

Milkweeds and Monarchs Vocabulary

See tables 1 and 2 below for explanations and definitions of terms used in the Milkweeds and Monarchs informational materials.

Table 1: Defined Terms: We provide definitions for some terms below. Terms are listed in alphabetical order.

Term	Definition	Example
Antennae	Either of a pair of long, thin appendages on the heads of many insects and other animals. Animals use antennae to sense their surroundings.	Ants have elbow-shaped antennae. Some beetles have clubbed antennae, or antennae with knobs on the very top.
Chrysalis	In butterflies, the stage between a larva (caterpillar) and an adult. In this stage, the animal remains hanging from a leaf or branch while changing from a caterpillar into a butterfly.	Monarch butterfly chrysalises are light green with tiny yellow spots along the edge. They can sometimes be found hanging from plants or structures near milkweed.
Community science	A scientific research project in which members of the public (called 'community scientists') work with professional scientists to discover something new about the natural world.	
Community scientists	Members of the public that participate in community science projects. This can include people of many different ages and backgrounds.	
Data	A collection of information that is gathered by careful observation or measurement.	
Fertilizer	A substance people add to soil to increase plant growth.	
Generation	All individuals born around the same time.	Your grandparents and the people born around the same time are considered one generation. Your parents and people born around the same time are a different generation.

Instar	A phase in the development of a young insect or related animal. This phase can often be divided into specific stages.	Monarch caterpillars go through several instars (stages 1-5) during their growth. For example, caterpillars are in instar stage 1 between hatching and the growth of their tentacles.
Larva (singular) Larvae (plural)	A young form of any animal that at birth or hatching is very different from its parents. Many insect larvae are wingless forms of the adult that hatch from an egg.	For example, caterpillars are the larvae of the adult monarch butterfly.
Metamorphosis	A series of extreme physical changes some animals go through to become adults. Common in insects such as butterflies.	For example, monarchs will go through a metamorphosis to change from a caterpillar into a butterfly. Metamorphosis happens during the chrysalis stage. (See definition for chrysalis above).
Migration	Seasonal movement of living things from one region to another.	For example, in North America, many geese fly south in the fall so they can live in warm regions during the winter.
Nectar	A sugary liquid made by the flowers of plants. It is an important food source for many pollinators, including butterflies and bees.	
Perennial	A plant that can live for longer than two years.	
Pesticide	A substance people use to kill insects harmful to crops and other garden plants.	
Poisonous	Likely to cause harm or death if ingested.	Milkweed leaves are poisonous to many creatures. If they eat the leaves, they may become sick.

Pollinated	Pollination is a process that allows plants to reproduce and develop seeds. It involves the transfer of pollen (a fine powdery substance produced by a plant) from one plant to another, often with the help of pollinators.	Once a milkweed plant is pollinated (has received pollen from another plant), it can produce seeds.
Pollinator	Pollinators are animals (often insects like bees and butterflies) that move pollen from plant to plant as they search for nectar and other food.	
Predators	An animal that kills and eats other animals	
Root ball	A plant's roots plus the soil that is clumped around them	When you remove a potted plant from its pot, the roots plus the soil gathered around them will come out together, forming a root ball.
Scientific name	Scientists give every species on earth a two-part scientific name. All scientific names are in Latin; they are unique and italicized. These names are agreed upon so that scientists from all over the world know exactly which species the name refers to.	The scientific name for monarch butterfly is <i>Danaus plexippus</i> . People call monarch butterflies by many different names. For example, many Australians call them 'wanderer butterflies' instead of 'monarch butterflies'. In order to avoid confusion, scientists refer to monarchs by their scientific name, which is the same in every country.
Seedling	A young plant	
Seed pods	Seed pods are structures that develop on some plants, such as milkweeds, during reproduction. They are protective cases that contain the plant's seeds.	

Species	A group of living things that are alike and can reproduce with each other.	Common milkweed is one species of milkweed plant. There are many different milkweed species in North America. You can tell them apart by differences in their flowers and leaf shapes.
Toxin	A chemical substance that can damage a living creature, often when they touch, inhale, or eat it. (A poisonous substance.)	

Table 2: Clarified Terms: We provide additional explanation for some terms below. Terms are listed in alphabetical order.

Term	Clarification	Example
Clipped	A clipped milkweed plant is one that has been pruned or cut so that only the stem and leaves remain. All flower clusters have been removed.	
Clusters	Milkweeds grow small flowers that grow closely together to form clusters. These clusters often look like large globes.	See Figure 1 on page 6 of this document.
Emerged/Open	A flower has ‘emerged’ when it has fully opened its petals.	See Figures 1 and 2 on pages 6-7 for examples of emerged (open) flowers.
Flowering stage	A period during which flowers on a plant are in a distinct phase of blooming	‘Early flowering’ = the flowering stage in which only a few of a plant’s flowers are fully open. See Fig 2 on page 7 for images of different flowering stages.
Human activity	This is a general term referring to actions people do for living and recreation. For example, human activity can include building cities, farming, and producing waste.	

Insects/spiders	Insects have six legs and often 1-2 pairs of wings. Examples include beetles, flies, butterflies, and bees. Spiders have 8 legs.
Mobile app	The Budburst mobile app is designed specifically for use on a tablet or smartphone (as opposed to a computer). Many people use the Budburst mobile app so they can collect and submit data on a smartphone while outside.
Open flower clusters	A flower cluster is considered open when one or more of its flowers have open petals.
Patch	A patch of milkweed is multiple milkweed stems growing close together.
QR codes	To use a QR code, take a picture of it with a smartphone, tablet, or QR code reader. You will then be directed to a website or app.

Figure 1: Common Milkweed Plant Parts

- A. An illustration of a milkweed stem. This stem has four flower clusters (two with open flowers and two with unopened flowers).
- B. A patch of common milkweed with multiple flowering stems.
- C. A single milkweed stem with several flower clusters.
- D. A close-up image of open (emerged) flowers.

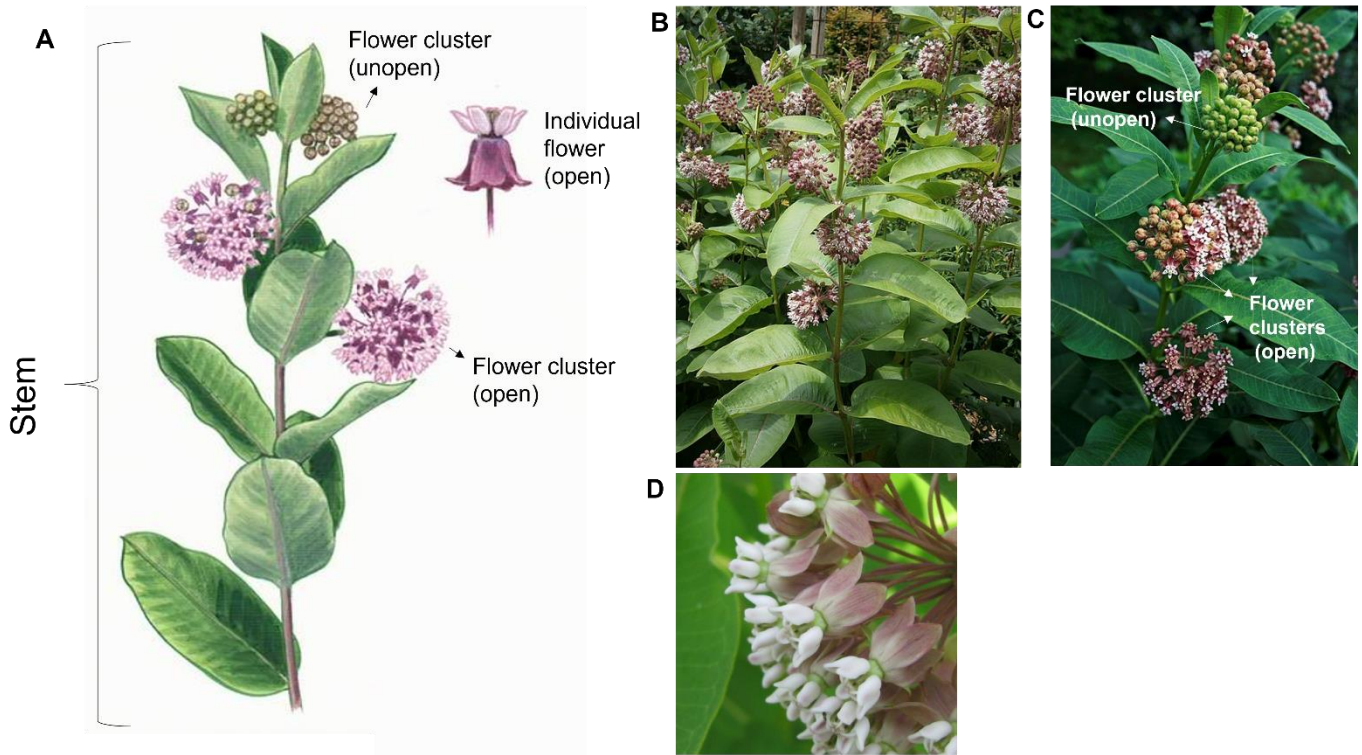


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Figure 2: Flowering Stages in Common Milkweed

- A. A stem with **no** blooming flowers (Flowering Stage = 'None'). Note that this stem has clusters of flower buds, but it is considered non-flowering because no flowers have fully emerged (the buds are still closed).
- B. A stem with a few emerged (open) flowers (Flowering Stage = 'Early'). Less than 5% of the flowers on this milkweed stem are open.
- C. The majority of flowers (>%60) have emerged (opened) on this milkweed stem (Flowering Stage = 'Middle')
- D. Most flowers (>95%) have wilted or fallen off this milkweed stem (Flowering Stage = 'Late'). Note that the flowers have changed color and many are drooping.



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