

# Amigos de Bolsa Chica's FLOW Field Trip Scheduling & Bus Transportation Form



## Important FLOW field trip and bus funding application information

Thank you for your interest in bringing your students on a field trip to learn about the FLOW Citizen Science Monitoring Program! **Please read the following carefully before filling out the FLOW Field Trip Scheduling & Bus Transportation Form.**

**FLOW** stands for *Follow and Learn about the Ocean and Wetlands* and is a program of Amigos de Bolsa Chica that is supported by donations and funds from various grants. This allows us to provide funding for buses for Title I schools for FLOW field trips. **Please note:** Funding is available for up to \$400 for one bus.

**What is FLOW?** FLOW is an opportunity for students and community members to learn more about coastal ecology, participate in the collection of scientific data, and get involved in environmental quality monitoring efforts. FLOW Citizen Scientists collect plankton samples utilizing plankton nets at the Bolsa Chica Beach and wetlands. They measure and record water quality variables (such as temperature, salinity, nutrients, pH) and other environmental data (such as weather and wind conditions and tide height) in support of the analysis of the plankton which is done under the microscope. Our citizen scientists are trained on the identification of plankton and are continuously looking for potentially harmful plankton species in the water. Our data and samples are then sent to the California Department of Public Health (CDPH) in support of their Phytoplankton Monitoring Program.

- The FLOW program is appropriate for middle and high school students.
- We typically host field trips on weekday mornings from 9:00am until 12:00pm.
- Our facilities can accommodate about 60 students (1 bus) at a time.
- We will provide:
  1. pre-field trip materials (powerpoint and worksheet) to be used in the classroom or sent home as homework (allow about one class period of 50 minutes), so that students are prepared before they arrive for the field trip,
  2. worksheet form for the field trip, volunteers to facilitate learning at stations, and
  3. post-field trip materials to be used in the classroom or sent home as homework (allow about one class period of 50 minutes), so that students can reflect on what they have done and learned during the field trip.
- See the next page for a typical field trip schedule.
- We need at least 3 weeks notice to schedule and staff a field trip.

**LOCATION:** Here is an online google map to help you find us: <http://goo.gl/zGzBXh>

The wetland side of the program begins at the Bolsa Chica Ecological Reserve (Green dots) and the beach side of the program is held at the Bolsa Chica State Beach Visitors Center (Blue dots).

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**Typical Schedule for a 60 student FLOW field trip (schedule may be altered for a smaller group)**

## Arrival

9:00 AM	Bus arrives at the Bolsa Chica State Beach Visitor Center
9:00	Welcome; brief intro to rules and expectations; students use the restrooms
9:20	Half of the class gets back into bus and drive to the wetland side while other half of students walk to the visitor center
9:30	All students work on their first station (20 minutes)
9:50	Students switch from station A to station B and vice-versa
10:00	All students work on their second station (20 minutes)
10:20	Students at wetland board bus and return to State Beach
10:30	Students at Visitors Center get on bus to the wetland
10:40	All students work on their third station (20 minutes)
11:00	Students switch from station A to station B and vice-versa
11:10	All students work on their fourth station (20 minutes)
11:30	Students at wetland board bus and return to State Beach
11:40	Wrap up with all students at State Beach
12:00 PM	End of FLOW program

## Wetlands/Ecological Reserve SIDE

Activities in each station last approximately 20-30 minutes

Station A (~14 students) Brief tour of the wetland: focus is on the ecological importance of this ecosystem and connectivity with the ocean

Station B (~14 students) Students assist Citizen Scientists in collecting plankton with plankton nets, measuring salinity with refractometers and temperature with thermometers and recording data in datasheets.

## Beach/State Park SIDE

Station A (~14 students in 3 groups of 4 or 5 at the tables outside) Students perform chemical tests for water quality assessment: colorimetric test kits are used to measure nitrates, ammonia, phosphates and pH

Station B (~14 students at the tables inside) Students use microscopes to observe and identify planktonic organisms: Focus is on harmful algal species

**Suggested Clothing/What To Bring:** We recommend water, comfortable walking shoes, jackets (it can be **windy and cold** throughout the year), and in summer months wear sunscreen and/or a hat. Binoculars are optional, but especially useful in the wetlands.

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If you would like to bring your class or group on a FLOW Field Trip, please fill out the application below. If you are a Title 1 school and in need of assistance with bus transportation costs, please include the requested information. Send the completed form (saved as pdf, scanned, or photographed) to [flow@amigosdebolsachica.org](mailto:flow@amigosdebolsachica.org), or mail it to Amigos de Bolsa Chica, P.O. Box 1563, Huntington Beach, CA 92647.

1. Teacher's name: \_\_\_\_\_

2. Email address: \_\_\_\_\_

3. Cell phone (for communication on the day of the FLOW Field Trip): \_\_\_\_\_

4. School Name: \_\_\_\_\_

5. Street Address, City, Zip: \_\_\_\_\_

6. Number of students you plan to bring: \_\_\_\_\_

7. Grade(s): \_\_\_\_\_

9. Does anyone on your tour have special needs? If so, please explain.

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10. What is your preference for field trip date?

First choice: \_\_\_\_\_

Second choice: \_\_\_\_\_

Third choice: \_\_\_\_\_

Fourth choice: \_\_\_\_\_

11. As we move forward with FLOW curriculum development, we would like to know which of the topics from the following page would be most useful for us to focus on for you and your students. We will do our best to apply that focus for your field trip, but keep in mind we are still working on adapting our program.

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Please list the theme numbers in order of preference: \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_.

Theme	Topics and Concepts	NGSS*	
		Middle	High
<b>1.</b> Comparing and contrasting organisms of the plankton community	Cell structure; Single-celled vs. multicellular organisms; examination of plankton anatomical structures, shapes and their evolutionary history, morphological traits and natural selection; Community, populations and ecosystems; Variation and distribution of traits as a result of genetic and environmental factors	LS1-1 LS4-2 LS4-6	LS3-2 LS4-2 LS4-5
<b>2.</b> Phytoplankton and Zooplankton: exploring energy sources, trophic levels and ecological relationships	Primary production; photosynthesis; autotrophs vs. heterotrophs and mixotrophs; Co-evolution; Predation; Symbiosis; Cycling of matter and energy flow in ecosystems; Community, populations and ecosystems; Biodiversity	LS1-6 LS1-7 LS2-1 LS2-2 LS2-4	LS1-5 LS1-7 LS2-1 LS2-2 LS2-4 ESS2-7
<b>3.</b> Water quality, algal blooms and nutrient recycling in coastal ecosystems	Plankton growth as a response of nutrient uploads; Eutrophication: Cycling of matter and energy flow in ecosystems; Community, populations and ecosystems; Algal blooms: triggers and dynamics; Effects of seasons on plankton communities; Climate, currents, upwelling and other local factors that influence plankton growth; Point and non-point source water pollution; Overfishing; Environmental impacts of human activities; Biodiversity	LS1-5 LS1-6 LS2-3 LS2-4 LS2-5 LS3-2 ESS1-1 ESS2-6 ESS3-3	LS1-5 LS2-4 LS2-6 LS2-7 LS4-2 LS4-5 LS4-6 ESS2-7 ESS3-3 ESS3-4
<b>4.</b> Plankton, marine sediments, petroleum and the carbon cycle	Plankton and the carbon cycle; Origin and formation of crude oil; Greenhouse effect; Global Climate Change; Biogenous marine sediments; Environmental impacts of human activities; Biodiversity; Global climate feedbacks; Geoengineering; Co-evolution of life and earth systems; Global environmental problems	ESS2-1 ESS3-3 ESS3-4 ESS3-5	LS2-5 LS2-7 ESS2-2 ESS2-4 ESS2-6 ESS2-7 ESS3-1 ESS3-6 ETS1

LS = Life Sciences; ESS = Earth and Space Sciences; ETS = Engineering Design

\*The Next Generation Science Standards (NGSS) as presented by the National Research Council (<http://www.nextgenscience.org/>) that relate to each theme.

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12. Will you require financial assistance for a bus for this Wetland Tour?  YES  NO  
*Please note that funding is only for Title I schools and we can reimburse up to \$400 for one bus.*

12a. If you answered YES to 12, please attach a letter on school letterhead with information about Title 1 status and ethnic diversity of class (African-American \_\_\_\_%; American Indian/Alaskan Native \_\_\_\_%; Asian/Pacific Islander \_\_\_\_%; Caucasian \_\_\_\_%; Latino/Hispanic \_\_\_\_%; Other \_\_\_\_%). This information is optional, but it helps when applying for grants.

12b. If you answered YES to 12, please provide the contact information requested below. To ensure that we can provide reimbursement for the school bus and do so in a timely manner, we would like the name and contact information for the best person to work with to get an invoice so that we can process the reimbursement request as soon as possible. Because our funds for buses is limited, *if no invoice has been received by May 30 we cannot guarantee that we will be able to process the bus reimbursement.*

Name of contact for bus reimbursement: \_\_\_\_\_

Title: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

12c. I understand that if this field trip is approved for a funded bus:

- We will reserve and book our own bus for the Wetland Tour.
- In order to get reimbursed for the bus cost (up to \$400), the contact provided above will provide a receipt or invoice to Amigos de Bolsa Chica, P.O. Box 1563, Huntington Beach, CA 92647 OR [flow@amigosdebolsachica.org](mailto:flow@amigosdebolsachica.org) no later than May 30.

Signature of teacher or contract administrator: \_\_\_\_\_

*An Amigos de Bolsa Chica FLOW Field Trip is free, however, a donation of \$1.00 per person or \$25 minimum is much appreciated and needed to continue providing quality environmental education programs. Donations by check can be mailed to: Amigos de Bolsa Chica, P.O. Box 1563, Huntington Beach, CA 92647, or made online at <http://amigosdebolsachica.org/shop/#special-events-and-tours>*

If you have any questions about your FLOW Field Trip or this application, please email [flow@amigosdebolsachica.org](mailto:flow@amigosdebolsachica.org) or call 714-840-1575.

[www.amigosdebolsachica.org](http://www.amigosdebolsachica.org)