STUDY GUIDES

Botany, Zoology, Anatomy, & Earth Science

by
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Author's Note

I'd like to thank B.J. Jordan Loyd for all of her help and ideas in the creation of these units. She's been an invaluable mentor to me over many years.

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North American Plants
&
God's Creation

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GLOSSARY OF TERMS

Biome: *the large area of plants and animals that occupy a specific area. Land biomes include grassland, tundra, desert, tropical rain forest, and deciduous and coniferous forests. Water (or aquatic) biomes are either freshwater or saltwater.*

Class: *the divisions of animals, plants, etc.*

Deciduous: *falling off or shedding at a particular time or season as leaves, horns, or teeth.*

Environment: *the surrounding area or things.*

Genus Species: *the sorting and division of things similar or closely related by specific, unique characteristics.*

Scientific Name: *a Latin and/or Greek name assigned by botanists (people study plants) to plants and zoologists (people who study animals) to animals. The name describes specific characteristics or relationships between it and a similar plant or animal.*

Scale: *a thin, flat, plate-like covering of certain animals or a thin covering or part of a plant.*

PLANT & CREATION SOUND-OFF

- In the beginning. . .
- God created the heaven and the earth
- And all that is in them.
- On the third day God created plants.
- He created flowering plants.
- Like monocots and dicots.
- Monocots have parallel leaf veins
- And their flower petals are in groups of threes.
- Like cattails,
- Lilies,
- Grasses,
- And wheat.
- Dicots have netted leaf veins
- That look like the palm of your hand.
- They have two seed leaves
- And have flower petals in groups of four or five.
- Like lilacs,
- Roses,
- And deciduous trees.
- Like maple and oak trees.
- God also created non-flowering plants
- Like ferns and conifers.
- Ferns reproduce by spores
- And they have large leaves called fronds.
- Conifers are evergreen,
- Have needles,
- And have cones that produce seeds.
- God created all these things and saw that they were good!

- *"And God saw every thing that He had made, and behold, it was very good."* Genesis 1:3

- *"For in six days the LORD made heaven and earth, the sea, and all that is in them, He rested the seventh day. Therefore the LORD blessed the Sabbath day and hallowed it."* Exodus 20:11

CREATION CHANT & JINGLE

In the beginning,
God created the heaven and the earth.
Creation took God just 6 days,
and here is how it happened:

Day 1: Day & Night
Day 2: Heavens
Day 3: Earth, Seas, and Plants
Day 4: Sun, Moon, and Stars
Day 5: Creatures of the Seas and of the Sky
Day 6: Creatures of the Earth, then Man

God saw that it was all good
And so He rested on the 7th day
And He blessed the sabbath day
And hallowed it.

PLANTS

Ferns, Conifers, Monocots, and Dicots

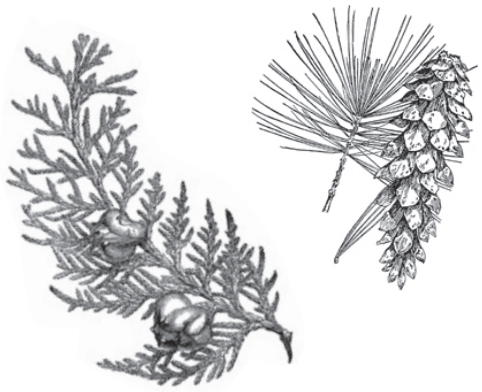
Distinctions/Differences/Characteristics

Ferns:

They do not really have flowers but reproduce by spores (on their underside); they have large leaves called fronds.

Conifers:

These have needles, cones, and are evergreen; non-flower producing plants. Examples: pine, fir, and cedar trees; arborvitaes, etc.



Two Classes of Flowering Plants:

Monocots:

Parallel leaf veins; single seed leaves; flower petals in groups of threes. Examples: cattails, lilies, grasses, and wheat.

Dicots:

Netted leaf veins (looks like the palm of your hand); two seed leaves (remember the seed leaf); flower petals in groups of four or five. Examples: lilacs, roses, and deciduous trees (like maple, oak, etc.).

Simple leaf

Can you tell the difference between a simple leaf, a compound leaf (a number of leaflets on a common stalk), a fern, conifer, monocots, and dicots?

Compound leaf

Conifers Worksheet

1. Conifers are non-flower producing _____.

2. They have needles, _____, and are evergreen.

3. Some examples of conifers are pine, fir, and cedar _____ and arborvitaes.

Can you draw a picture of a conifer?

Dicots Worksheet

1. Dicots are flowering _____.

2. They have netted _____ veins, two _____ leaves, and _____ petals in groups of four or five.

3. Some examples of dicots are lilacs, _____, and deciduous trees.

Can you draw a picture of a dicot?

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North American Mammals

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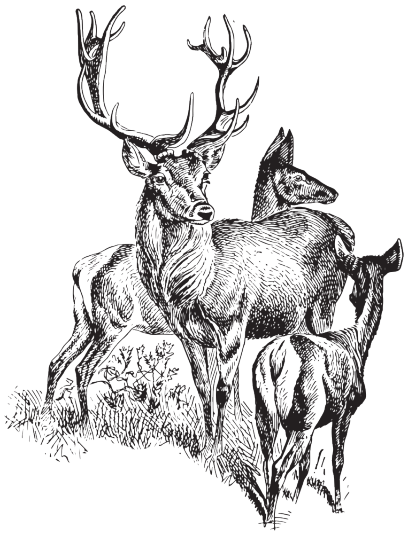
Mammal Facts Sound-Off & Review 1

1. A mammal is an animal that has hair or fur.
2. A mammal is warm blooded.
3. A mammal's young are usually born alive.
4. Bighorn sheep rams and ewes don't lose their horns.
5. Bighorn sheep don't have top front teeth
6. so they don't bite off food.
7. Bison are the largest land mammal in North America.
8. Bison have a very prominent hump on their shoulders
9. and a massive head.
10. Another name for elk is Wapiti.
11. Wapiti is Shawnee for "white rump."
12. The beaver have four sharp gnawing teeth
13. and they keep growing all their life!
14. The black bear is the smallest of the bears
15. and the most common.
16. They can be black, brown, blue-grey, or even white!
17. But their faces are always brown.
18. Caribou travel about 3,000 miles in a year.
19. Caribou are the same species as the reindeer in Europe.
20. Coyotes are smaller and lighter than the wolf.
21. A coyote's tail is normally held down.
22. Grey wolves hunt in packs at night.
23. Grey wolves have a black tip on their tail.
24. Cougars are also called mountain lions, pumas, or panthers.
25. The cougar is a good climber,
26. can jump more than 20 feet,
27. and can run as fast as a deer for short distances.
28. Bobcats have a good sense of hearing and eyesight,
29. and their whiskers are sensitive to touch.
30. All of these help them hunt at night.
31. The Columbian ground squirrel lives in extensive burrows.
32. During hibernation their heart rate slows from 350 to 5 beats per minute!
33. Badgers dig lots of burrows,
34. which is where they take their prey.
35. Badgers have a white badge-like marking on their forehead.
36. Wasn't God good to create mammals?



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North American Birds

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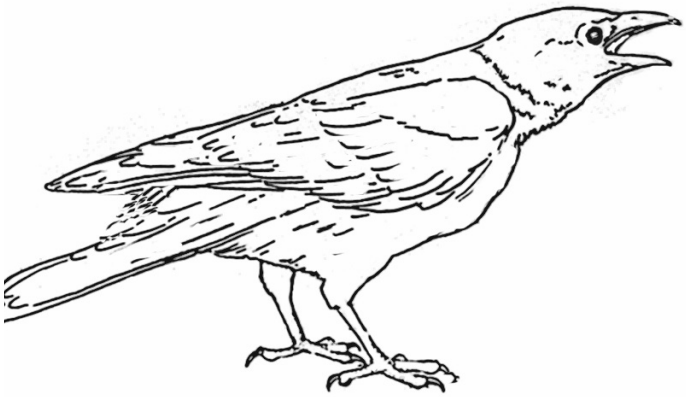
American Crow



BIOME: grasslands and forest edges

ENVIRONMENT: farms, fields, woodlands, town

AVERAGE SIZE: 17-21"; 15¾ ounces

FEED: insects, worms, birds, small mammals and amphibians, reptiles, eggs, seeds, fruit

REPRODUCTION: breeding February-June; 4-5 eggs; 18 days to hatch

AVERAGE LIFE SPAN: 14 years

Egg: 1.6" x 1.2"
Pale green to blue; spotted or blotched with brown

The American crow is a very common and familiar bird in the United States. They are large and black, with a purplish tint in the sunlight. Their feet and bill are black. They have rather rounded wings that can be seen when in flight, as well as a squarish tail. They can be a very outgoing bird. They are known for being a very vocal bird with their noisy *caw, caw.*

ABOUT THE AMERICAN CROW

1. Their feet and bill are _____.

2. They have rounded _____ and a squarish _____.

3. They are large and _____, with a purplish tint in the sunlight.

4. The American crow is a very _____ bird with a _____ *caw, caw.*

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North American Fish

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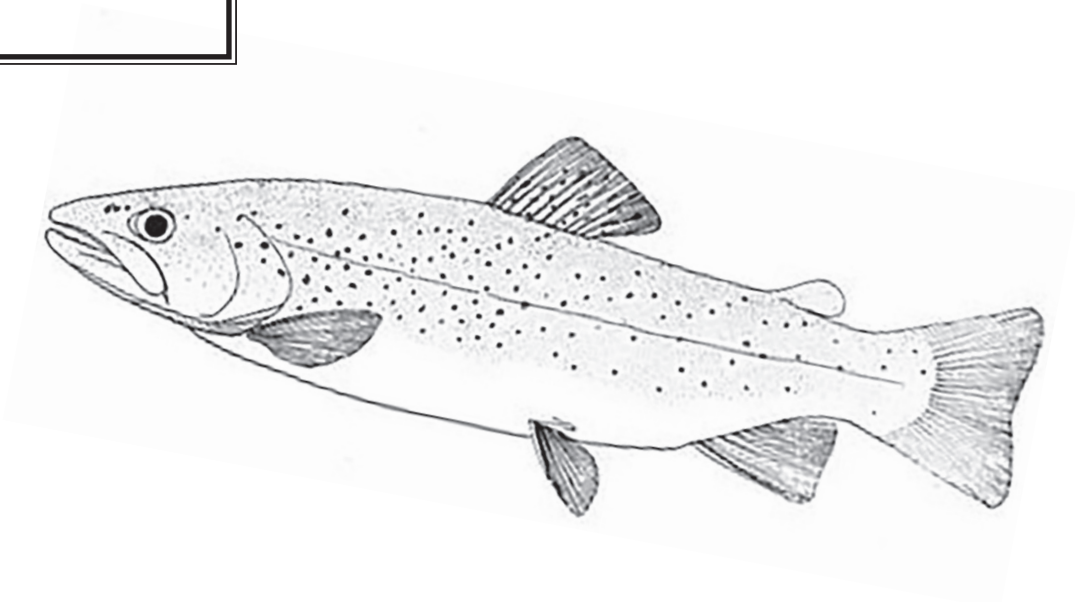
BIOME: saltwater or freshwater
ENVIRONMENT: lakes, ponds, rivers, streams
AVERAGE SIZE: up to 47”; 9-56 pounds
FEED: insect larvae, crustaceans, other fish
REPRODUCTION: spawning March-July; 200-8,000 eggs; 3-16 weeks to hatch
AVERAGE LIFE SPAN: 6-8 years

Rainbow Trout

Rainbow trout are one of the most popular game fish in the world. They vary in look depending on their sex, age, and their environment. Their underside is usually silvery in color with a pinkish-red stripe along the upper to middle part of their body. Native rainbows tend to be lighter with a more noticeable stripe. They generally have black spotting on their head, sides, and back; their fins are spotted as well. Their anal and pelvic fins often have a narrow white edging. They have small sharp teeth on their jaws and on their tongues.



ABOUT THE RAINBOW TROUT

1. Rainbow trout are one of the most popular _____ in the world.

2. Rainbow trout have a pinkish-red _____ along the upper to middle part of their body.

3. Rainbow trout live in lakes, _____, rivers, and streams.

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North American Reptiles & Amphibians

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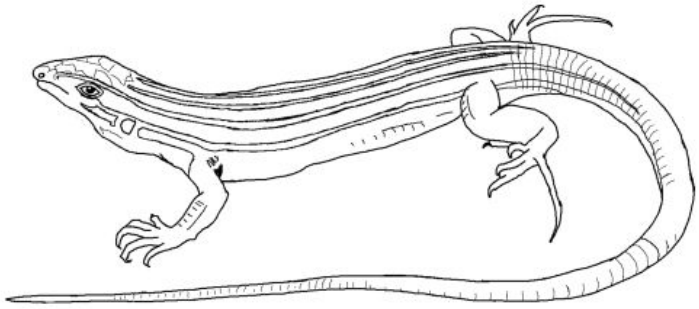
BIOME: woodlands, grasslands
ENVIRONMENT: leaf litter, rotting logs, rocks
AVERAGE SIZE: 6-10" long, including tail
FEED: insects, spiders, worms
REPRODUCTION: 2-6 eggs in June-July; hatch late summer
AVERAGE LIFE SPAN: 3-8 years

Western Skink



The Western skink is a medium-sized member of the lizard family with smooth, shiny scales. It is brown in color and has four white or beige stripes, two on the back and one on each side. Juveniles have bright blue tails. It is believed that their bright blue tail attracts the attention of predators to the tail and away from the head and body. Their tail breaks off easily and shakes, which attracts predators to the tail, which often makes it possible for the skink to escape. Skinks look somewhat like a snake with legs.

ABOUT THE WESTERN SKINK

1. The Western skink has a tail that _____ off easily.

2. They look somewhat like a _____ with _____.

3. They have _____ white or beige stripes.

4. They are a medium-sized member of the _____ family.

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Anatomy & Your Bones

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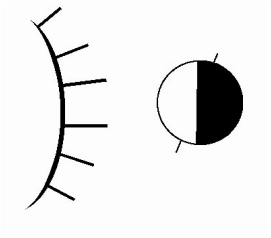
The Study of God's Creation of the Earth

Day and Night, the Earth, and Its Cycles

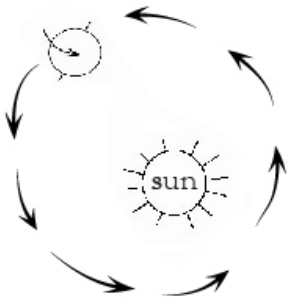
- The earth rotates around and around counterclockwise.
- The earth spins around and around.
- Rotation (rotate) means spinning around and around.
- The earth moves like that, one full turn every day.
- One full rotation takes 24 hours.
- God created the sun, the moon, the stars, and the earth.
- He started all those things in motion.
- God started the cycle of light and darkness that we call a day.
- A cycle is something that happens over and over again.
- Light and darkness happen over and over again.

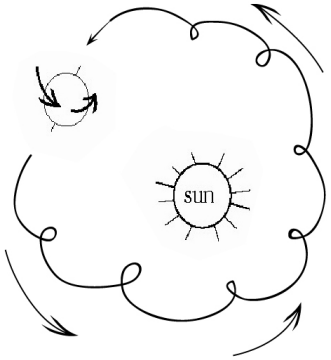


- The part of the earth that faces the sun receives light from the sun.
- The part of the earth that is away from the sun is in darkness.

"*And God called the light day, and the darkness He called night. And the evening and the morning were the first day.*" Genesis 1:5

- The earth is divided into 24 hour time zones.
- The international dateline is the hypothetical line where we say that the first hour of each day begins.
- When the sun is directly overhead, we say the clock time is noon.
- Think: When I got up this morning, someone else was getting into bed for the night. Do you know why?
- While the earth is rotating, it is also revolving around the sun.
- Revolving means to go around something. It takes the earth one year to revolve around the sun.
- The earth rotates 365¼ times in that year while it is revolving.





- A year is one complete cycle of seasons.
- The earth faces the sun at a slant, or tilt.
- Seasons occur because the earth revolves around the sun and because the earth is tilted.

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The Ear & Sound

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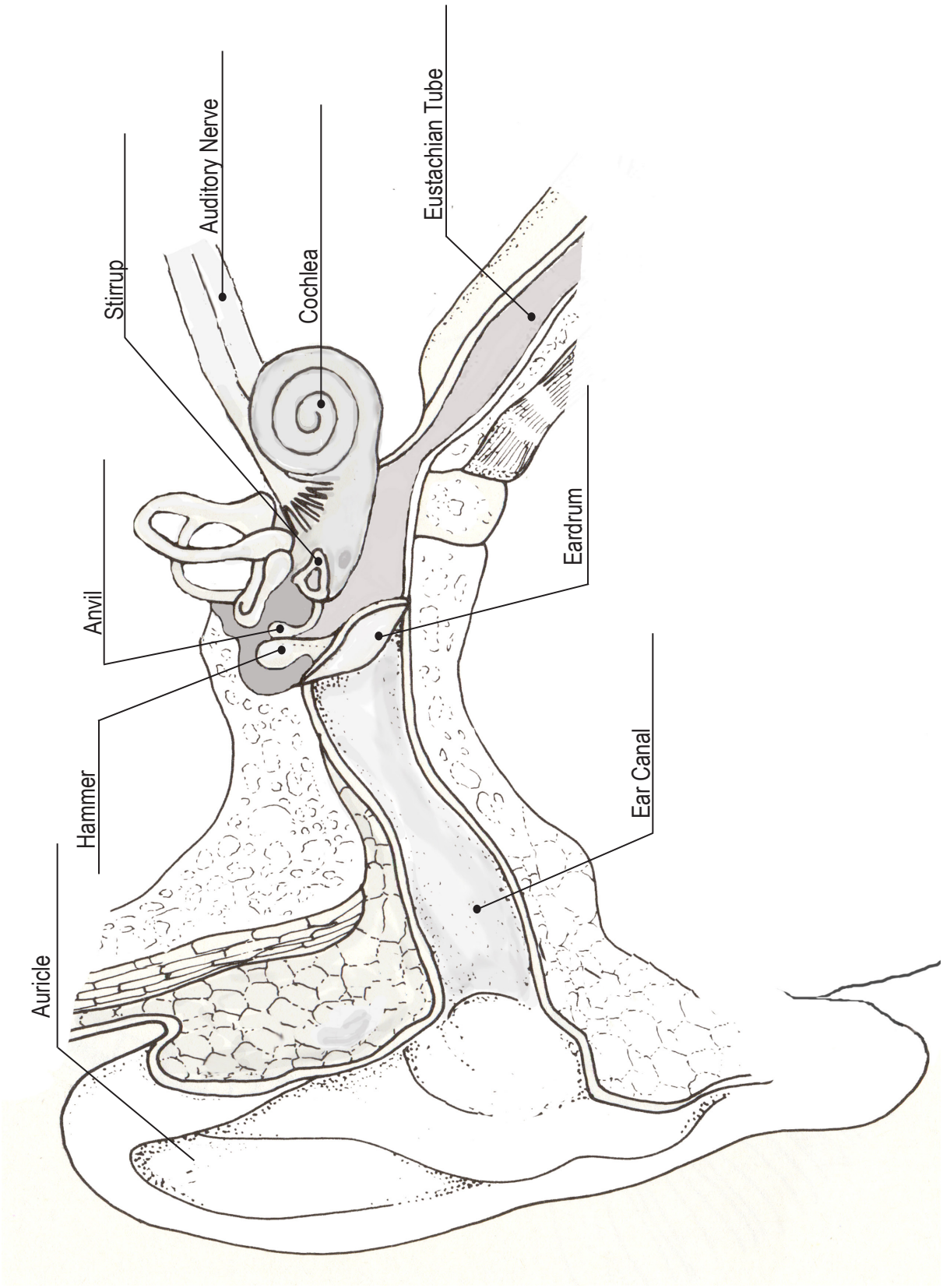
Let's Hear it for the Ear!



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Your Eye & Light

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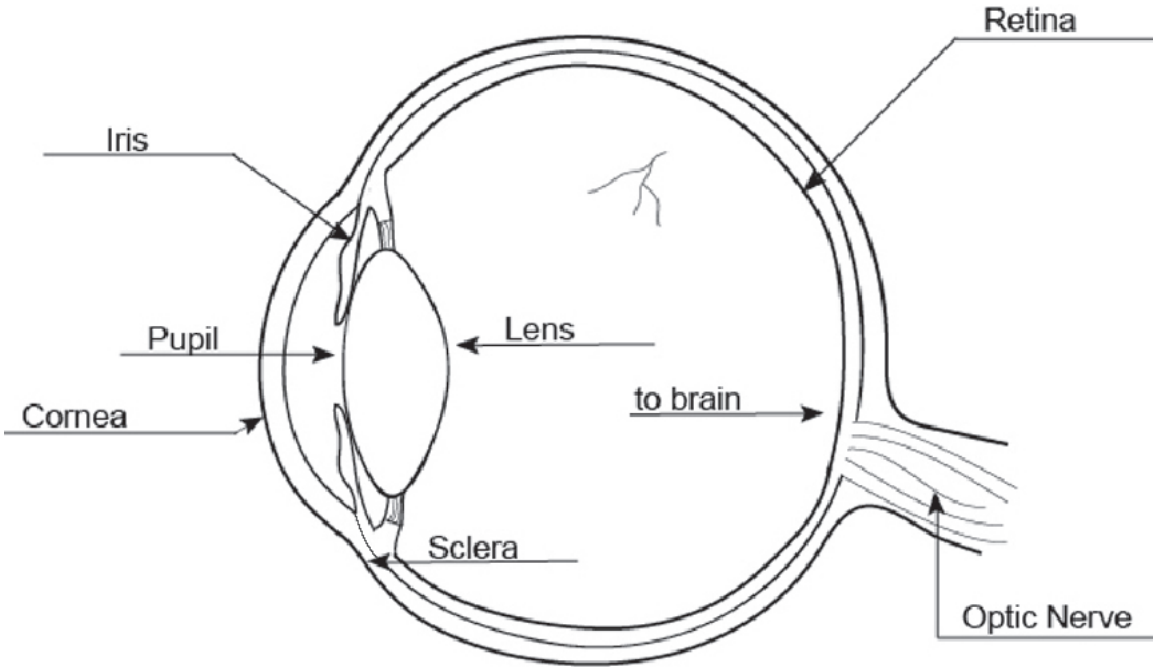
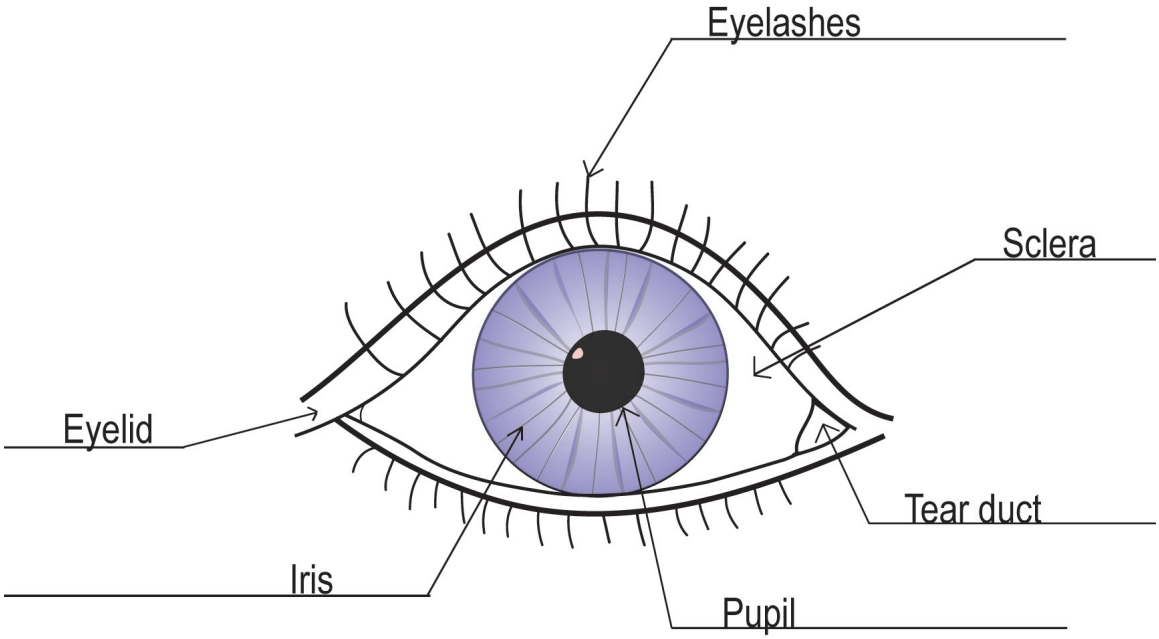
My Eye - Inside and Out





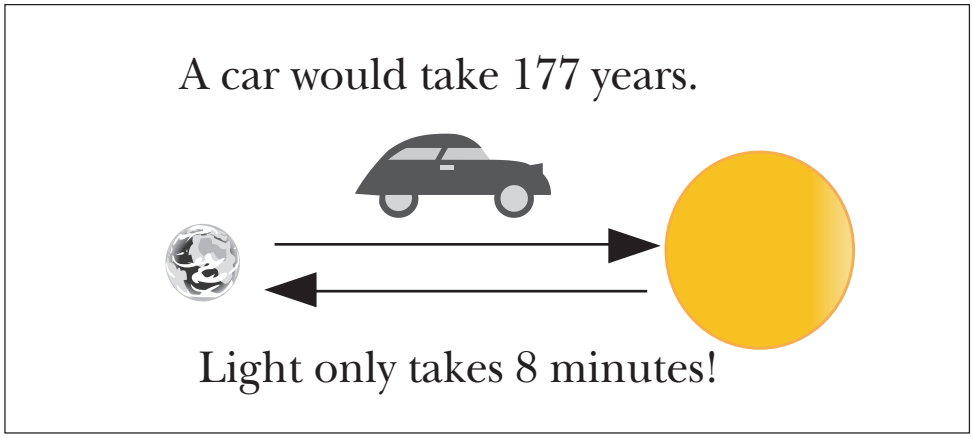
Eye & Light Study Notes

1. What is light? Light is one form of energy. Light keeps you warm, too. Light also helps green plants make food which helps them make the oxygen we breathe. The energy from the sun helps the plants make food from the water and other things they get from the soil.

2. How does light travel? Light travels fast and straight.

3. How fast is light? Light travels about 186,000 miles per second, so light from the sun takes about 8 minutes to go 93 million miles to the earth. Does that seem slow? If you could drive to the sun at about 60 mph, it would take you about 177 years to get there. In one second, light can go around the earth seven times!

4. How straight is light? Light is perfectly straight, until something bends it. The straight paths of light are called light rays.



5. There are basically three ways to control light. They are to block it with something (this makes a shadow); reflect it (change its path with a mirror) which is called reflection; and to bend it (change its direction by making it pass into another transparent material of different density, like glass or water) this is called refraction and it's how lenses work.