# Classification Review

<table>
<thead>
<tr>
<th>Organism</th>
<th>House Cat</th>
<th>Red Fox</th>
<th>Dog</th>
<th>Wolf</th>
<th>Gopher</th>
<th>Fly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kingdom</td>
<td>Animalia</td>
<td>Animalia</td>
<td>Animalia</td>
<td>Animalia</td>
<td>Animalia</td>
<td>Animalia</td>
</tr>
<tr>
<td>Phylum</td>
<td>Chordata</td>
<td>Chordata</td>
<td>Chordata</td>
<td>Chordata</td>
<td>Chordata</td>
<td>Arthropoda</td>
</tr>
<tr>
<td>Class</td>
<td>Mammalia</td>
<td>Mammalia</td>
<td>Mammalia</td>
<td>Mammalia</td>
<td>Mammalia</td>
<td>Insecta</td>
</tr>
<tr>
<td>Order</td>
<td>Carnivora</td>
<td>Carnivora</td>
<td>Carnivora</td>
<td>Carnivora</td>
<td>Rodentia</td>
<td>Diptera</td>
</tr>
<tr>
<td>Family</td>
<td>Felidae</td>
<td>Canidae</td>
<td>Canidae</td>
<td>Canidae</td>
<td>Geomyidae</td>
<td>Muscidae</td>
</tr>
<tr>
<td>Genus</td>
<td>Felis</td>
<td>Vulpes</td>
<td>Canis</td>
<td>Canis</td>
<td>Thomomys</td>
<td>Musca</td>
</tr>
<tr>
<td>Species</td>
<td>domesticus</td>
<td>fulva</td>
<td>familiaris</td>
<td>lupus</td>
<td>bottae</td>
<td>domestica</td>
</tr>
</tbody>
</table>

Use the table above and answer the following questions in the space below.

1. Which of the organisms above are most closely related? Explain. __________
   Dog and wolf because they are the same all the way down to genus

2. Which of the organisms above are least closely related? Explain. __________
   The fly to anything else, it starts being different at the phylum level

3. What does binomial nomenclature mean? __________
   2 names (Genus species)

4. Given an example of binomial nomenclature using the table? __________
   Canis lupus

5. Who developed the binomial nomenclature system? __________
   Linnaeus

6. What is the scientific name for humans? __________
   Homo sapiens

7. What is the scientific name for a house cat? __________
   Felis domesticus

8. What is the scientific name for a wolf? __________
   Canis lupus

9. Vulpes fulva belongs to which family? __________
   Canidae

10. Canis familiaris belongs to what order? __________
    Carnivora

11. All of the organisms are part of what domain? __________
    Eukarya

12. Name another organism that might be in the order, Rodentia? __________
    Rat

13. What does Canivora mean? __________
    Meat eating

14. What does Mammalia mean? __________
    Fur and mammary glands

15. What does Chordata mean? __________
    Spinal chord
16. Which level/group of our classification system is the broadest and contains the most organisms? **Kingdom**

17. Which level/group of our classification system is the most specific and contains the least organisms? **species**

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1. What type of diagram is seen above? **cladogram**

2. According to the diagram, what trait do all the organisms have? **vertebrae**

3. What trait separates ray-finned fish and amphibians? **Four legs**

4. What trait do primates have that crocodiles do not have? **hair**

5. What trait do primates, rodents, rabbits, crocodiles, dinosaurs, and birds all have that the other organisms do not have? **Amniotic egg**

6. Did birds share a more recent ancestor with rabbits or sharks? **rabbits**

7. Who is the most recent probable ancestor of primates? **by primates**

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The tree of life

1. List the three domains. Below them list the kingdoms they belong to each domain.

   D____Bacteria________  D____Archaea______________  D__Eukarya__________

   K___Eubacteria______  K___Archaeabacteria______  K__Protists____________

   K____Fungi____________

   K____Plantae____________

   K________Animalia______
2. Think back to the zebra activity. What information is useful in determining if organisms are part of the same species?

   Physical traits, biogeography, breeding with other organisms, DNA analysis

3. What are derived characteristics?

   A trait passed along to a descendent

4. How are they used in classification? (what can you build with them and what does this tell you?)

   They show relatedness and build a cladogram

Use the derived characters chart below to create a cladogram.

<table>
<thead>
<tr>
<th>Derived characteristics</th>
<th>Organisms</th>
<th>Vascular tissue</th>
<th>Seeds</th>
<th>flowers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mosses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pine trees</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flowering plants</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>ferns</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Using a dichotomous key

Identify organism # 10

1. a. The creature has a large wide head..........................................go to 2
   b. The creature has a small narrow head.................................go to 11
2. a. It has 3 eyes ..............................................................................go to 3
   b. It has 2 eyes ..............................................................................go to 7
3. a. There is a star in the middle of its chest.................................go to 4
   b. There is no star in the middle of its chest .............................go to 6
4. a. The creature has hair spikes ...........................................Broadus hairus
   b. The creature has no hair spikes.............................................go to 5
5. a. The bottom of the creature is arch-shaped ..................Broadus archus
   b. The bottom of the creature is M-shaped ........................Broadus emmus
6. a. The creature has an arch-shaped bottom ................Broadus plainus
   b. The creature has an M-shaped bottom .........................Broadus tritops
7. a. The creature has hairy spikes ...................................................go to 8
   b. The creature has no spikes..................................................go to 10
8. a. There is a star in the middle of its body .......................Broadus hairystarus
   b. The is no star in the middle of its body .................................go to 9
9. a. The creature has an arch shaped bottom ........Broadus hairyemmus
   b. The creature has an M shaped bottom ......................Broadus kiferus
10. a. The body is symmetrical ......................................Broadus walter
    b. The body is not symmetrical.................................Broadus anderson