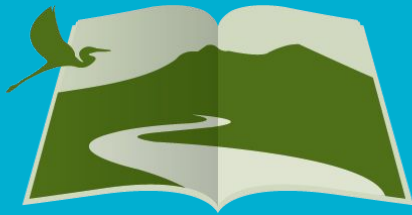


# Welcome to the Watershed Classroom

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Watershed Classroom

A program by...

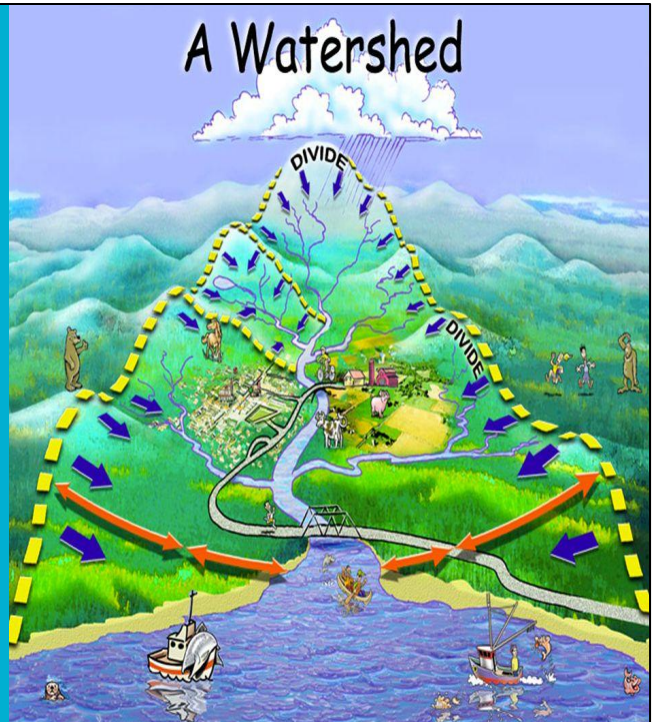


(5min) Introduce Friends of the Petaluma River and Watershed Classroom Program

1. Friends of the Petaluma
  - a. local non-profit that is 12 years old
  - b. mission is to Celebrate and Conserve the Petaluma River.
  - c. We strive to connect people of all ages to the River and its ...because what people love they will take care of.
  - d. Programs: Boating, Green Heron Nature Camp, River Cleanups
2. Watershed classroom
  - a. supports classes that want to learn about the Petaluma River
  - b. Elementary through high school
  - c. Last year there were 25 different classes in Petaluma
3. We are grateful to have you all as part of the program!

# What is a Watershed?

A watershed is an area of land where water drains or flows into a common point.



(3 minutes) What is a Watershed?

Hand activity

Students put hands together

Ask where water would fall

Explain that a watershed is a place where all water flows to the same place

Picture

What do you notice about this picture?

Shape of land determines where water flows



(1 minute) Everywhere you go you are in a watershed...

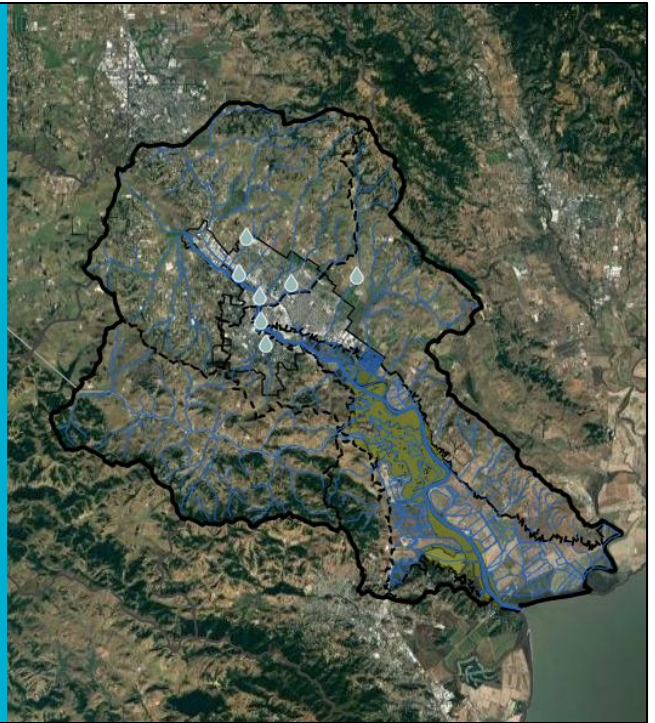
Hand Activity Part 2

Have students put their hands together

Say this is "Penny's" watershed this is "Sofia's" watershed

# Petaluma Watershed

- 146 square miles
- Includes 7 sub-watersheds
- highest point is 2,295 feet
- 11% is salt marsh
- includes all of Petaluma & parts of Penngrove & Novato



(2 min) Petaluma Watershed

What makes our watershed unique?

Go through facts on slide

Touch on fact that watersheds are made of smaller watersheds

Emphasise importance and rarity of salt marsh

# Petaluma River Tidal Slough

- The Petaluma River is technically a 13-mile tidal slough or estuary of the San Pablo Bay but it is called a river, thanks to an act of Congress
- Over 5,000 acres -surrounded by 7,000 acres of reclaimed wetlands
- The Single Largest and Least Disturbed example of Ancient Tidal Marsh land in California!
- Brackish water and tidal influence extends through and upstream of downtown Petaluma

(1min) Petaluma Tidal Slough

What does it mean to be a slough?

Tides

Brackish water (blend between salt and fresh water)

Brown color is because tides bring in mud from the ocean and changing directions of flow does not allow it to settle

# No Petaluma River, No Petaluma

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**6BC** First Inhabitants: Coast Miwok

**1776** Spanish Exploration

**1805** Spanish Soldiers Arrive

**1852** Steamboat Era

**1858** Petaluma Becomes City

**1860** Immigrant Labor Shapes the River

**1871** Railroad Arrives

**1880** D Street Bridge

**1918** Egg Basket of the World

**1938** Sewage Pollution Addressed

**1950** The Last Steamboat

**1956** Highway 101

**1959** Creek Becomes a River

**1995** Shollenberger Park Completed

**2009** Ellis Creek Water Recycling Facility Opens

**2017** SMART Train Begins Operating in Petaluma

[full timeline at watershedclassroom.org](http://watershedclassroom.org)

## (8min) Petaluma River History

### Timeline Activity

Divide into groups

Give each group a set of dates and events to match

Groups have 4 minutes to do this

Reveal the answers and line students up in the right order

### Talking points

Coast Miwok lived here more than 1800 years before Europeans arrived

Petaluma has been a city for 159 years, which means that the Coast Miwok were around for more than 1600

years longer than the city of Petaluma has existed

The City of Petaluma only exists because of river access and trade

# Who do we share this Watershed with?

The Petaluma Watershed is home to an abundance of different plants, animals, birds, insects, trees.

What wild creatures live near you?  
Have you seen them?



There are fiddler crabs, bat rays, great blue herons, red tailed hawks, deer, turkey, bobcat, monarch butterflies, steelhead trout, golden eagles, gray fox, jackrabbit, red sided garter snakes, river otters, blue belly lizards...

(5min)

List some of the animals students might be excited to know we share our watershed with (like otters!)

Ask students what animals they have seen (you may need to tell them they can only say the animal's name, no story)

# Stormwater Pollution

The Number One Threat to the  
Petaluma River

Also known as non-point source pollution

Happens when rainwater carries chemicals and debris to a body of water

To understand how stormwater flows through our waterways you first have to understand **WHAT IS A WATERSHED?**

(1min) Stormwater Pollution

Summary

River is important because of unique history

Wetlands

Biodiversity

There are a couple of things FOPR wants you all to know you can do to take care of your watershed

Stormwater Pollution and Understanding our sewer system

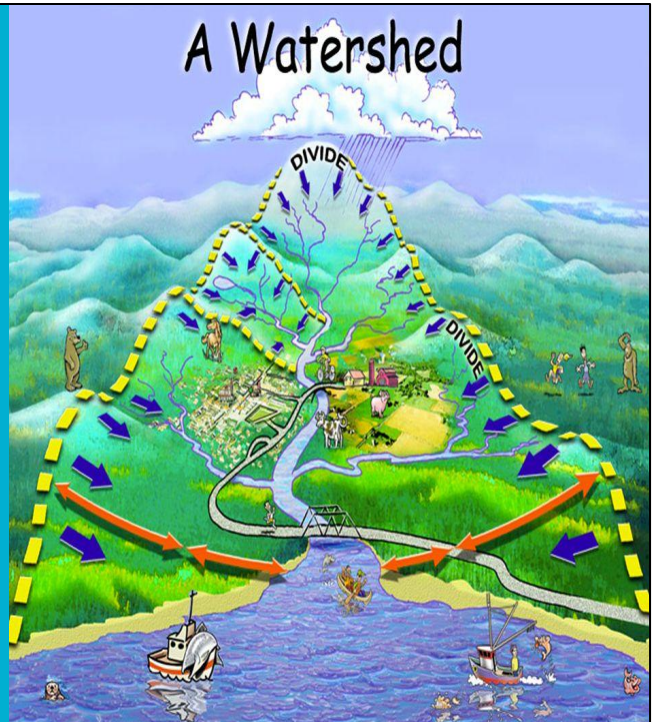
Stormwater Pollution

Go through info on slide



# Where Water Flows...

So do pollutants



(3 minutes) Hand activity

Discuss how the structure of our watershed means that pollutants are likely to make it into the Petaluma River when it rains.

# Stormwater Pollution

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- Oil/Gasoline
- Coolant
- Tire Rubber
- Cleaning Chemicals/Soaps
- Fertilizers
- Pesticides
- Dirt/Mud
- Roofing tar
- Animal Waste
- Human Waste
- Plant Matter/Yard Waste
- Litter

## (5 min) Stormwater Pollution Activity

### Activity

Divide into groups

Assign each group a place (neighborhood, school, farm [vegetable farm v ranch], factory, business, roads)

Have students brainstorm pollutants that could come from that place (2min)

Come up with an idea to keep one of those pollutants out of the river (1min)

Show students list, explain that it is not all of the pollutants

Have students share out ideas for pollution prevention

# Sewer Science

What happens when water disappears down the drain?



Where does it go?

(2min) Sewer Science  
How did you use water this morning?  
Where did it go?

# Ellis Creek Water Recycling Facility

This facility connects to the Petaluma River!

Image from IDA Structural Engineers

(1min)

All water that goes down drain or toilet goes to Ellis Creek Water Recycling Facility

200+ miles of pipeline

After treatment, drains to the Petaluma River

# What goes down the drain?

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## **Toilet:**

pee, poop, throw up & toilet paper

## **Sink:**

dish washing soap, hand soap, fruit juice

## **Shower:**

body wash, shampoo

## **Trash:**

meat grease, cooking oil, butter, food scraps, sauces, dairy, egg shells, coffee grinds, wet wipes, paper towels

## **Special Treatment:**

medicine, cleaning products, motor oil, paint

## Sewer science activity~

Explain: Some things are harder to clean out of water than others. We are going to play a game...

### Activity

Ask for 5 volunteers to come up to the front of the classroom and be the place holders for the Toilet, sink etc.

Pass out sheets of paper to the students with material names that go down the drain...

Alternative- have a basket with all of the sheets of paper and call students up one by one to participate.

Students sort the items by where they go

Reveal answers and resort items

# Welcome to the Watershed Classroom!

We can't wait to see all of the amazing work you'll do!



This is just the beginning of your exploration of the Petaluma Watershed.  
Thank you for being a part of the Watershed Classroom program.  
We can't wait to see your amazing work!