



Competition Info

- COMPETITION INFORMATION -

Winged Migration Expo: Student STEAM Challenge

Join the K-12 Solano County student competition hosted by the [Winged Migration Expo](#), the weekend of January 30th and 31st, 2027. Students and families are all welcome to celebrate and join the many activities. *Share the [student flier](#) with students and families to launch the opportunity this school year!*

The Winged Migration STEAM Challenge is your chance to explore the amazing journeys of local migratory species (birds, bats, butterflies) and share what you've discovered in a fun, creative project... **And a chance to win prizes for your creativity!**

Students can build, design, code, draw, sculpt, model – any format is welcome! All submissions will be showcased during the Winged Migration Expo. *Note that anything created digitally must be printed out.*

Submission Directions

- **[Registration Form](#)**: Due Friday, January 22, 2027.
 - **[Waiver](#)**: attach this waiver signed by a parent or guardian.
- **Project Due Date**: Friday, January 29, 2027, anytime between 2:00pm - 5:00pm
- **Project Drop-off Location**: [Building 69, 4th St. and Waterfront Avenue on Mare Island in Vallejo](#) (click the link to see the location on Google Maps)
 - Any adult, including a teacher, may drop off a student's project.
 - *When turning in projects, make sure the student's [ID Sheet](#) is on the back.*

Educators: Interested in entering an entire class or a large group of entries? Contact Steph Morgado at SMorgado@solanocoe.net for support.

Questions? Please contact Steph Morgado, smorgado@solanocoe.net

1. Competition Overview

The Winged Migration Student STEAM Challenge invites K-12 students to create a project that explores local bird, bat, or butterfly migration, wetlands, or flyways through any combination of science, technology, engineering, art, or mathematics showcasing winged migration.

Students may submit an **original creation** in any format: model, art piece, experiment, game, data visualization, story map, public service announcement, etc.

Grade Level Divisions

- | | |
|------------------------------|---------------------------|
| ● Grades K–2 (Explorers) | ● Grades 6–8 (Innovators) |
| ● Grades 3–5 (Investigators) | ● Grades 9–12 (Scholars) |

2. Project Categories (All Grade Levels)

Students are welcome to submit projects related to birds, bird migration, and wetlands. The following are only ideas, and students are encouraged to be creative. *Note that anything created digitally must be printed out, as there will not be power to display your project.*

- COMPETITION INFORMATION -

For additional ideas, see the [Project Ideas tab](#).

A. Migration Mapping & Data Storytelling

- Story map (paper)
- Map with data (routes, distances, etc.)
- Infographic or timeline
- Migration math challenge

B. Engineering & Design

- DIY bird feeder/bath
- Wing model or bird-inspired invention
- Aerodynamics experiment
- Lego (or other building block) habitat or bird model

C. Art, Media, and Communication

- Painting, sculpture, collage
- Digital art or animation (must be printed)

- Public Service Announcement
- Sound-based art (bird song visualization)

D. Interactive Media

- Interactive game
- Digital story or interactive exhibit
- Simple simulation (what if wetlands disappear?)

E. Ecosystem & Wetland Science

- Mini wetland model
- Diorama
- Food web model
- Climate change impact model

3. Judging Criteria and Awards

Projects are judged on **creativity**, **connection to the theme**, **scientific accuracy**, and **craftsmanship**, not perfection.

Category	Description	Points
Creativity & Originality	How unique and engaging is the idea?	10
Connection to Theme	Does it clearly relate to winged migration, birds, or wetlands?	10
Accuracy & Understanding	Scientific accuracy appropriate to grade level.	15
Craftsmanship & Communication	Presentation quality, clarity, and effort.	15
TOTAL		50

Awards and Recognition Categories

Students may be recognized and receive prizes across each grade level division and project categories. There will also be an award for "Best Overall- Conversation Champion," across each grade level division.

Winners: Winners will be announced Saturday, January 30, 2027, 3:50pm, at the [Winged Migration Expo](#).

The awards and prizes per division and category will be announced and students must be present to receive any awards or prizes.

Project Ideas

- PROJECT IDEAS -

Winged Migration: STEAM Student Challenge

The Winged Migration STEAM Challenge is your chance to explore the amazing journeys of birds and share what you've discovered in a fun, creative project... **And a chance to win prizes for your creativity!**

You can build, design, draw, or invent something that helps others understand how birds migrate and why wetlands matter. At the showcase hosted at the [Winged Migration Expo](#), your work becomes part of a big celebration where everyone gets to see your ideas, creativity, and the story you want to tell about the bird migration.

Students: The challenge is open to K-12 students in Solano County.

Formats Students Can Submit

- Poster or infographic
- Art: Painting, sketches, ceramics, digital art, animation, etc.-- All art is welcome!
- Science/engineering model
- Diorama
- Essay/storytelling/poetry piece
- Interactive display
- Anything else that showcases STEAM and bird migration!

Note that anything created digitally must be printed out, as there will not be power to display your project.

Project Ideas (All Grade Levels)

Here are some project ideas to get started. You may use one of the below for inspiration, or create something else that is related to bird migration.

1. Build a Bird Migration Story Map

Students create a digital/physical map showing the journey of a specific migratory bird, bat and/or butterfly species.

- Could include: stopover sites, threats, fun facts, drawings/models.

2. DIY Wingspan Explorer

Students measure their own wingspan and compare it to various birds.

- Make a poster, model, infographic, etc.

3. Create a Mini Wetland Ecosystem in a Jar or Box

A simple terrarium/aquatic micro-wetland model explaining why wetlands matter to migrating birds.

- PROJECT IDEAS -

4. Bird/Bat/Butterfly Flight Science Experiment

Students create simple paper/foam models to test:

- wing shapes
- aspect ratios
- gliding vs. flapping
- lift and drag

5. Bird Song Visualizer

Use free apps or simple coding (Scratch/MakeCode) to create visual art based on bird sounds.

6. Migration Art + Data Mashup

Students pick a migratory bird, bat, or butterfly and create an artwork that embeds real data (flight path, population numbers, distances).

7. Build a DIY Feeder or Bird Bath with Eco-Friendly Materials

Students design and prototype bird-friendly structures using recycled materials. Present as a design report, poster, etc.

8. Create a “Save the Flyways” Public Service Announcement

A poster or flier PSA advocating for wetland and migratory bird, bat, and/or butterfly conservation.

9. Migration Math Challenge

Students calculate:

- distances traveled
- energy used
- speed comparisons
- mapping migration routes using scale

10. Design a Bird-Inspired Invention

Students examine how birds solve problems in nature and design a human technology inspired by them (biomimicry). Ideas: drones, lightweight structures, wing-inspired mechanism.

11. Climate Change + Migration Scenario Explorer

Students build a model, infographic, or digital piece showing how warming, storms, habitat loss, or pollution may alter bird migration.

12. “Adopt a Wetland” Diorama or Virtual Exhibit

Students craft a detailed model or virtual environment showcasing a specific wetland habitat. Include:

- the birds, bats, and/or butterflies that depend on it

- PROJECT IDEAS -

- food webs
- threats and solutions

13. Lego Migration Challenge

Using Lego or similar building materials, students construct and include a short explanation video or write-up:

- a migratory species
- a habitat
- a flying mechanism

14. Migration Game (Beginner-Friendly)

- guide a migratory species through obstacles
- protect habitat
- collect food to migrate

15. Wearable Art: Costume or Wing Design

Students design wings or wearable pieces inspired by a migratory species.



Teacher Guide

- TEACHER GUIDE-

Winged Migration: Student STEAM Challenge

1. Overview

The **Winged Migration STEAM Challenge** invites K–12 students to explore bird migration, other local species that migrate (bats, butterflies), wetlands, and ecosystems through creative, hands-on STEAM projects. Projects can be completed in 1-2 weeks, making them accessible within typical classroom scheduling.

Share the [student flier](#) with students and families to launch the opportunity.

2. Learning Goals

Students will:

- Understand basic concepts of **migration, adaptation, and habitats**
- Explore the importance of **wetlands and stopover sites**
- Apply **STEAM skills**: inquiry, engineering, art, design, math, and communication
- Demonstrate creativity and problem-solving
- Communicate scientific ideas clearly

3. Introducing the Challenge (One-Class Launch Plan)

Step 1: Hook (10–15 min)

Show a [short video clip \(option 2\)](#), explore this [webpage](#), and/or or images of [California birds](#).

Ask:

- What do you think is happening? Why?
- What challenges might these birds face?
- Why do some places on Earth matter more to migrating birds?

Step 2: Connect to Local Species (5–10 min)

Find 2–3 migratory birds, bats, or butterflies from our region.

Step 3: Project Ideas (5-10 min)

Review the competition Information: Explain that students are welcome to submit projects related to birds, bird migration, and wetlands. The following are only ideas, and students are welcome to be creative. Note that anything created digitally must be printed out, as there will not be outlets to display student projects. For additional ideas, see the [Project Ideas tab](#).

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A. Migration Mapping & Data Storytelling

- Story map (paper)
- Map with data (routes, distances, timing)
- Infographic or timeline
- Migration math challenge

B. Engineering & Design

- DIY bird feeder/bath
- Wing model or bird-inspired invention (biomimicry)
- Aerodynamics experiment
- Lego (or other building block) habitat or bird model

C. Art, Media & Communication

- Painting, sculpture, collage
- Digital art or animation (must be printed)
- Public Service Announcement
- Sound-based art (bird song visualization)

D. Coding & Interactive Media

- Scratch or MakeCode game
- Digital story or interactive exhibit
- Simple simulation (what if wetlands disappear?)

E. Ecosystem & Wetland Science

- Mini wetland model (“ecosystem in a jar”)
- Diorama
- Food web model
- Climate change impact model

Step 4: Student Brainstorm (10–15 min)

Students can begin the optional [Student Planning Sheet](#) to brainstorm. Students browse ideas (optional from the [Project Ideas tab](#)) and/or discuss:

- What interests them?
- What type of project fits their skills and creative interests?

4. Quick Materials List (*ideas to get started*)

- Construction paper, markers, poster boards
- Glue, tape, cardboard

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- Recycled materials (bottles, boxes, string)
- Computer or tablet access (optional)
- Natural materials for models
- Simple measuring tools
- Optional: Lego, other building blocks, craft sticks, clay, etc.

5. Guiding Questions for Students

Use these to help students deepen learning (they are also included in the [Student Planning Sheet](#)):

- What is special about your bird or ecosystem?
- How far does your bird migrate, and why that route?
- What resources or habitats does it need?
- What threats does it face?
- How does your project communicate a scientific idea?
- How could you improve your design or explain it more clearly?

6. Final Submission Requirements

Each project submission must include:

1. **[Registration Form](#)**: Students must complete the registration form to enter their project
 - a. **[Waiver](#)**: As the teacher, you may print the waivers and have students turn them into you. You can then scan them and email them to Steph Morgado, SMorgado@SolanoCOE.net. If you are dropping projects off, you can physically turn them in. *Please reach out to Steph to let her know about any alternative plans or anything you need to make this easier for you!*
2. **Project Due Date**: Friday, January 29, 2027, anytime between 2:00pm - 5:00pm
 - a. Any adult, including a teacher, may drop off a student's project.
 - b. *When turning in projects, make sure the student's **[Project ID Sheet](#)** is attached to the back of the project (not visible to judges).*
3. **Project Drop-off Location**: [Building 69, 4th St. and Waterfront Avenue on Mare Island in Vallejo](#) ([click the link to see the location on Google Maps](#))



Student Planning Sheet

- STUDENT PROJECT PLANNING WORKSHEET -

Winged Migration: Student STEAM Challenge

Name: _____

To start thinking about ideas, review the [Project Ideas tab](#).

Project Title (working title):

1. Choose Your Project Category

2. What Topic or Species Are You Focusing On?

Example: “White pelican migration,” “How wetlands help shorebirds,” “Bird-friendly inventions,” etc.

My topic is:

3. What Will You Create?

Describe what you plan to make (poster, model, diorama, video, coded game, etc.)

My project will be:

4. What Do You Want Your Audience to Learn?

List 2–3 key ideas.

1. _____
2. _____
3. _____

5. Quick Research Notes

Write 3–5 important facts you found:

- _____
- _____
- _____
- _____
- _____

6. Materials You Will Need

-
-
-
-
-
-
-
-

7. Planning Sketch or Diagram

(Draw here: your design, model shape, or storyboard.)

8. Steps to Complete My Project

1. _____
2. _____
3. _____
4. _____

9. Reflection Questions

- What might be the hardest part?

- How will you make your project clear and creative?

10. Extended Research

Use these questions help you continue to deepen your learning and help you plan your projects:

1. What is special about your species or ecosystem?
2. How far does your species migrate, and why that route?
3. What resources or habitats does it need?
4. What threats does it face?
5. How does your project communicate a scientific idea?
6. How could you improve your design or explain it more clearly?

Project ID Sheet

PROJECT ID SHEET

DIRECTIONS: Type or print clearly. Attach this to the back of your project so that the judges cannot see your information (to keep judging anonymous). If your project is small, this sheet may be folded/cut.

Project ID #: <i>(Completed by Winged Migration Staff)</i>		
Student Name:		Grade:
Name of School:		
Teacher:		
Project Title:		
Project Category <i>(highlight/circle one):</i> ● Migration Mapping & Data Storytelling ● Engineering & Design ● Art, Media, and Communication ● Interactive Media ● Ecosystem & Wetland Science		