

Chapter 3

Animals with a Backbone

A. Fish

1. Cold-blooded vertebrate - body temperature changes with temperature around it.
2. Three types of fish: Bony, jawless, cartilaginous
3. Most fish have skeletons of bone.
4. Sharks and stingrays are cartilaginous fish.
5. Cartilage - a soft, bonelike material that bends
6. Most fish covered with scales (flat, bony structures used to protect them).
7. Fin - structure on a fish that helps it move through the water
8. Some oxygen is dissolved in water.
9. Fish use gills to take the oxygen from the water.
10. Gills - thin, feathery, structures filled with blood
11. Oxygen from water passes over. Water and carbon dioxide passed back out.
12. Fish are found in fresh and salt water, and also in many shapes, sizes, and colors.
13. Most fish reproduce using external fertilization.
14. Fish are a major food source. There is an average of 145.2 billion lbs caught per year.
15. Scientists that study fish called ichthyologist

B. Amphibians

1. Cold-blooded vertebrate that lives part of life on land and part in water.
2. Common amphibians - frogs, toads, salamanders
3. Outside of amphibians' bodies are usually moist and slimy.
4. Amphibians don't have scales.
5. Most adult amphibians live on land, returning to the water to lay eggs.
6. Some spend almost entire life in water. - bullfrogs, some salamanders (mud puppies)
7. Most adult amphibians breathe through lungs.
8. Lungs are organs that get oxygen from air.
9. Amphibians can also get oxygen through skin.
10. Hibernation is the slowing down of life activities during cold weather.
11. Estivation is the slowing down of life activities during warm weather.
12. Herpetologist - scientists who study reptiles and amphibians.

C. Reptiles

1. Cold blooded vertebrates with lungs and dry skin.
2. Almost all reptiles have scales.
3. Most live on land and lay eggs. (Some give birth to live young.)
4. Four groups of reptiles:
 1. Alligators & Crocodiles
 2. Snakes
 3. Lizards
 4. Turtles
5. **Alligators and crocodiles** belong to a family of reptiles called crocodylians.
6. *Alligator* - wide head with short, blunt snout
Crocodile - triangular shaped head with long, narrow snout

7. **Snakes** - largest groups of reptiles
8. Come in all shapes with no legs and covered with scales.
9. Anaconda - 29.7 feet long
Thread Snake - 4.8 inches long
10. Snakes swallow food whole, head first
11. Their jaws are very flexible - open wide and stretch
12. **Lizards** - many live in hot, dry areas
13. Generally have claws on toes that are covered with scales.
14. **Turtles** - some live on land, others in water

D. Birds

1. Warm-blooded animals covered with feathers.
2. Warm-blooded animal - animal whose body temperature stays the same regardless of its surroundings
3. Vertebrates with lungs and lay eggs.
4. Most have wings used to fly.
5. Live in trees, on land, or on water.
6. Bird bones are hollow and light to help with flying.
7. Feathers have hollow central shaft to help make strong, but light.
8. Some birds have as many as 25,000 feathers.
9. Molting - birds lose and replace feathers during the year
10. Feathers also help to insulate (down)
11. Birds are active and eat a lot of food.
12. Eat a variety of food - nuts, seeds, oysters, fish, insects, plants
13. Most birds build nests (some built by males, some by females-vary in size/location)
14. Some birds, such as pigeons, can harm people by carrying diseases
15. When scientists classify birds they look at the birds beak and feet.
16. Type of beak and feet help to determine lifestyle and diet.
17. Scientists who study birds are called Ornithologists.

E. Mammals

1. Most complex group of vertebrates
2. All mammals alike in four ways
 - a Warm blooded
 - b Breathe with lungs
 - c Have hair or fur on their bodies and some time in life
 - d Feed milk to young
3. Most live on land, some in water (whale dolphins)
4. Largest mammal - *blue whale* - 105.6 ft. long & 242,000 lb.
One of smallest mammals - *common shrew* - 4 in. long & 0.105 oz.
5. People are mammals - most intelligent
6. Young of most mammals develop inside mother's body.
7. Some produce many young at one time.
8. Larger mammals usually just have one baby.
9. Some babies finish developing in a pouch (marsupials) - possum, kangaroo, koala
10. Some lay eggs (monotremes) - platypus, echidna

11. Takes young different amounts of time to develop in mother, the larger the longer.
12. Several mammals important to people - cattle, pigs, sheep, horses, donkeys
13. Some mammals are harmful to people - rats
14. Mammologist - scientists who study mammals.

Habitat - Geographical area where an animal normally lives.

- characteristic surroundings of an area
- determined mainly by type of vegetation

Biome - Community that is a characteristic of a certain region. (type of community)

Community - A group of living things living together

Ecosystems - Regions with distinct climate, topographical features, water, soil, plants and animals

Ecology - The study of ecosystems.