

Count the monarch eggs and caterpillars

Eggs and caterpillars are most important!

Although every step in a monarch's life cycle is essential, the *Monarch Mission* project is interested mainly in eggs and caterpillars. Why? Because we're trying to find the best places for monarch butterflies to reproduce.

The focus of the *Monarch Mission* experience (and the most fun part, too!) is counting the monarch eggs and caterpillars on your site. You should do this at least four times a summer, and ideally once a week.

Instructions

- 1- When you arrive, and regularly during your observation session, look around and scan your site. Do you see any **adult monarchs**? Can you tell whether they are male or female? To avoid counting the same butterfly twice, just note the maximum number of monarch butterflies you see at one time.

For instance, if you spot one butterfly when you arrive, and then three a bit later, and two when you leave, you should mark down the number three. There is no way to tell whether you saw six different butterflies or counted some more than once.

- 2- Note any **change** or **disturbance** that has occurred on the site since your previous visit (e.g.: Have the weeds been cut? Is there a worksite nearby? Are there a lot of people passing through?).
- 3- Closely examine the milkweed plants on your site and note down on the sheet the number of monarch eggs and caterpillars you find.

⇒ **If you can examine all the milkweed plants** on your site, go ahead. The more information, the better!

⇒ **If there are too many milkweed plants** for you to examine them all, study a **random sample**. That means you choose milkweed plants to examine, at random, as explained below.

To use this method, go to step 4.

- 4- Go to your site's starting point. Toss a pencil into the air and let it fall to the ground. The direction in which the point is facing will determine the direction of your **transect**.
- 5- Stretch out your arms on both sides and walk along your transect. Stop to **examine every milkweed plant** within the distance between your two hands, and count the eggs and caterpillars you find.
- 6- Stop after you have examined **20 plants** OR taken **20 giant steps** OR reached the boundary of your site, whichever comes first. Throw the pencil again to choose a new direction at random and start over at step 5.

If the pencil is pointing in the direction you have just come from, throw it again to decide on a new direction. (Repeating the same transect would skew the data.)

- 7- Continue until you have completed **four transects** or until you run out of time.
- 8- You may even want to take pictures of your finds. That way you can confirm your identifications and share your observations in the interactive photo gallery on the *Monarch Mission* website. Your photos also let us validate your observations.

A **transect** is an imaginary line you follow when gathering scientific data. You record data regularly all along the transect.

A single milkweed plant can spread over a large area. You should consider that **two plants are distinct** when there is **soil between** their stems.