327 Week 2 Lab: Fish Diversity

# Station 1: Pre-Vertebrates

1. Name two examples of fossil forms that serve as early models of prevertebrates

|  |
| --- |
|  |

2. What characteristic(s) are missing that suggest that these are still transitional forms, but not quite Vertebrata yet?

|  |
| --- |
|  |

# Station 2: Agnathans

1. Name four characteristics that characterize vertebrates, distinguishing them from other animals.

|  |
| --- |
|  |

2. What does Agnathan mean?

|  |
| --- |
|  |

3. Which fossil forms are considered the earliest vertebrates and what are some of their characteristics?

|  |
| --- |
|  |

4. Why is it becoming difficult to classify the beginning of the subphylum Vertebrata?

|  |
| --- |
|  |

5. What distinguishes hagfish from all other vertebrates?

|  |
| --- |
|  |

6. How do lamprey make their living?  Are they found locally?

|  |
| --- |
|  |

7. Examine the lamprey cross sections and skeleton and identify chordate characteristics and gill arches.

|  |
| --- |
|  |

8. See if you can get an idea of the form of the vertebrae in the lamprey.

|  |
| --- |
|  |

# Station 3: Placodermi and Acanthodii

1. What Does Gnathostomes mean?

|  |
| --- |
|  |

2. Are the two fossil groups here thought to be closely related?

|  |
| --- |
|  |

3. What characterizes the Placoderms (as determined from their name)?

|  |
| --- |
|  |

4. What were Placoderm teeth like?

|  |
| --- |
|  |

5. How do the Acanthodii play a role perhaps helping us understand how paired fins came about?

|  |
| --- |
|  |

# Station 4: Chondrichthyes

1. What major characteristic typically distinguishes the Chondrichthyes as a group from other Gnathostomes?

|  |
| --- |
|  |

2. What is the common name for the Holocephali and how might you remember (by looking at it) where it falls in a phylogeny of fishes?

|  |
| --- |
|  |

3. What are the two major groups of Elasmobranchs, and which are recognized as the “classic” sharks?

|  |
| --- |
|  |

4.  What is the difference between a skate and a ray?

|  |
| --- |
|  |

5. What are four characteristics of a bottom dwelling Chondrichthian?

|  |
| --- |
|  |

6. On the shark skeleton, identify the Meckel’s Cartilage, Hyomandibula, Gill Arches, and Palatoquadrate.

|  |
| --- |
|  |

# Station 5: Actinopterygii I

1. What is the common name for the Actinopteryigii?

|  |
| --- |
|  |

2. Which groups form the palaeoniscoid fishes?

|  |
| --- |
|  |

3. How would you distinguish a sturgeon by looking at it?

|  |
| --- |
|  |

4. Name three major lineages within the Neopterygian fishes.

|  |
| --- |
|  |

# Station 6: Actinopterygii II (Teleostei)

1. What do we call the group of Teleosts that contain about 94% of teleost species?

|  |
| --- |
|  |

2. Which group is the largest in terms of species?

|  |
| --- |
|  |

3. Name four major groups of Teleost Fishes

|  |
| --- |
|  |

4. What the Osteoglossomorphs known for?

|  |
| --- |
|  |

5. In most cases how can one identify an Elopomorph?

|  |
| --- |
|  |

6. What behavioral characteristic is typical of Clupeomorphs?

|  |
| --- |
|  |

7. What are Weberian ossicles and which group of Euteleosts have them?

|  |
| --- |
|  |

8. What do anadromous fishes do?

|  |
| --- |
|  |

# Station 7: Sarcopterygii

1. What does the term Osteichthyes mean?

|  |
| --- |
|  |

2. What are the two major groups within Osteichthyes?

|  |
| --- |
|  |

3. What typically characterizes the Sarcopterygian fishes from other fishes?

|  |
| --- |
|  |

4. Which group of Sarcopterygians are freshwater fish and which are marine bottom dwellers?

|  |
| --- |
|  |

5. Which of these is the direct ancestor to tetrapods?

|  |
| --- |
|  |

6. Although Bichers, upon close examination, retain the features of a primitive Actinopterygian, why have some confused them with Sarcopterygians?

|  |
| --- |
|  |