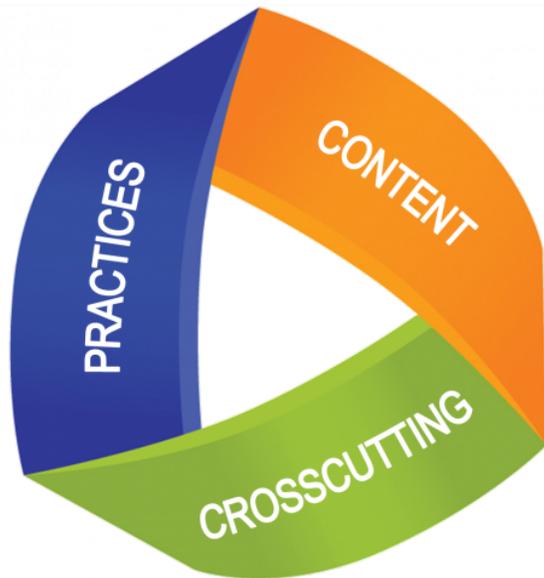


Date:

The eight practices of science and engineering that you will have covered by the end of the program:

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information



Date:

MARINE
SCIENCE
INSTITUTE



2017

Watershed Investigators

What is a Watershed?

Name: _____

Date:

Date:

What is a Watershed?

Define, draw, and label a watershed:

What is the name of your watershed?

Date:

Date:

Conclusion and Analysis

Write a paragraph about your findings:

What water quality test are you examining? Define the water test. Were there any changes in the water quality between locations? Why do you think it did or did not change?

Pollution

Define pollution:

Define point source pollution and list **3** examples :

Define non-point source pollution and list **3** examples:

Date:

Date:

The Scientific Method

The scientific method is a way to ask and answer questions by making observations and doing experiments.

Fill in the steps of the scientific method:

Q _____

R _____

H _____

E _____

P _____

D _____ C _____

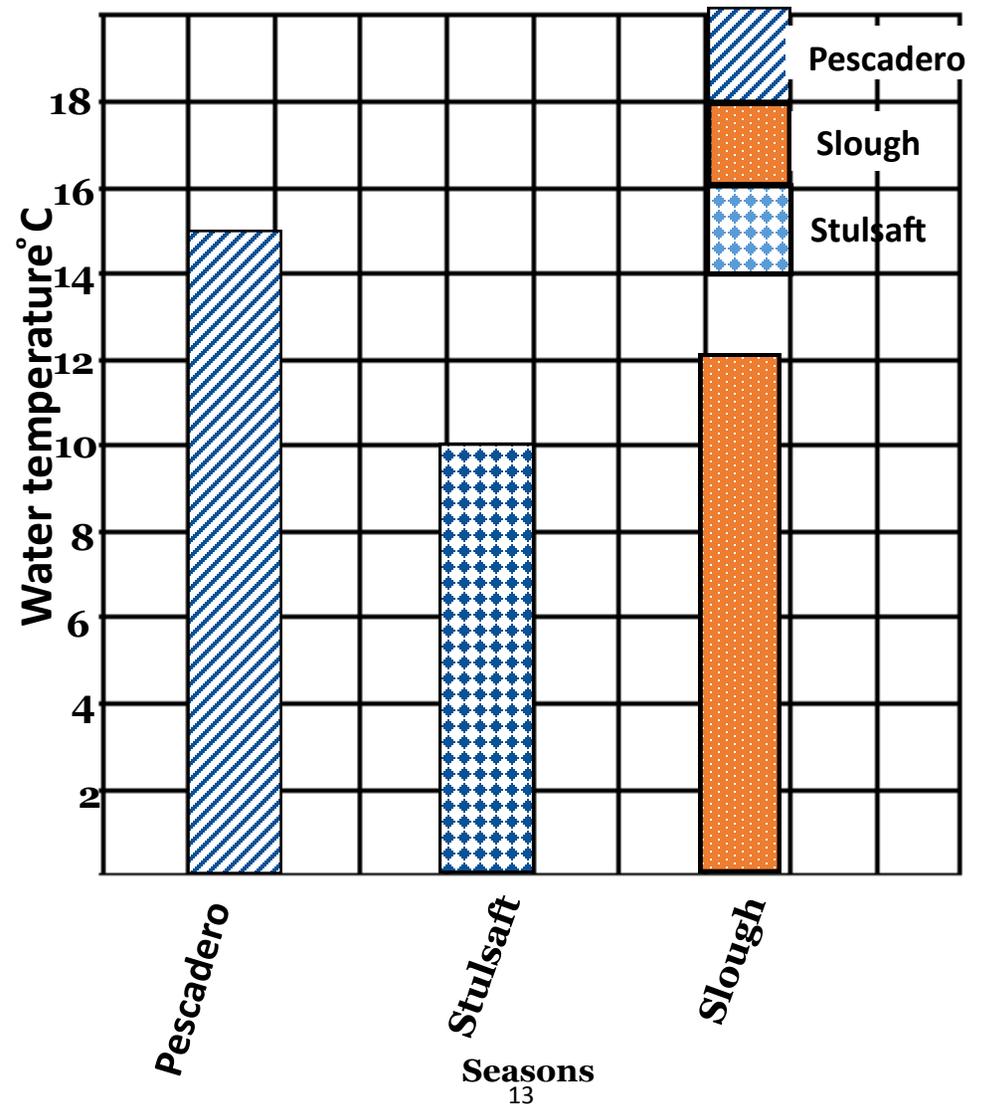
A _____ D _____

C _____

C _____ R _____

Water Quality Analysis

What type of graph is pictured below?



Date:

Date:

Canoes in Sloughs

What is a slough?

Tide (ebb or flood)	
Weather	
Air Temperature °C	
Water Temperature °C	
Density: mass/ volume=g/mL	
Salinity ppt	
Turbidity JTU	
Dissolved Oxygen ppm/% saturation	
Phosphate ppm	
pH	

What slough did you visit?

Water Quality Experiment

Question:

Hypothesis:

Date:

Local Stream Exploration Pescadero

Site Number and Time	
Weather	
Turbidity JTU	
Water Temperature °C	
Air Temperature °C	
Nitrate ppm Typical Range: 0.9-3.15 Unpolluted: <4	
Phosphate ppm Best: <0.05	
Dissolved Oxygen ppm/ % saturation Typical Range: 5.4-14.8 Aquatic growth: 5.0-6.0 Low: 0.1-5.0	
Velocity attempt (sec)	
Velocity attempt (sec)	
pH Typical range: 6.5-8.5	

What local stream did you visit?

Date:

Local Stream Trash Clean-up Winter

List the items of trash that you find in the left part of the chart. Put a tally mark for each of the same type of items that you find in the middle and total them up in the right.

Item	Tally Marks	Total
Total		

Date:

Local Stream Exploration Analysis

Did you have any nitrate tests that were high?

Circle one

Yes

No

Did you have any phosphate tests that were high?

Circle one

Yes

No

If you said yes, can you think of a reason why there might be high Nitrates or Phosphates in our creek?

If the water temperature is decreasing, is the amount of dissolved oxygen the water can hold increased or decreased?

Circle one

Increase

Decrease

When we measured turbidity are we measuring the clearness of the water or the color of the water? **Circle one**

Clearness

Color

Climate change can change the quality of the water over time.

Circle one

True

False

Look back on page 6 . Is there a difference in your data? **Circle one**

Yes

No

If yes explain why.

Date:

Local Stream Exploration Analysis

Did you have any nitrate tests that were high?

Circle one

Yes

No

Did you have any phosphate tests that were high?

Circle one

Yes

No

If you said yes, can you think of a reason why there might be high Nitrates or Phosphates in our creek?

If the water temperature is increasing, is the dissolved oxygen increased or decreased? **Circle one**

Increase

Decrease

When we measured turbidity are we measuring the clearness of the water or the color of the water? **Circle one**

Clearness

Color

Climate change will affect our watershed and change the results we saw today. **Circle one**

True

False

Can you reduce your carbon footprint to protect the Watershed? **Circle one**

Yes

No

What can you do to protect your watershed?

