

## River Health Assessment – Nature’s Classroom Field Study

**Essential Question:** What can I learn about the health of the Hillsborough River at Nature’s Classroom?

**Objective:** I will use the information collected at Shoreline Sampling and calculate the mean, median, and interquartile range on each category (very sensitive, sensitive and tolerant) as well as the total specimen collection.

**Standard(s):**

MAFS.6.SP.2.5

Summarize numerical data sets in relation to their context by:

- a. Reporting the number of observations
- b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement,
- c. Giving quantitative measures of center (median and/ or mean) and variability (interquartile range and/ or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

**Lesson Duration:** 50 minutes/1 class period

**Set-up:**

- Students must know ahead of time that the Shoreline Sampling Data Sheet WILL BE COLLECTED
- **Collect** the Shoreline Sampling Data sheet from students upon return to school

**Materials:**

- Student page: **Aquatic Invertebrate Survey Data** form – One per team
- Nature’s Classroom shoreline historical data (provided by NC through IDEAS ► Departments ► Middle School ► Nature’s Classroom ► 6<sup>th</sup> Grade Field Study)

**Directions:**

1. Complete the Nature’s Classroom **Aquatic Invertebrate Survey Data** Sheet
2. Calculate mean, median, interquartile range, and describe overall pattern on each of the categories (very sensitive, sensitive, tolerant) AND the total specimen collection (from column #2)
3. Compare data to “historical data” for similar time of year.
4. Discuss the following:  
Compare your data to the historical Nature’s Classroom Data. Are your results similar to what should have been collected? Why or Why not? Are there measures of center and variability in the data distribution of the historical Nature’s Classroom Data?

### Aquatic Invertebrate Survey Data

**Directions:**

1. Insert the invertebrate data from your collection sheets onto this form.
2. Calculate mean, median, interquartile range, mean absolute deviation, and describe overall pattern on each of the categories (very sensitive, sensitive, tolerant) AND the total specimen collection.
3. Calculate the Water Quality Rating.

Very Sensitive	#	Sensitive	#	Tolerant	#	Very Tolerant	#	Total Specimens
May Flies		Dragon Flies		Leeches		Mosquitoes		
Dobson Flies		Damsel Flies		Beetles & Larva		Blood Worms		
Fish Flies		Shrimp		Snails		Spiders		
		Mussels						
		Clams						
		Crayfish						
		Scuds						
		True Bugs						
<b>Totals</b>								=
Mean								
Median								
Interquartile Range								
Mean Absolute Deviation								
Describe Overall Pattern								
Water Quality Weighting	<b>3</b>		<b>2</b>		<b>1</b>		<b>0</b>	
Water Quality Index Value – Multiply the number of types of invertebrates found in each column by the weighting Number								

**The Water Quality Rating** = the total of the Water Quality Index Values from each column.

**WQR** = \_\_\_\_\_ Excellent (>22) Good (17-22) Fair (11-16) Poor (<11)