

# BUTTERFLY SCIENCE



9 Science Activities for PreK, K & 1-3



**International  
Paper**

[CelebratePlanetEarth.org](http://CelebratePlanetEarth.org)

## CONTENTS

How to Raise Your Butterflies	3
Butterfly Life Cycle Song	4
Changing Butterfly Dance	5
What Is a Caterpillar?	6
Caterpillar & Pupa Timelines	8-12
Day-by-Day Bar Chart	13
Is a Butterfly an Insect?	14
Butterfly Life Cycle Flipchart	15-17
Butterfly Body Parts	18-19
Butterfly Coloring	20

**Celebrate Planet Earth grows children  
who love & protect the Earth.**

Since 1989, more than 15 million children have delighted in raising butterflies, growing sunflowers, learning about the natural world & supporting conservation. Our work empowers students to initiate environmentally responsible actions in school & at home.

# How to Raise Your Butterflies

## Getting Started

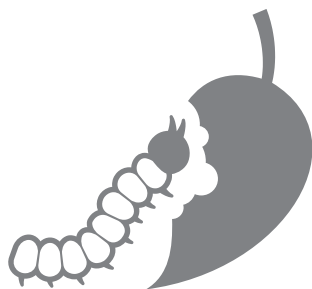
Congratulations on receiving your cup of painted lady caterpillars! The caterpillars will be 1/4 to 1/2 inch long. Allow them 48 hours to become active. They will start growing within a few days.

Always remember to handle the cup of caterpillars **GENTLY**. Do not remove the plastic lid. It has airholes. Oxygen, plus the food on the bottom of the cup, is all the caterpillars need right now.

Place your cup of caterpillars in a warm spot, out of direct sunlight.

While growing, caterpillars may suspend themselves in gray-white webbing, which is a good sign. The webbing helps protect the caterpillars.

**ON THE FIRST DAY:** *Using a permanent marker, draw one caterpillar's size & shape on the outside of the plastic cup. When your caterpillars have grown to full size, you'll be amazed to see how small they once were!*



## Chrysalis to Butterfly

When caterpillars are fully grown, they will crawl to the top of the cup, hang upside down, & change themselves into chrysalises.

Once they've all changed, wait two days & then transfer to their new butterfly house. Gently remove the plastic lid from their cup. Peel back the paper layer & lift it away from the cup. Your chrysalises should stay attached to the paper & hang freely. If one detaches from the paper, place it on the floor of your butterfly house, next to a wall.

Using a piece of tape, hang the paper layer on a wall inside the butterfly house.

Butterflies will emerge from chrysalises in 7 to 10 days. It will take them an hour or two to dry their wings. Once they begin flying around the butterfly house, they are ready to be released.

You may keep your butterflies in their house for up to a week by providing them with food. Cut an orange in half & place it on the floor of the butterfly house, flesh-side up. OR, using a small, shallow bowl, dissolve a teaspoon of sugar in a 1/2 cup of water. Place a paper towel over the bowl so that it touches & wicks up the sugar water. Butterflies can land on the paper & drink without getting their wings wet.

Time to release your butterflies outside! Be sure temperatures are reaching at least 55°F/13°C during the day. The butterflies will help pollinate trees, flowers & vegetables. They will also create eggs for a new generation of butterflies.



# BUTTERFLY SCIENCE



## Butterfly Life Cycle Song

### For All the Butterflies

*Sing to the tune of "Brother John"  
or "Frère Jacques"*

I'm a flower, I'm a flower  
Roots below, roots below  
Soil and rain and sunshine  
Soil and rain and sunshine  
Watch me grow!  
Watch me grow!

I'm an egg, I'm an egg  
On a little leaf, on a little leaf  
Soon I'll be a caterpillar  
Soon I'll be a caterpillar  
Watch me eat!  
Watch me eat!

I'm a caterpillar,  
I'm a caterpillar  
You're one too, you're one too  
Soon we'll both be butterflies  
Soon we'll both be butterflies  
Something new!  
Something new!

I'm a chrysalis, I'm a chrysalis  
Warm and dry, warm and dry  
Changing from the inside  
Changing from the inside  
Into a butterfly!  
Into a butterfly!

I'm a butterfly, I'm a butterfly  
Flying all around,  
flying all around  
Looking for a flower  
Looking for a flower  
Searching up and down.  
Searching up and down.

I'm a flower, I'm a flower  
Open to the sky,  
open to the sky  
I have lots of nectar  
I have lots of nectar  
For all the butterflies.  
For all the butterflies.

# BUTTERFLY SCIENCE



## Changing Butterfly Dance

**Materials:** Instrumental music and audio system

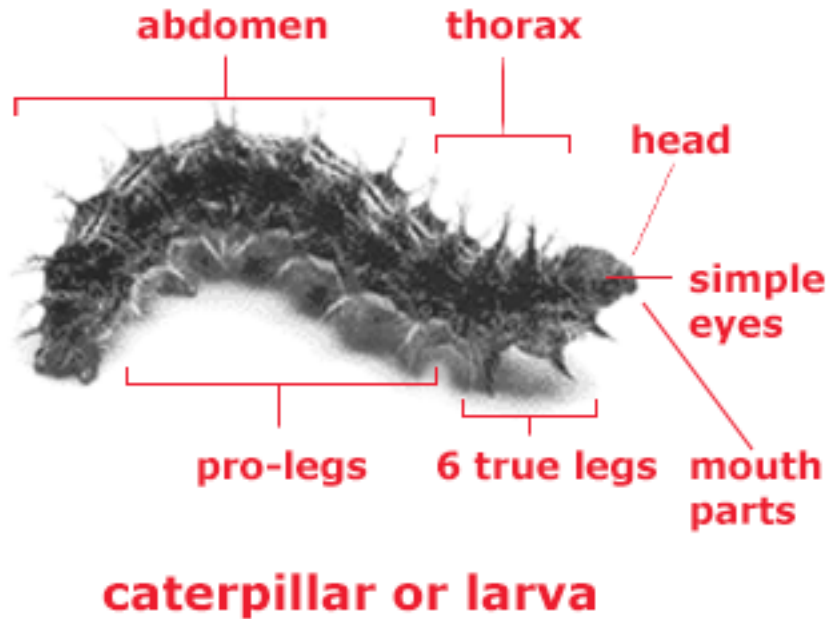
**Simple Instructions:** Guide students through an improvisational dance. Have students sit on the floor in a circle and ask them to imagine changing butterflies—how eggs hatch caterpillars, caterpillars crawl, eat and grow, then become a pupa and finally emerge as a butterfly with wings. Show them how to curl up as eggs, then push out of the egg and wiggle like a growing caterpillar, then wrap themselves tight into a pupa and then spread arms and open hands as butterflies emerge. Lead them through the process several times. Then let them try it on their own with music.

Use your dance often as a wake-up exercise or a break from study, allowing students to move and get the wiggles out.



# BUTTERFLY SCIENCE

## What Is a Caterpillar? Body Parts



**Larva**—the second stage of metamorphosis, another term for caterpillar

**Head**—the head includes a brain, a mouth, 2 antenna and 12 eyes called ocelli

**Thorax**—the thorax is the midsection where the legs are attached

**Abdomen**—the abdomen contains the heart, digestive system and other organs

**True Legs**—all insects have 6 true legs with tiny claws attached to the thorax

**Pro-legs**—located on the abdomen, pro-legs help the caterpillar move and climb

**Mouth parts**—on front of the head, a caterpillar has mouth parts to tear leaves and grind for food

**Simple eyes**—a caterpillar has 12 simple eyes, 6 on each side of its head, that show light and dark

# What Is a Caterpillar?

Name \_\_\_\_\_

Look closely at the pictures below. Circle **Yes** below if it is a picture of a caterpillar.  
Circle **No** if the picture is not a caterpillar.



YES

NO



YES

NO



YES

NO



YES

NO



YES

NO



YES

NO

# BUTTERFLY SCIENCE



## Observe, Predict & Record: Caterpillar & Pupa Timelines

### Overview

In spring, many classrooms order a cup of live painted lady caterpillars to continue hands-on discovery in this life science unit. As living creatures, the painted lady butterfly is a reliable and hardy insect for study during the warm months, but it cannot be raised successfully during the cold months.

Having live caterpillars is a wonderful opportunity to encourage the children to observe closely and ask lots and lots of questions.

Over approximately 21 days the 3-5 live caterpillars will eat prepared food in the bottom of the cup, and when ready they will form pupas attached to paper that covers the top of the cup. After they emerge as adult butterflies, it is delightful to observe them for a few days and then release them into the wild on a sunny day. Butterflies are solar-powered. They will find flowers for nectar, pollinate the flowers as they go from one to another and lay eggs on their preferred host plants.

### Timelines

Two timelines, one for the caterpillar stage and one for the pupa stage, are included to help the students look closely, make predictions and then record what they have learned about the organism.

Make 2-sided copies of both timelines. Demonstrate for your students how to fold each timeline in half lengthwise, then show them how to cut the paper halfway on the two dotted lines. This makes a flipchart for the students to complete step-by-step.

Discuss with your students what it means to make a prediction. Then use the Day-by-Day Bar Chart to confirm what you have learned about the number of days the organism is a stage, then compare your predictions.



# Caterpillar Timeline

DAY \_\_\_\_\_

I

SEE

---

I

PREDICT

---

I

LEARN



Name \_\_\_\_\_

## Caterpillar Timeline

**A  
CATERPILLAR.**

**I predict that  
my caterpillar  
will grow to  
2 inches in  
\_\_\_\_ days.**

**I learned that  
in \_\_\_\_ days  
my caterpillar  
grew to 2 inches.**

**This is how  
my caterpillar looks.**

**I predict the  
caterpillar will look  
like this.**

**I learned the  
caterpillar looks  
like this.**

I  
SEE

---

I  
PREDICT

---

I  
LEARN



**A  
PUPA.**

---

**I predict that  
a butterfly will  
emerge in  
\_\_\_\_ days.**

---

**I learned that  
in \_\_\_\_ days  
a butterfly  
emerged.**

**This is how  
my pupa looks.**

**I predict the  
butterfly will look  
like this.**

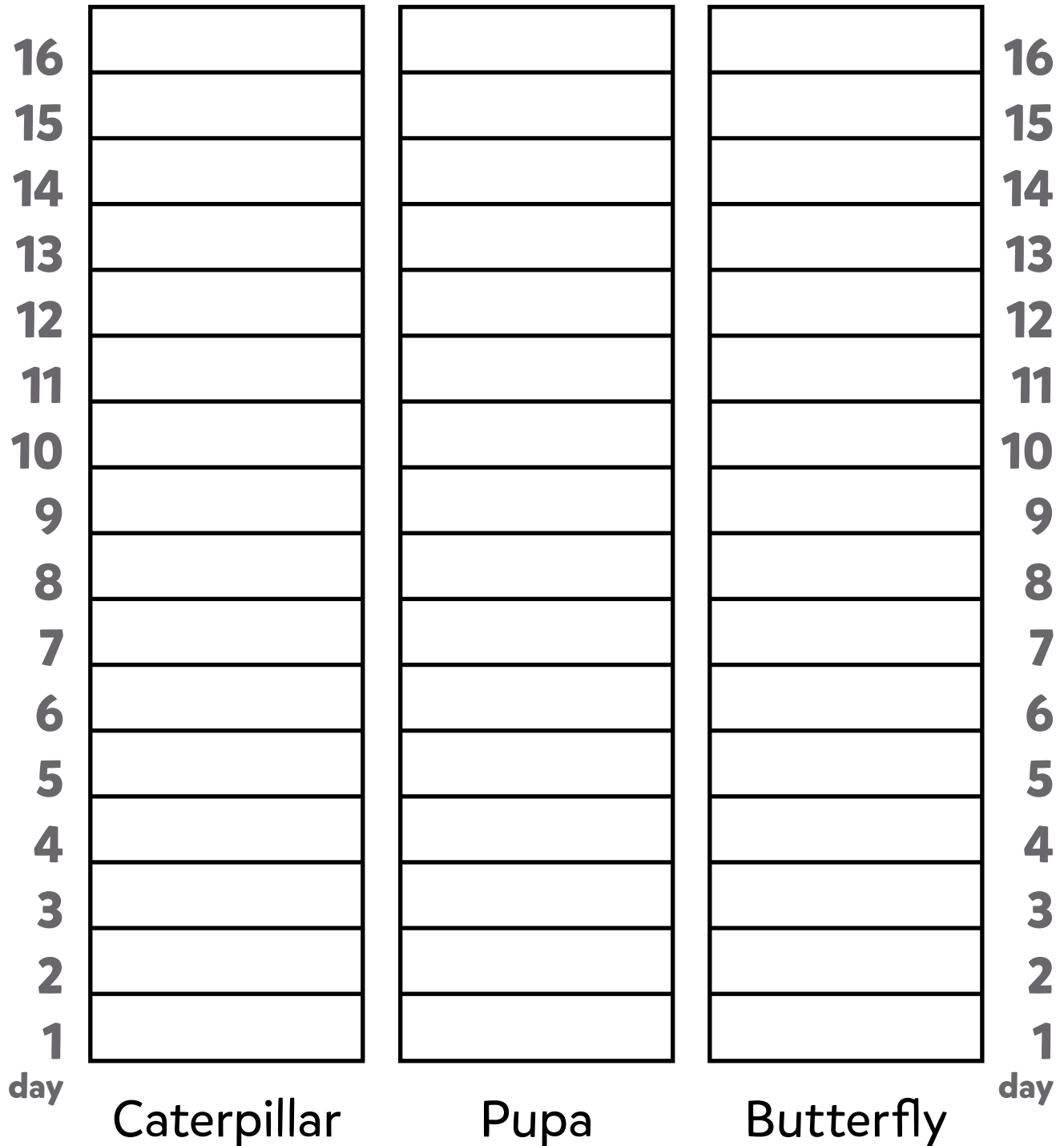
**I learned the  
butterfly looks  
like this.**

# Butterfly Day-by-Day Chart

Name \_\_\_\_\_

## What Is It Today?

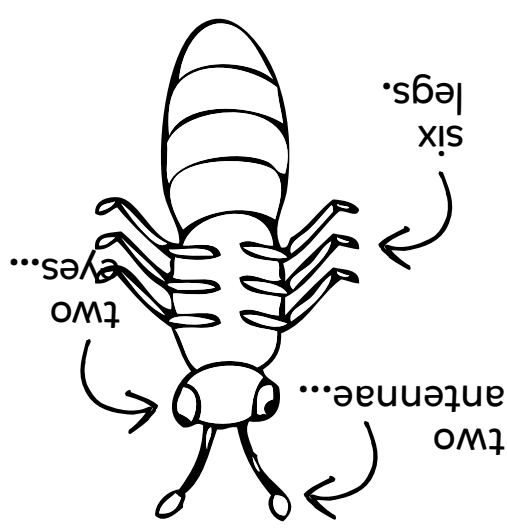
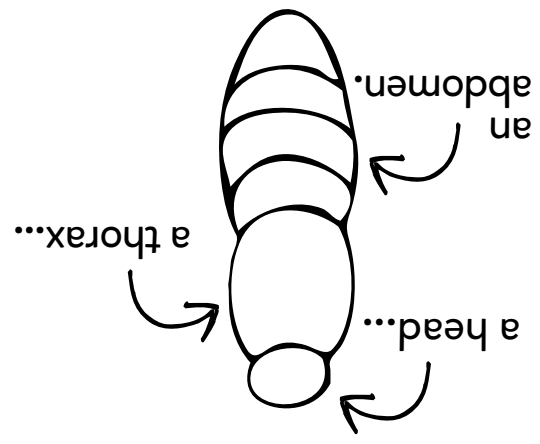
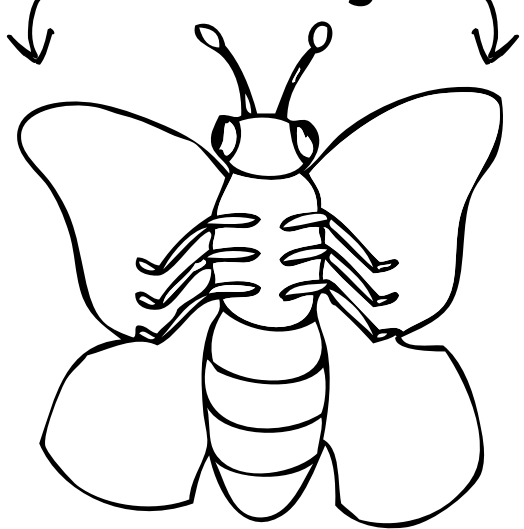
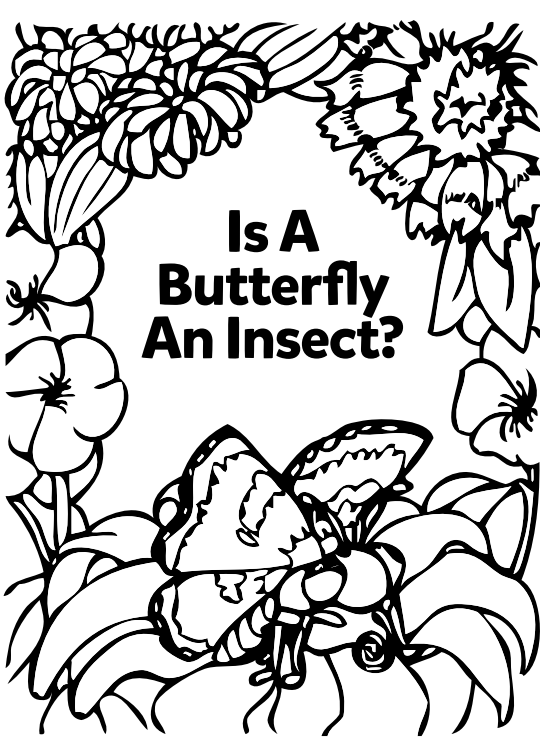
Did I observe a caterpillar today? Is it a pupa? Or a butterfly? Fill in one rectangle each day on the bar chart. On the day that you release your butterflies, write the word FLY in the rectangle. Count and compare the number of days the organism was a caterpillar, pupa and butterfly.



# BUTTERFLY SCIENCE

## Is A Butterfly An Insect?

Color these pictures, cut along the heavy black line, then fold your paper on the dotted lines. Look! You've made your own little book about butterflies. Practice reading it to your friends!

 <p><b>An insect also has...</b></p>	 <p><b>An insect body has three parts...</b></p>
<p><b>And most insects have wings</b></p>  <p><b>A Butterfly IS An Insect!</b></p>	 <p><b>Is A Butterfly An Insect?</b></p>



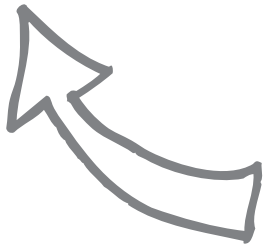
# BUTTERFLY SCIENCE

## Butterfly Life Cycle



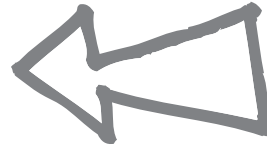
Cut out the four pictures.  
Paste the pictures inside the flip chart of a butterfly life cycle.





**PUPAS  
CHANGE**

**CATERPILLARS  
GROW**



Name \_\_\_\_\_

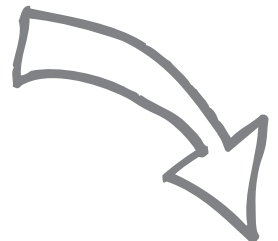


INTERNATIONAL  PAPER

**BUTTERFLIES  
FLUTTER**



**EGGS  
HATCH**





**A butterfly flutters  
& lays eggs for  
\_\_\_\_\_ days.**

**An egg  
hatches in  
\_\_\_\_\_ days.**

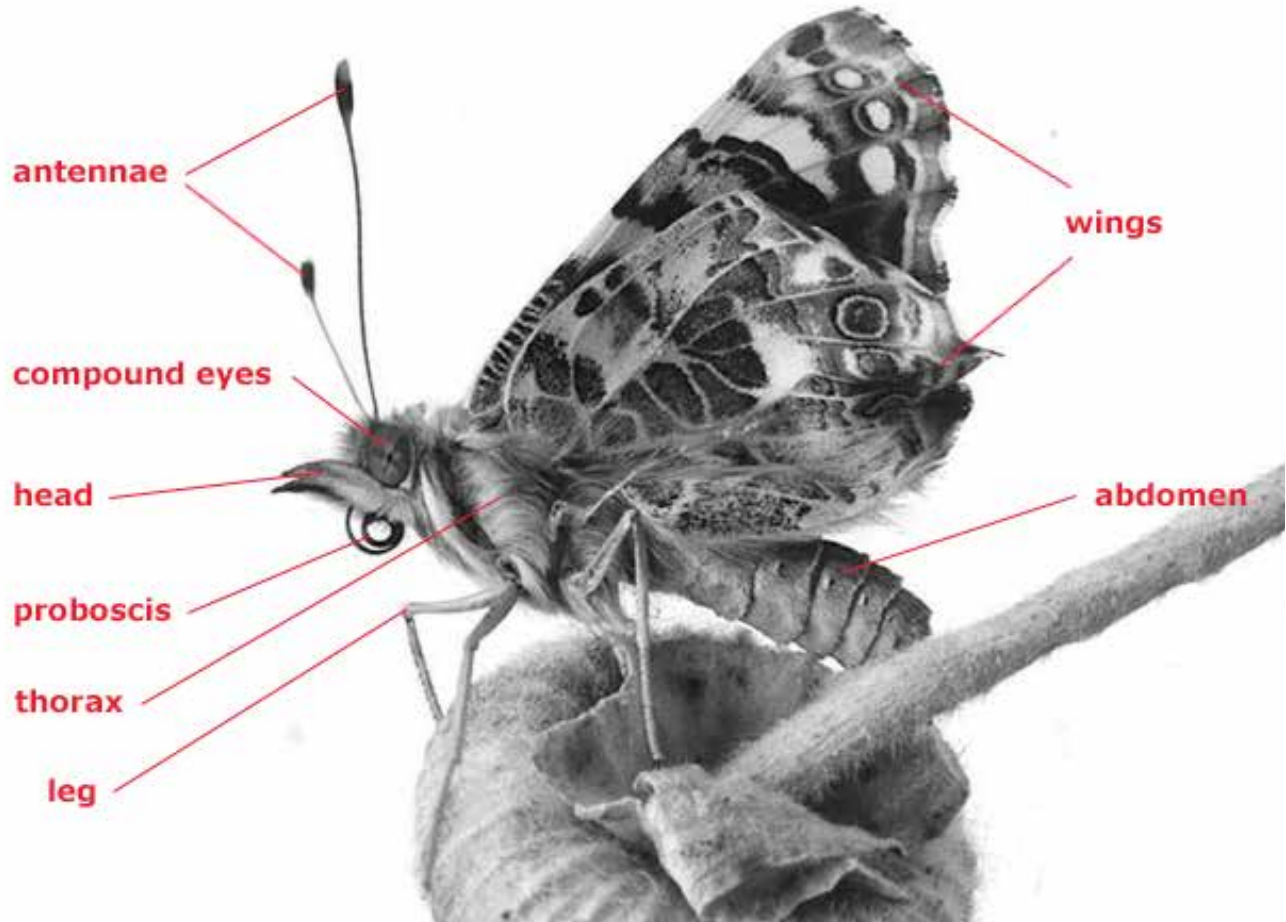


**A pupa  
changes for  
\_\_\_\_\_ days.**

**A caterpillar  
grows for  
\_\_\_\_\_ days.**

# BUTTERFLY SCIENCE

## Butterfly Body Parts



**Abdomen**—the hind part of the butterfly includes the stomach, heart and other organs

**Antennae**—on the butterfly's head, used to taste the air and help with balance

**Compound eyes**—thousands of tiny lenses help the butterfly see in all directions

**Head**—the head includes the proboscis, 2 antennae and 2 compound eyes

**Leg**—the butterfly has 6 legs, in 3 pairs, attached to its thorax

**Proboscis**—the butterfly tongue, which works like a drinking straw

**Thorax**—the midsection of the butterfly with 3 pairs of legs & 2 pairs of wings

**Wings**—2 pairs of wings on the thorax allow the butterfly to fly

# Butterfly Anatomy

Name \_\_\_\_\_

Can you match the words on this page to the correct body parts on the butterfly?  
All you have to do is - 1. Write the correct number inside each circle, and  
2. Fill in the blank below each picture.

- 1 wings    2 antenna    3 head**  
**4 thorax    5 abdomen    6 leg**



