



GIRL SCOUTS OF NORTHERN CALIFORNIA

## IN THE MUD

A GS NORCAL COUNCIL'S OWN BADGE PROGRAM

### JUNIORS

TO ENCOURAGE AND INSPIRE GIRLS TO EXPLORE THE  
WORLD OF SAN FRANCISCO BAY.



### PURPOSE

What's so great about mud? Everything! San Francisco Bay's mud provides habitat, food and shelter for hundreds of species of plants and animals. Explore the mud, learn about the unique animals that call it home and find out why scientists are concerned with non-native species as you complete this badge.

### REQUIREMENTS

Complete 6 of the following activities.

All members of Girl Scouts of the USA are eligible to earn the In the Mud Badge.

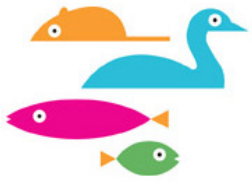
The In the Mud Badge is an official award and should be worn on the front of the vest or sash.

### ORDER INFORMATION

To order the In the Mud Badge please visit [www.girlscoutsnorcal.org](http://www.girlscoutsnorcal.org) and purchase the items online. Please note that shipping and handling will be added to all online orders.

Members of Girl Scouts of Northern California will not be charged for shipping and handling if they use the GS NorCal Council's Own Order Form and have badges shipped to the closest GS NorCal store in their area for members to pick up.

ORDER PATCHES ONLINE AT [WWW.GIRLSCOUTSNORCAL.ORG](http://WWW.GIRLSCOUTSNORCAL.ORG)  
FOR FURTHER INFORMATION ON PATCH PROGRAMS CONTACT [PATCHES@GIRLSCOUTSNORCAL.ORG](mailto:PATCHES@GIRLSCOUTSNORCAL.ORG)



# Girl Scouts Save the Bay

## IN THE MUD BADGE REQUIREMENTS FOR JUNIOR GIRL SCOUTS

Complete 6 of the following activities.

### 1. SCIENTIFIC TOOLS

Learn about a piece of scientific equipment that scientists use to study the bottom of a body of water, such as the San Francisco Bay. What does it do? How is it used?

### 2. SEDIMENT SAMPLING

Collect a sample of sediment from the Bay. What does it smell like? What does it feel like? What is it made out of?

### 3. DEPTHS OF THE BAY

Look at map or chart of the Bay. Determine where it is shallowest and where it is deepest. Make some educated guesses about why this is so.

### 4. GOLD RUSH

Find out what events in history have affected or altered the bottom of the Bay. Design a poster and present it to a friend showing what you have learned.

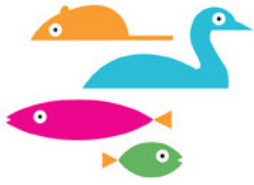
### 5. ANIMAL ADAPTATIONS

Observe an animal that lives at the bottom of the Bay. Describe to a friend how it moves, eats and defends itself. How is it specially adapted to live in or on the mud? Using craft supplies create an imaginary animal that could live at the bottom of the Bay. Describe to your friend what special adaptations your creature has.

### 6. CREATING CATEGORIES

List eight animals that live in the mud. Group them into categories and explain to a friend or your troop leader why you grouped them that way.

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# Girl Scouts Save the Bay

## IN THE MUD BADGE REQUIREMENTS FOR JUNIOR GIRL SCOUTS

### 7. BAY INVADERS

Many non-native animals have made their homes in the San Francisco Bay. Most of these are invertebrates. Find out what an invertebrate is and also what it means to be non-native. Then, identify 5 non-native invertebrates in the Bay. Locate where each originated from on a world map. Visit <http://www.exoticguide.org> for information on non-natives in San Francisco Bay. (You may also see the terms *invasive* or *exotic* used in place of *non-native*.)

### 8. HITCHHIKERS

How do non-native animals get into the Bay? Visit a dock or marina. Take a look at the side of a boat or a dock just under the water's edge. What do you see? Discuss with a friend or your troop what happens to these plants and animals if the boat travels to another country. What if the boat you are looking at came from somewhere else besides the San Francisco Bay?

### 9. BAY PLAY

Make up a skit about how non-native animals came to live in the Bay. Perform it for your parents, friends, or troop!

### 10. CREATE A GUIDE

A field guide is a special book that helps you identify species of plants or animals that you see in nature. Create a field guide for life at the bottom of the Bay. Share it with a friend or two!

### 11. MICROSCOPIC MARINE LIFE

Plankton are microscopic plants and animals that drift in the water. Using a plankton net that you borrow or make (find directions for making a plankton net at <http://www.biosci.ohiou.edu/faculty/currie/ocean/makeanet.htm>), collect a sample of plankton from the Bay. Observe your plankton with a microscope or magnifying lens. How might plankton relate to animals that are found at the bottom of the Bay?

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