

Owl Pellet Lab

Materials:

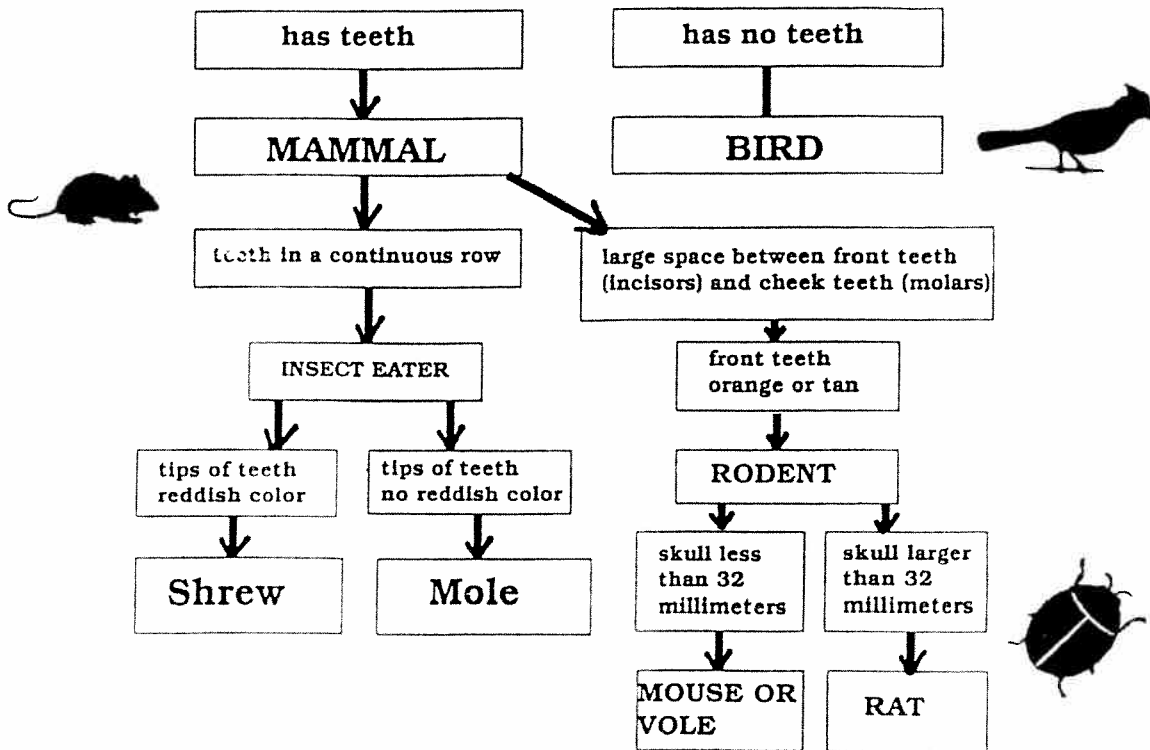
- owl pellet
- white paper
- dissection tools
- exhibit of mammal skulls and skeletons
- Key to: Mammal Skulls Found in Pellets Collected in Western Washington

Procedures:













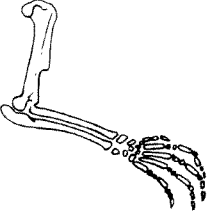
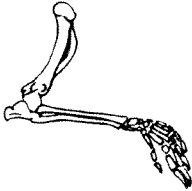
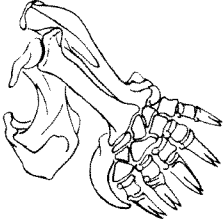

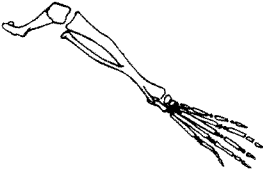
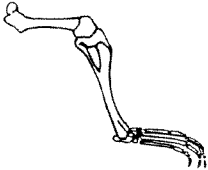
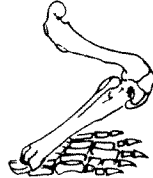
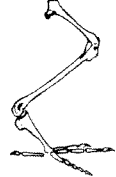
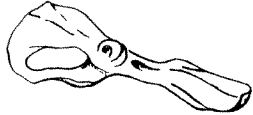






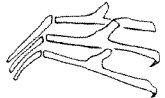
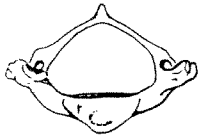

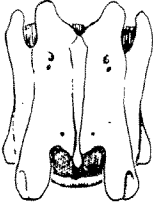
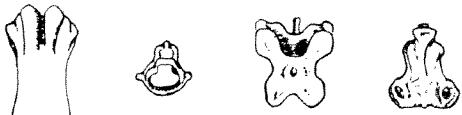
1. Place a pellet on a sheet of white paper.
2. Using dissecting needles and forceps, separate the bones of the animals from the fur and/or feathers.
3. Clean the bones of debris and sort them according to type (e.g. skulls, vertebrae, etc.). Clean the skulls as thoroughly as possible since these are the best bones for identifying the prey.
4. Use the skull identify key to identify prey.
5. Record the kinds and numbers of prey you find in your pellet on your data sheet (attached) and on a chart on the chalkboard. After the class record is complete, copy the class data onto your record sheet
6. Answer the questions on the data sheet about what is in your owl pellet.
7. Identify some of the larger bones from your pellets by referring to the poster drawing of the skeleton of *Microtus*. Compare the *Microtus* bones from your pellet with homologous bones of another species of mammal found in other owl pellets. You might also wish to compare bones from the pellets with bones of the human skeleton.

Skull Identification Key

Identify the prey consumed by examining the skulls found in your pellet. First, determine if the skull has teeth. If there are no teeth, then it is a bird skull. If the skull has teeth, then read the statements on the key to determine which is more correct. Follow the arrows to the answer.



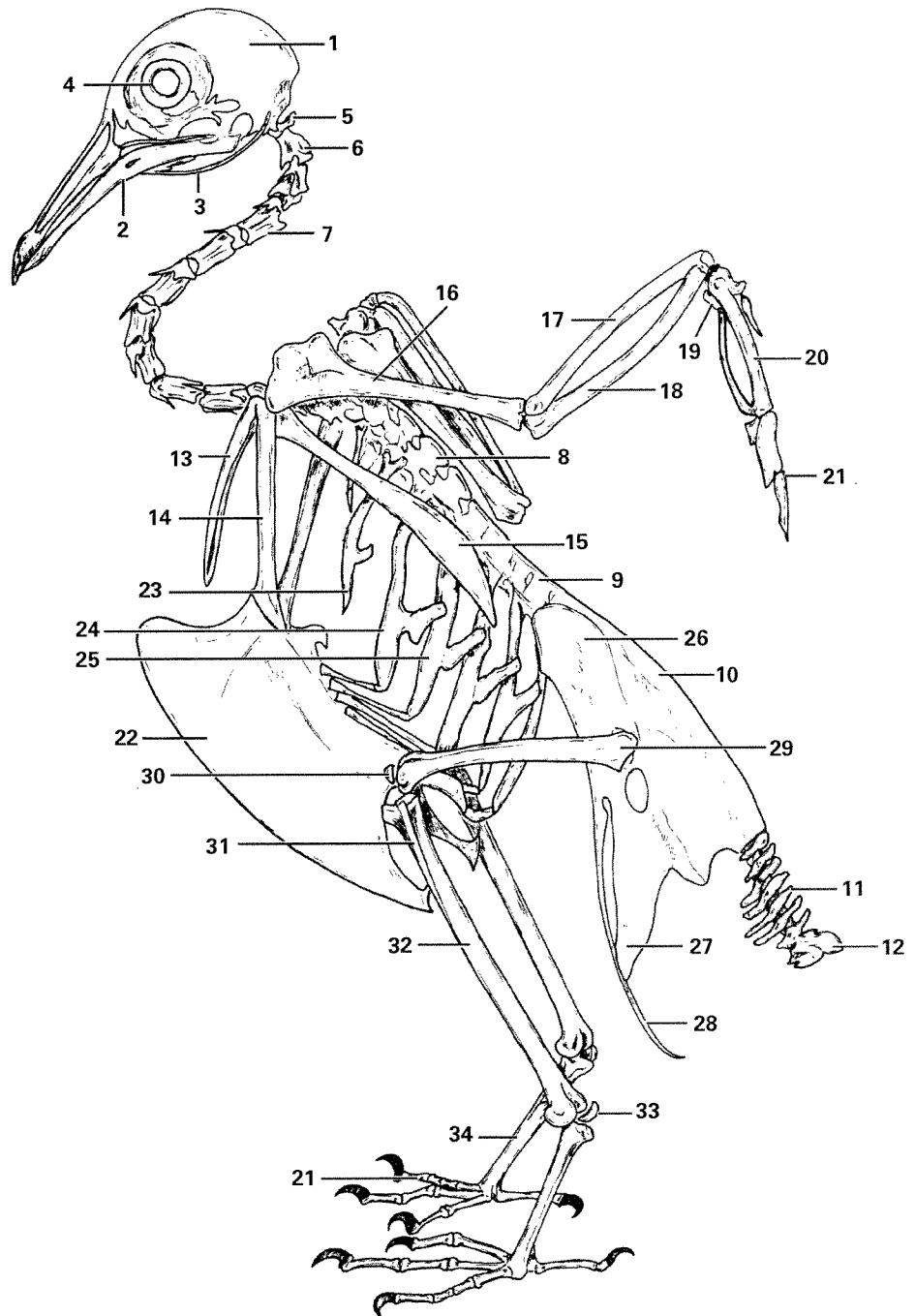
Owl Pellet Bone Chart

	Rodent	Shrew	Mole	Bird
Skull				
Jaw				
Scapula				
Forelimb				
Hindlimb				
Pelvic Bone				
Rib				
Vertebrae				

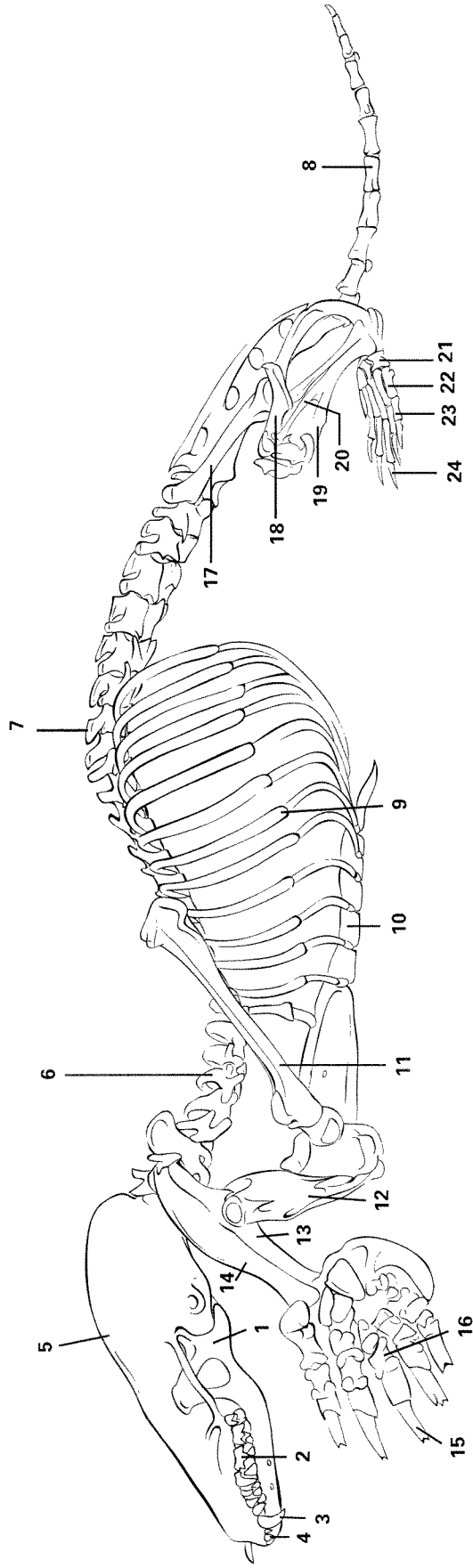
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Bird Skeleton

1. Skull
2. Mandible
3. Hyoid
4. Eye bone
5. Atlas
6. Axis
7. Cervical vertebra (15)
8. Thoracic vertebra (5)
9. Lumbar vertebra (6)
10. Synsacrum
11. Caudal vertebra (15)
12. Pygostyle
13. Clavicle
14. Coracoid
15. Scapula
16. Humerus
17. Radius
18. Ulna
19. Carpus
20. Carpometacarpus
21. Phalanges
22. Sternum
23. Cervical ribs
24. Thoracic ribs
25. Uncinate process
26. Ilium
27. Ischium
28. Pubis
29. Femur
30. Patella
31. Fibula
32. Tibiotarsus
33. Sesamoid
34. Tarsometatarsus



Mole Skeleton

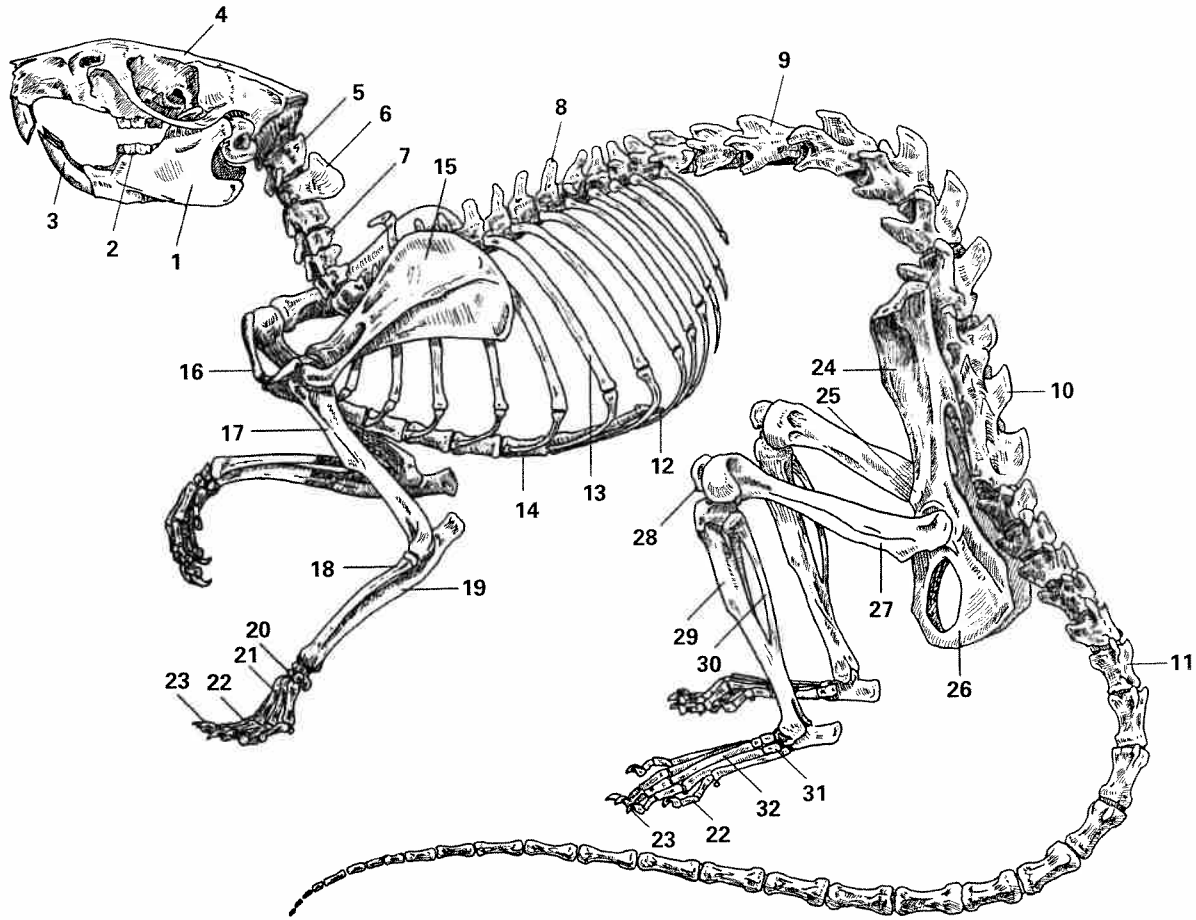


1. Mandible
2. Molar
3. Canine
4. Incisor
5. Skull
6. Cervical vertebra
7. Lumbar vertebra
8. Caudal vertebra

9. Ribs (13)
10. Sternum
11. Scapula
12. Humerus
13. Radius
14. Ulna
15. Claw
16. Phalanges

17. Pelvic bone
18. Femur
19. Tibia
20. Fibula
21. Tarsus
22. Metatarsus
23. Phalanges
24. Claw

Rat Skeleton



- | | |
|-----------------------------|-----------------|
| 1. Mandible | 17. Humerus |
| 2. Molar | 18. Radius |
| 3. Incisor | 19. Ulna |
| 4. Skull | 20. Carpals |
| 5. Atlas | 21. Metacarpals |
| 6. Axis | 22. Phalanges |
| 7. Cervical vertebra (7) | 23. Claw |
| 8. Thoracic vertebra (13) | 24. Ilium |
| 9. Lumbar vertebra (6) | 25. Pubis |
| 10. Sacrum (3) | 26. Ischium |
| 11. Caudal vertebra (28–30) | 27. Femur |
| 12. Xiphoid process | 28. Patella |
| 13. Rib (13) | 29. Tibia |
| 14. Sternum | 30. Fibula |
| 15. Scapula | 31. Tarsus |
| 16. Clavicle | 32. Metatarsus |

Name(s) _____ Class period _____ Date _____

Animal Identification from Owl Pellet DATA SHEET

Individual data

1. Number of skulls (or pairs of jaw bones) found in your owl pellet: _____

2. Species and number of prey animals found in your pellet: _____

Species	Number of Individuals

Class Data

Total number of pellets examined	
Average number of prey animals per pellet	

Prey Animals	Number	Prey Animals	Number
Bird		<i>Sorex bendiri</i> (Bendire Shrew)	
<i>Rattus</i> sp (rat)		<i>Neurotrichus gibbsi</i> (Shrew mole)	
<i>Microtus townsendi</i> (townsend vole)		<i>Scapanus townsendi</i> (Townsend mole)	
<i>Microtus oregoni</i> (Creeping vole)		<i>Scapanus orarius</i> (Coast mole)	
<i>Peromyscus maniculatus</i> (Deer mouse)			
<i>Mus mueoulus</i> (House mouse)			
<i>Sorex vagrane</i> (Wandering Shrew)			

Name _____

Date _____

Extension Questions Owl Pellet Lab

1. What size is your owl pellet? Length _____ Width _____

2. How many skulls were in your pellet? _____

3. How many other kinds of bones did you find?

Ribs _____ Jaws _____ Pelvis _____ Scapula _____ Humerus _____

Vertebrae _____ Other _____

4. Did you find a complete skeleton?

List three reasons you did not find a whole skeleton.

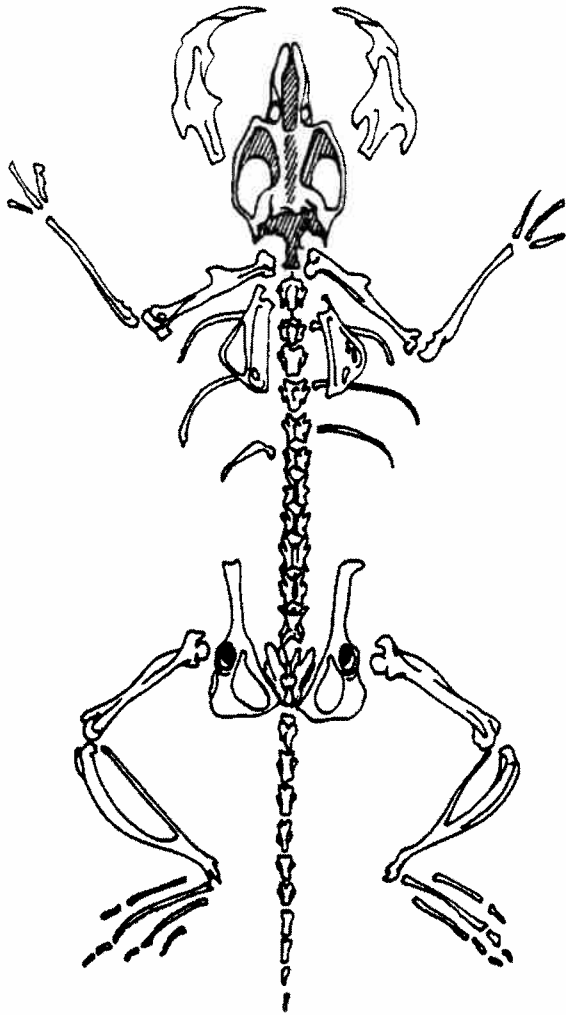
5. What was the diet of the animals whose skulls you found in the pellet? Did you find any evidence of this? _____

6. Where does this prey animal live? Describe its habitat. _____

7. Assume that an owl forms one pellet each day. How many animals would an owl eat? In a week? _____ in a month _____ in a year _____

8. What can you say about the mammal population in the area where your pellet was found? Is your answer a good guess, or would you need more pellets to be sure? Why? _____

9. Why do you think farmers and ranchers want owls in their barn?



1. Examine the bones that have been separated from fur, feathers, and other debris and grouped according to type.

2. Lay bones out corresponding to their position in the natural skeleton (as shown in this diagram).

3. Make a drawing of your skeleton(s).

4. Label each bone type. Below drawing, label common and species name.

Bones of animals, other than voles, will usually show differences in size and shape. For instance, the same bone, like the shoulder blade, will appear similar in mice, shrews and weasels. Bones of a skeleton may be laid out flat on a piece of cardboard (in this position the bones can be glued to the cardboard and hung as a picture)

Extra Credit: 1. Bones of a skeleton may be laid out flat on a piece of cardboard. In this position the bones can be glued to the cardboard and hung as a picture. (include common name and scientific name)