Name_____

Fish Fitness Worksheet

Flinn STEM Design Challenge™

Data

Draw and label the original design of the fish you tested.

Data Table

Original Fish Design				
Trials	**Distance (cm)**	**Time (s)**	**Speed (cm/s)**	**Observations—include possible improvements for this design**
1				
2				
3				
Average				

$$\text{Speed} = \frac{\text{distance (cm)}}{\text{time (s)}} \qquad \text{Average speed} = \frac{(\text{trial 1 + trial 2 + trial 3})}{3}$$

Data

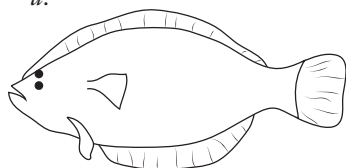Draw and label the improved design of the fish you tested. Point out features that have been altered.

Improved Fish Design				
Trials	**Distance (cm)**	**Time (s)**	**Speed (cm/s)**	**Observations—include possible improvements for this design**
1				
2				
3				
Average				

Post-Lab Questions

1. Describe the reasoning behind your original design. What features were included to make it have the fastest speed?

2. Compare your data with other groups. Based on the data, would evidence support or refute the claim that "Your original fish design displayed high fitness"? Explain the reasoning for your answer.

3. Describe an environment where nature would select for your fish body shape.

4. Describe an environment where nature would select against your fish body shape.

5. Describe changes made to the original design in order to improve the speed of the fish. Using evidence, explain whether you were successful or unsuccessful.

6. Describe any limitations present in your data (discuss possible sources of error).

7. List the similarities and differences, focusing on the structures and functions, between a real fish and your model.

8. Look at the following fish and body shapes. What would be their evolutionary advantage as a predator?

a.
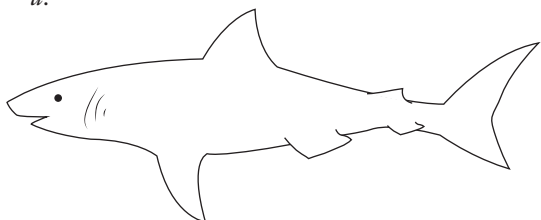
b.
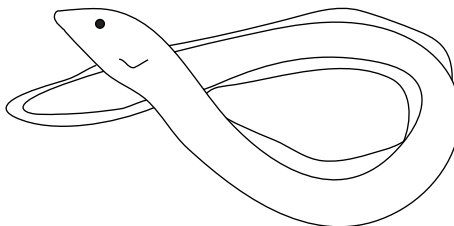
c.
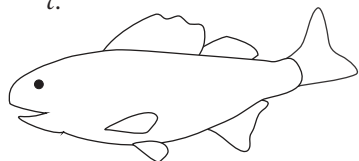
9. Look at the following fish and body shapes. What would be their evolutionary advantage as a prey species?

a.

b.