

References: www.monarchwatch.org

Monarch Watch is sponsored by the Univ. of Kansas

www.monarchwatch.org/rear/index.htm

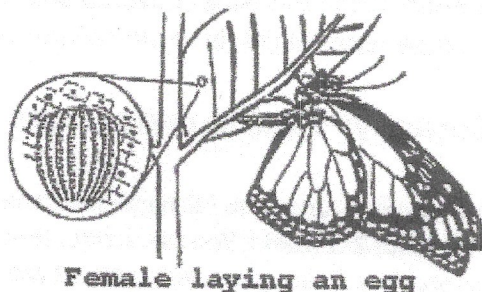
www.monarchjointventure.org

others: www.bugguide.net

Congrats on getting your egg, caterpillar or chrysalis! Welcome to the world of Lepidoptera (butterflies, skippers and moths). If you plan to raise more than one generation in your container, it's a good idea to sterilize all surfaces with a 10% bleach solution for a few minutes, rinse thoroughly and allow to dry. Please clean their containers often during the caterpillar stage – it's not healthy for them to live in their own waste.

Eggs : 3-5 days (average 4)

Monarchs may lay up to 500, 600 or possibly 700 eggs during their 4-5 weeks reproduction cycle. They like to spread them out to different milkweed plants so you may have to check many milkweeds before you find one egg. Often they are found about ½" from the edge of the leaf on the *underside*, but they can also be on the top surface, in the flowers or on the stems. Eggs are shaped like little bullets or rockets, round at the base with a pointed tip. There are lines or slight valleys running down from the tip to the base. You can collect the portion of the plant that has the egg on it, cut the stem and place in water or wrap the leaf stem in damp paper toweling. Eggs are cream-colored. Examine closely because bugs like aphids almost appear to be eggs. When the tip of the egg darkens, the caterpillar is ready to eat the shell. Be sure to have fresh food if the leaf has dried out. If your egg doesn't hatch, it might not be fertile.



Female laying an egg

Caterpillars : 10-17 days (average 14)

Newborn caterpillars have no stripes and usually eat their eggshell for their first meal. They'll "graze" the milkweed leaves which often permits the white latex sap to ooze out, this is normal. They will eat for 2-3 days and then when they are about 1/8" long, they will be immobile because they are molting. If you wish to move a little caterpillar, cut around it on the leaf and place the leaf where you want it. Do not try to handle caterpillars under ½". When the caterpillar is done molting, their antennae will be folded and they often eat their old skin. Since they haven't eaten in a while, they're usually very hungry and you'll see a spurt of growth. They molt 5 times, the last being the pupation. The second molt occurs when they are a little more than ¼", the 3rd at 5/8" and the 4th at 1". These are all approximate sizes. Your caterpillar will vary on how healthy and well-fed it is. The bigger the caterpillar, the bigger the butterfly and all the better for it to survive. Your caterpillar will need a common milkweed plant about 18" in height to go from egg to chrysalis. Some caterpillars don't make it to chrysalis for a variety of reasons: predators, disease, chemically treated food or too hot or too cold environments. If you bring in milkweed to feed it, please check over the leaves for hidden spiders and other bugs. Diseases can be passed from the mothers directly into the eggs and there is no prevention available. Your neighborhood might be sprayed for mosquitoes and the pesticide residue may land on the milkweeds rendering them toxic. Larger monarch caterpillars will eat the smaller ones so please keep only similar sizes in the same container. Washing and patting dry milkweed leaves can remove spiders and some pesticides. They can be safely handled when they are over 1" but be gentle, they can be squished.

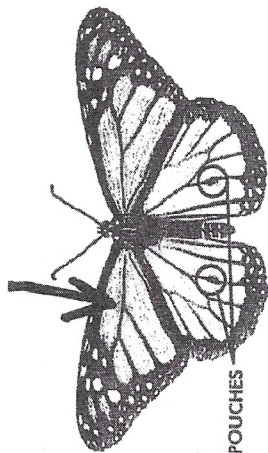
Chrysalis or Pupa: 9-16 days (average 10-12)

When your caterpillar is about 1.75" long it will move to the top of your container and spin a spot of silk. From there it will crawl over this silk spot and firmly attach its hind feet. It will hang in a J shape for 18-24 hours. The old caterpillar skin is loosening from the pupa skin or cuticle inside. You'll see a greenish appearance under the skin. When the antennae of the caterpillar become spirals, pupation or the 5th molt is about to happen. The skin will split on the back near the head and it will wriggle to burst out of its caterpillar skin. The striped skin will shrivel up the body to the top where the last feet are holding onto the silk. The cremaster (stem) of the chrysalis will appear and attach itself to the silk. The top of the cremaster has miniature hooks, this is very similar to Velcro – hooks and mat. Still wriggling, it will try to force the old skin to roll off. If it falls here, you can pick it up and reattach it to the silk or a cotton ball. The pupa will be very soft and easily damaged. It will harden in about 12 hours. After about 11 days, the chrysalis will darken and the monarch will break out. This eclosure takes about 50 seconds and often happens early in the day. They will rest for about 2-5 hours while the wings develop and harden, then they should be released to either become parents of the next generation OR fly to overwinter in Mexico (late August).

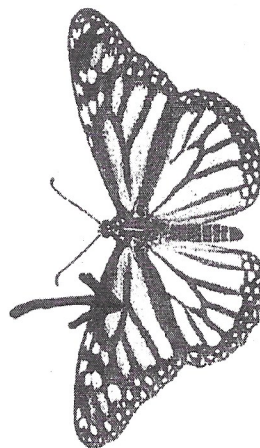
Butterfly: 5 weeks during reproduction stage, 7-9 months during migration

Monarchs returning to Michigan from the south (in late May-early June and throughout the summer until late August) live about 2-5 weeks. You can attract them to your home if you plant their favorite foods and host plants for the caterpillars. Some great nectar plants are native plants like bee balm, Joe Pye weed and cone flowers but they also enjoy marigolds, zinnias, clover and other sweet nectar plants. Flowers like petunias and lilies are lovely, but they provide no nectar that butterflies can eat. Monarch caterpillars ONLY eat milkweed; those flowers are also good nectar sources as well. Monarchs will travel to find suitable plants to lay their eggs on, so if you have milkweeds in your yard, you may see them. At the end of summer, the orientation of the sun and length of the day signal them to migrate southwest to Mexico. It takes them until about the end of October to the beginning of November to get there, travelling 50-100 miles each day. They fly high to catch the best winds to sail and glide on, this reserves their strength. They will stay in the fir trees in the mountainous forests in Mexico from November to early March then begin their return north, mating along the way. Around late March or early April they've flown to Texas, Louisiana, Arkansas and Oklahoma where they find milkweed, lay eggs and die. Now these eggs will hatch and create the generation that returns through much of the Northern States and Canada; it's called the First Generation. As these monarchs travel, they also mate and lay eggs scattering their offspring from the Rockies to Maine and into southern Canada. Sometimes the Second Generation also travels north to continue the scattering of the population. You can track the migration either north or southward using www.journeynorth.org.

**Veins on
males
are thin**



It's pretty easy to tell a male monarch (above) from a female monarch (below) when you know what to look for.



**Veins on
females
are thick**