

Creating Cladograms

Based on the ENSI/SENSI Lesson “Making Cladograms”

Objective: You will be given a group of organisms and their distinguishing characteristics. Using this information, construct a cladogram. Using your cladogram, you should be able to interpret the evolutionary relationships of members of the group.

Procedure:

Step 1:

Complete the data table on the following page. For each animal, place an X in the box if the animal has the specified characteristic. To do so, use the explanations below and any additional resources (your textbook, the internet) to determine which characters each animal in the table below has.

Explanations of Characters:

Dorsal nerve cord: a nerve cord running along the back or dorsal body surface

Notochord: A flexible but supporting cartilage-like rod running along the back or dorsal surface

Paired appendages: legs, arms, wings, fins, flippers, antennae

Vertebral column: backbone

Paired legs

Amnion: a membrane that holds amniotic fluid surrounding the embryo; may or may not be inside an eggshell

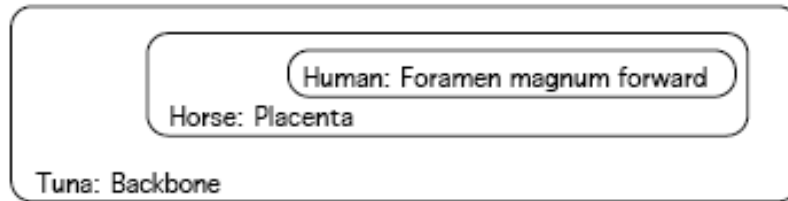
Mammary glands: milk-secreting glands that nourish the young

Placenta: structure attached to the inside of uterus of mother, and joined to the embryo by the umbilical cord; provides nourishment and oxygen to the embryo

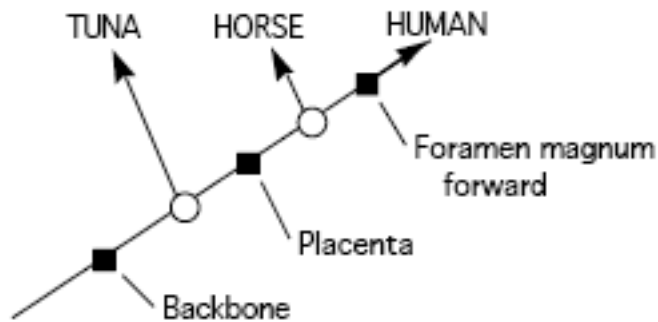
Canine teeth short: canine teeth same length as other teeth

Foramen magnum forward: spinal cord opening located forward, under skull

Step 2: Below the data table on your worksheet, make a Venn diagram, placing your seven animals in groups to illustrate those characteristics which different animals have in common. See the following example:



Step 3: Using the Venn diagram of the groupings just completed (as a guide), draw a cladogram on the back of your worksheet to illustrate the ancestry of these animals. The diagram should reflect shared characteristics as time proceeds. An example is shown below.



Summary: On the back of your worksheet, explain two types of information that can be obtained from your cladogram.

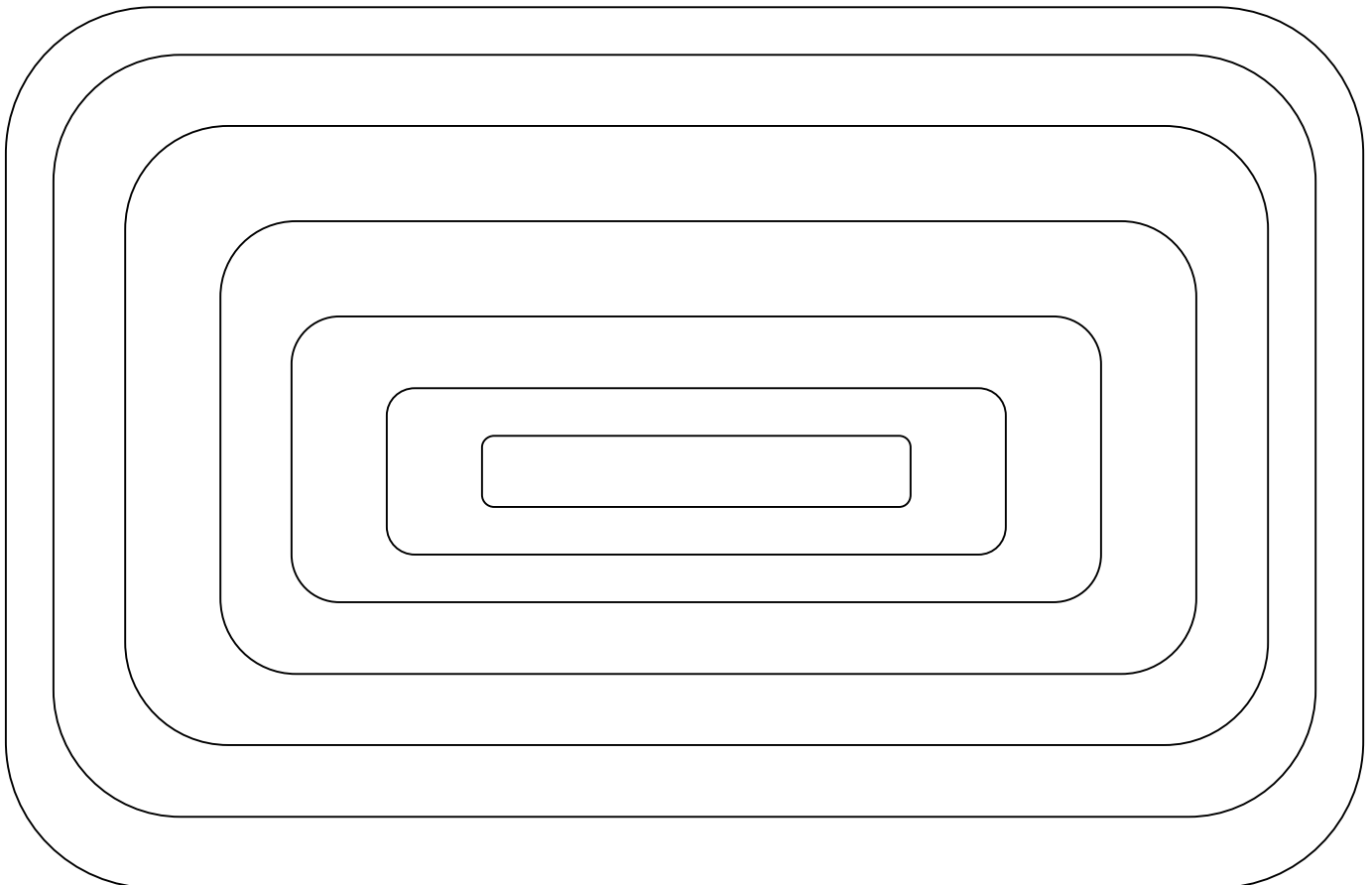
Name _____

Creating Cladograms Worksheet

1. Data Table

Traits	Rock Wallaby	Tunicate	Hawaiian Hoary Bat	Coqui Frog	Human	Green Sea Turtle	Yellowfin Tuna
Dorsal Nerve Cord Notochord							
Paired Appendages Vertebral Column							
Paired legs							
Amnion (amniotic sac)							
Mammary glands							
Placenta							
Canine teeth short Foramen magnum forward							
Total # of traits:							

2. Draw your Venn diagram here.



3. Draw your cladogram here.



4. What are two types of information shown by your cladogram:

1.

2.