



BUILD A BUTTERFLY LAB

Grades K-3: Week 3, Day 3

MAKE YOUR OWN BUTTERFLY SOAR

WELCOME

(5 min)

Welcome your students to camp. Be friendly.

Say: **Butterfly wings are beautiful, and they help delicate butterflies fly and flutter through the air. The patterns on their wings also have an important job—to keep them safe! Today, you'll get to color your own butterfly and make it fly, just like real ones do in the wind. Let's see how high and far your butterfly can go!**

SPORTS / GAMES

(30 min)

Materials:

- Cones



DON'T WAKE THE BUTTERFLY

What you'll do:

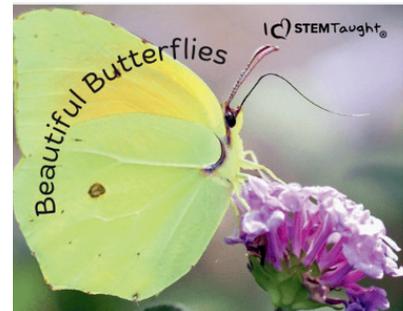
1. Use cones or markers to mark the playing field. Choose one player to be the butterfly, who will "sleep" in the middle of the field.
2. The players line up on one end of the field. The butterfly player (It) lies down in the center as if sleeping. When the STEM Coach says "Go!", the other players tip-toe quietly toward the far end of the field.
3. At any moment, the STEM Coach can shout, "Wake up butterfly!" The butterfly will jump up and try to tag the other players.
4. Players must run to the opposite end of the field without getting tagged. If a player is tagged, they become another butterfly.
5. The game continues until all players have been tagged.

READING

(20 - 30 min)

READ BEAUTIFUL BUTTERFLIES

Read the story and direct students' attentions to the beautiful patterns and function of butterfly wings beyond flight. Talk about the amazing things butterflies can do and call on students to share the pattern they like best.



MEDIA

(10 min)



CAN CURIOUS GEORGE BE A BUTTERFLY?

Say: Have you ever wanted to be a butterfly? Let's see how George tried to be a monkey-butterfly! Do you think he can do it?

George Becomes a Butterfly!

<https://youtu.be/dLm2kYD2X-8>

Ask: What materials would you use to make butterfly wings?

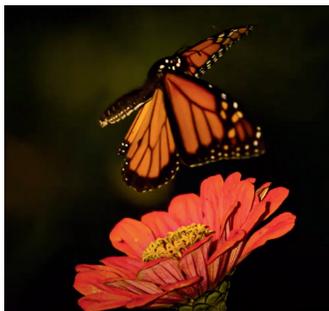


STEM CRAFT

(30 min)

Materials:

- Paper cut into rectangles
- Yarn or string



EXPLORE

(20 min)

Materials:

- A glass or ziplock bag filled with water or any available shiny materials



STEM TIME

(60 - 90 min)

Materials:

- Wind-up butterfly toys
- Markers
- Data tabulation sheet

FOLD YOUR BUTTERFLY WINGS

First, show your students this slow motion, calming footage of butterfly flight.

Healing flight of butterflies - 1000 fps slow motion

<https://www.youtube.com/watch?v=keP4zHb1C5M>

Ask: **What did the butterflies do to their wings?** (Example: **They spread and flapped them. Sometimes they were folded.**)

Say: **We will fold our own butterfly today.** Students follow along with this tutorial and make a butterfly.

Easy Paper Butterfly Origami - Cute & Easy Butterfly DIY

<https://www.youtube.com/watch?v=qmPTMNBlz0o>

Optional: The STEM Coach can hang these up for display.



CAN BUTTERFLIES BE BLUE?

Say: **Let's see why some blue butterflies aren't really blue:**

Animals Cannot Be Blue | Explorer

<https://www.youtube.com/watch?v=KN7krvnm2uM>

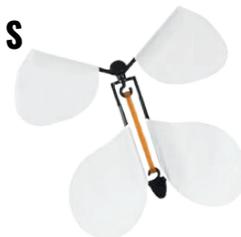
What You'll Do:

Take your students to a sunny spot (or near a bright window). Set out materials like a ziplock bag, a bag or glass filled with water, a handheld mirror if available, a clear ruler or even a shiny spoon. Students rotate the materials slowly so they catch the light. At the right angle, the glass or bag of water should create a rainbow on the wall. Ask: **"Do you see any rainbow colors?"** Students move their head slowly while looking at the object. Ask: **"Do the colors change when you move?"** Explain: **Sometimes color isn't from paint or pigment—it's from light bouncing and bending. Butterfly wings are full of tiny shapes that bend light. That's how they 'make' blue!**

EXPERIMENT WITH WIND-UP BUTTERFLIES

Instructions for butterflies:

1. Play this calming instrumental music as students work. **"Butterfly Garden" By Tim Janis**
https://www.youtube.com/watch?v=wyBVXsPO4_M
2. Each student gets a wind-up butterfly toy.



STEM TIME

(Continued)



3. Students decorate their butterfly with spots, stripes or any design they like. Say: **Butterflies can use the designs on their wing to stand out, blend in, or to warn predators!**
4. Take students outside. Demonstrate how to hold the body and wind it up. Students spin the wings round and round to twist the rubber band. Release the toy and watch it fly. They let it go and watch it flap and fly away! Students use their data table at the end of this lesson to record their flights.
5. Experiment: As a STEM Coach, know the ideal flight will typically happen if students wind the rubber band 30+ times.
6. Encourage students to try launching from different heights or angles. Explain: **The rubber band is storing energy, like a spring. When you wind the rubber band, energy is stored in it. When you let go, that energy makes the wings flap – just like a real butterfly’s quick wingbeats.**
7. Let your students take their butterflies home. (They can try winding up their butterfly and tucking it into a book as a fun surprise for a family member.)

DANCE TIME

(20-30 min)

Materials:

- Music
- Optional: Ribbon dancers, streamers



DANCING BUTTERFLIES

What you’ll do:

Watch the video with your students and let them dance along. Say: **When butterflies flap their wings, they can go up, down, and sideways. Its just like dancing in the air!** Show students how to flap their pretend wings, wiggle and float gracefully like a butterfly.

George Becomes a Butterfly!

https://www.youtube.com/watch?v=U_Ld1L6c1p4

1. Play the video with your students and let them dance along. Students can flutter, float, zig-zag and have a blast pretending to be butterflies!
2. If using ribbon, scarves or pieces of streamers, students can use them to create beautiful swirls. Extension: You can also play dancing statues (students ‘freeze’ when the music stops).

MINI-FLYER PLAY

(20 - 30 min)

Materials:

- Mini-flyers

TWIRL LIKE A BUTTERFLY

Instructions:

Students attach a streamer to their Mini-Flyer then pass it around to see the streamer twirl like the streamers might have done while dancing!

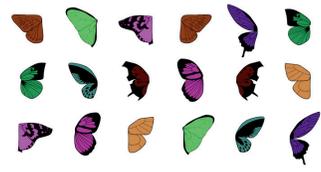


STEM GAME

(10-15 min)

Materials:

- Smart Board or personal devices



STEM SNACK

(30 - 40 min)

Materials:

- Assorted fruits and vegetables (celery, apples, cucumbers, oranges, grapes, carrots, etc.)
- Plates or napkins
- Kid-safe knives or plastic knife

CLEAN UP / DISMISSAL

LEARN ABOUT SYMMETRY

Instructions:

Say: **Have you noticed that butterfly wings are mirror images of each other? That's called symmetry. This is important because even wings lead to steady flight. If both wings are the same size and shape, the butterfly can flap evenly and fly straight. Unbalanced wings would cause the butterfly to have a wobbly flight.**

What you'll do:

1. Using a smartboard if available, play this simple matching game together as a class. Call on students to point to the matching wing. If there are more devices (chromebooks or laptops) available, students can play this game themselves or in groups.

<https://toytheater.com/matching/>

FLYING CREATURES FOOD CHALLENGE(OPTIONAL)

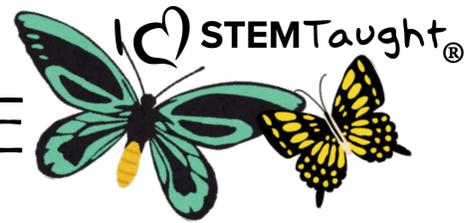
Say: **"Today, you're going to make flying creatures from food!**

Think about how birds flap their wings or how insects hover in the air. You can create a bird, an insect, or any flying creature using the food we have. Let your imagination soar as you design your flying creation!"

1. Students wash hands and help slice fruits and vegetables using kid-safe knives.
2. Students use the food to create a fun snack shaped like an insect, bird, or any other creature that flies! They can use the fruit and veggies to make wings, bodies, antennae, tails, etc.
3. After completing their creations, students will share their designs and explain which flying creature they made and how their food creature mimics real-life flight.
4. Enjoy your healthy snack!



TWIST-A-BUTTERFLY: BEST FLIGHT CHALLENGE



Twirl your butterfly the correct number of times to wind it up and then launch it. Run and measure how far it flies using handspans! Record your flight data and circle the best flight.



Twirl your butterfly 5 times. How far does it fly?

Handspans



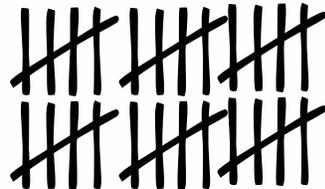
Twirl your butterfly 10 times. How far does it fly?

Handspans



Twirl your butterfly 15 times. How far does it fly?

Handspans



Twirl your butterfly 30 times. How far does it fly?

Handspans

Choose your own number of twirls and test!

Handspans

