an adult butterfly."

At this point, the monarch's wings are nearly fully expanded. The monarch butterfly slowly opens and closes its wings a fraction.

"And once the wings are fully extended, the monarch butterfly will be able to fly away. And it'll go find some flowers where it can feed on the nectar of those flowers and get its first meal as a butterfly."

14:28 – Step 4

The intro side and music transition us back to the craft with the text reading: So what belongs in the final section of the plate?

In the office, Mykayla is still holding up the photo of the adult butterfly. As she discusses the last section of the craft, she exchanges the photo for her plate and gestures to the final, empty section.

"And so adult butterflies feed on nectar from flowers, and so in the last section of our plate, we're going to draw a flower for the adult butterfly to feed on. So again, this can be any color of flower that you want, any flower shape, any size. You can do a lot of little flowers; you can make a field of flowers. Really whatever you'd like to add is going to be great."

15:05 – The Butterfly!

The intro slide and music return to bring us to: Stage 4: The Butterfly!

This time, there is a photo of a monarch butterfly on the left side of the Power Point slide under the heading: Stage 4: The Butterfly! As Mykayla talks, a second photo of a monarch butterfly, this one nectaring on pink milkweed flowers appears on the right side.

"The final stage we have is the butterfly. So, when butterflies emerge, they go find flowers to feed on because they need to drink that nectar for energy. So here, we've actually got a female monarch butterfly and a male monarch butterfly. Now, how you tell the difference between a male and a female is by looking at the base of their wings."

Mykayla's cursor traces along the edges of the monarchs' wings as 2 red circles appear on the right monarch photo. The highlight 2 black dots at the base of this monarch's wings. Mykayla's cursor highlights the differences between the 2 photos.

"So here on the right, this butterfly, you can see it has two dots on the base of its wings that this one does not have. And these two dots mean that it is a male monarch butterfly. So here on the right we have a male monarch butterfly, and on the left we have a female butterfly."

The photo of the male monarch butterfly on the right disappears and is replaced with a screenshot of the [ISU Monarch Seed Mix flyer](#) which lists native plants that provide important floral resources for monarchs. As Mykayla discusses when monarchs are in Iowa, the bloom time of these flower species are highlighted to draw people's attention.

"Now again, monarch butterflies need to feed on nectar so that they have energy to fly to find other milkweed plants to lay their eggs or to continue along their migration journey. So, monarchs are in Iowa generally from May through October."

The flyer transitions into pictures of the native plants Mykayla is discussing, specifically the yellow flowers of Wood Betony, the 4 previously highlighted native milkweed plants, and the yellow flowers of Goldenrod.

"So, when we're creating monarch habitat or pollinator gardens for monarch butterflies, we need to make sure that we're including a variety of plants that bloom in the spring, such as, like this Wood Betony or other woodland ephemerals that bloom in April and May. We also need to include native plants that bloom throughout the summer such as these native milkweed plants that bloom from June through July and August. And then we also need to include a variety of plants that will bloom in the fall in September and October, like this Goldenrod plant. That way we can provide food resources for the monarch throughout its entire stay in Iowa."

17:07 – Gluing on the Butterfly

The intro slide and music return us to the craft for one last time, asking: What flower did you draw?

As Mykayla finishes drawing her flower, she holds up her plate to show her work and then demonstrates adding on the final bow tie pasta "butterfly".

"Alright, and then once you've got your flower you can take our final piece of pasta which represents our butterfly. And I find it helps if you put a dot of glue right on the back in kind of the middle section of the pasta; that's kind of where it sticks best. So just put a good dot of glue on the back of that pasta, and then you can stick it anywhere around your flower. You can put it on the flower, you can put it next to the flower. Anywhere you'd like."

Holding up her plate, Mykayla displays the completed craft!

“Alright! And there you have it! We’ve got our pasta butterfly lifecycle craft. So again, it’s going to need a little while to dry so you can just lay it flat on a table or your desk. But there we go! We’ve got the eggs laid on their host plant, on the leaves. Then that emerges and we have the caterpillar eating the leaves. Eventually the caterpillar will go off and find a tree branch for its chrysalis. Then it will emerge as a beautiful butterfly where it will eat and drink the nectar from flowers.”

“So, thanks so much for joining me today! I hope you enjoyed this craft that we did and learning about the lifecycle of a butterfly. I hope you’ll go outside and look for some butterflies around your school and around your house. Maybe you can even plant a butterfly garden so that you’ll have some more butterfly friends! Alright, thanks! Have a good day, by!”

18:57 – Any Questions?

For the final time, the intro slide and music return, stating: Interested in learning more?

The final Power Point slide displays a brown butterfly on the left side with contact information for Mykayla on the right. You can email Mykayla Hagaman at mhagaman@iastate.edu. Additional information about the Iowa Monarch Conservation Consortium (IMCC) can be found on [their website](#). A qr code for the website is also displayed on the slide along with the IMCC logo and a photo of Mykayla.

“If you want to learn more about the monarch butterfly, you can visit our website, search for Iowa Monarch Conservation Consortium. You can also use the qr code here which will take you to the website as well. So, thanks so much and feel free to reach out if you have any further questions!”