

#47: Taxonomy

- ☐ Classification system for life on Earth
 - ☐ Remember = "[King Philip Came Over For Good Soup](#)"
 - ☐ Kingdom
 - Phylum
 - ☐ Class
 - Order
 - Family
 - * Genus
 - > Species
-

#48: Vertebrates

□ Kingdom - Animalia

■ Phylum – Chordata (Vertebrates)

■ 5 Animal *CLASSES* with an **INTERNAL SKELETON** /
BACKBONE or Spine

■ Ex- FISH , AMPHIBIANS, REPTILES, BIRDS, MAMMALS
DINOSAURS too

■ **F.A.R.B.M.**

#49: Invertebrates

□ Animals without a skeleton or backbone

■ Phyla- **Arthropoda**:

EXOSKELETON

■ **Insects**

■ **Spiders** (arachnida),

■ **Crustaceans** (crabs, lobsters, isopods: horseshoe crabs, "rolly-pollies," sand crabs)

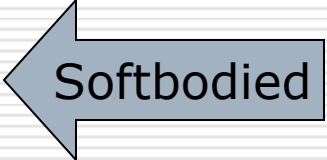
□ **Other Invertebrates:**

Phyla- Molluska (squid, snails, clams)

Phyla- Annelida (worms)

Phyla- Cnideria (jellyfish, coral)

Phyla- Echinodermata (starfish, sand-dollars, sea urchins)



Softbodied

#50: Adaptation

□ Physical or Behavioral characteristics that make an organism better suited for survival in it's environment.

■ EX:

- Long neck of giraffe enables it to reach high branches for food.
 - Pack hunting techniques of Lionesses and Wolves
 - Camouflage
 - Mimicry (leaf bug, flies that look like wasps)
-

#51: Dichotomous Key

- ❑ Tool used by scientists to name organisms
 - ❑ A series of YES/NO questions about the physical characteristics that leads to a name
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#52: Exothermic

- ❑ (Outside – Heat)
 - ❑ Animals that can not produce their own body heat
 - ❑ “Cold-Blooded”
 - ❑ Must get heat from their environment / surroundings
 - ❑ Ex- Amphibians, Reptiles, Fish, All Invertebrates
-

#53: Endothermic

- ❑ (Inside – Heat)
 - ❑ Animals that produce their own body-heat
 - ❑ “WARM BLOODED”
 - ❑ EX- **Mammals** and **Birds**
-

#54: Body Symmetry

- **RADIAL** – like a starfish, outward from center in all directions (radius) ex-starfish
 - **BILATERAL** – Left side identical to right side, most animals have
 - ex- all vertebrates, all arthropods
 - **ASYMMETRY** – without symmetry, like coral and sponges, ex- coral
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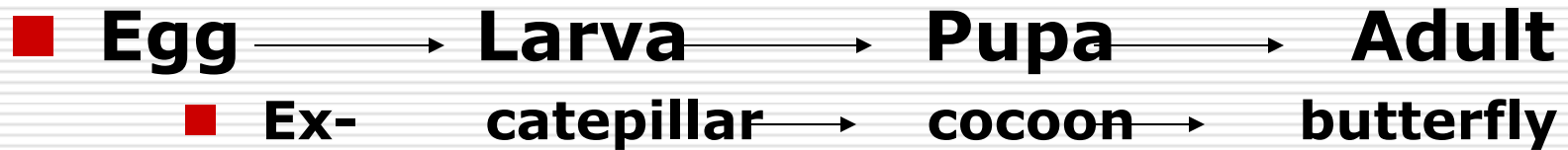
#55: Reproduction

- ❑ **SEXUAL**: 2 individuals create a new organism mixing their DNA (sperm and egg)
 - ❑ Almost all plants and animals

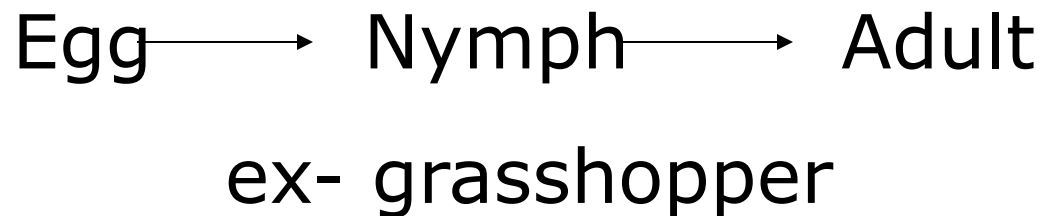
- ❑ **Asexual**: (NON SEXUAL) one organism makes a genetic clone / copy of itself
 - ❑ Ex: Fission – amoeba, algae, plankton, bacteria
 - Budding – hydra, yeast
 - Spores – Fungi (mold, mushrooms)
 - Ferns

#56: Metamorphosis

□ COMPLETE



■ INCOMPLETE



#57: Photosynthesis

□ How plants (**autotrophs / producers**) can make their own food.



■ water + carbon dioxide + energy = glucose + oxygen

#58: Respiration

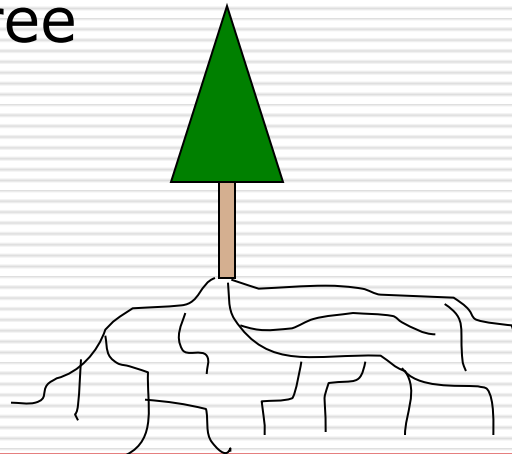
□ The burning of Glucose (sugar) for energy in Plants and Animals

■ Glucose + Oxygen $\rightarrow$ Energy + Carbon Dioxide

■ $C_6H_{12}O_6 + O_2 \rightarrow H_2O + CO_2 + \text{Heat}$

#59: Roots

- ❑ Supports / Anchors plant in ground
- ❑ Draws up water and nutrients
- ❑ Two Types
 - ❑ **TAPROOT** – Carrot, Beets
 - ❑ **FIBROUS** - tree



#60: Stems

- ❑ Supports Plant Leaves
- ❑ Transports water, food, nutrients through vein-like structures

■ **XYLEM** - WATER UP FROM ROOTS

■ **PHLOEM** - FOOD DOWN FROM LEAVES

❑ Types:

- **HERBACEOUS** – soft, green (photosynthesis), Dies in winter, ex- grass
 - **WOODY** – stiff, not green (no photo.), lives year round, ex- tree or bush
-

"Photosynthesis phloem down"

#61: Leaves

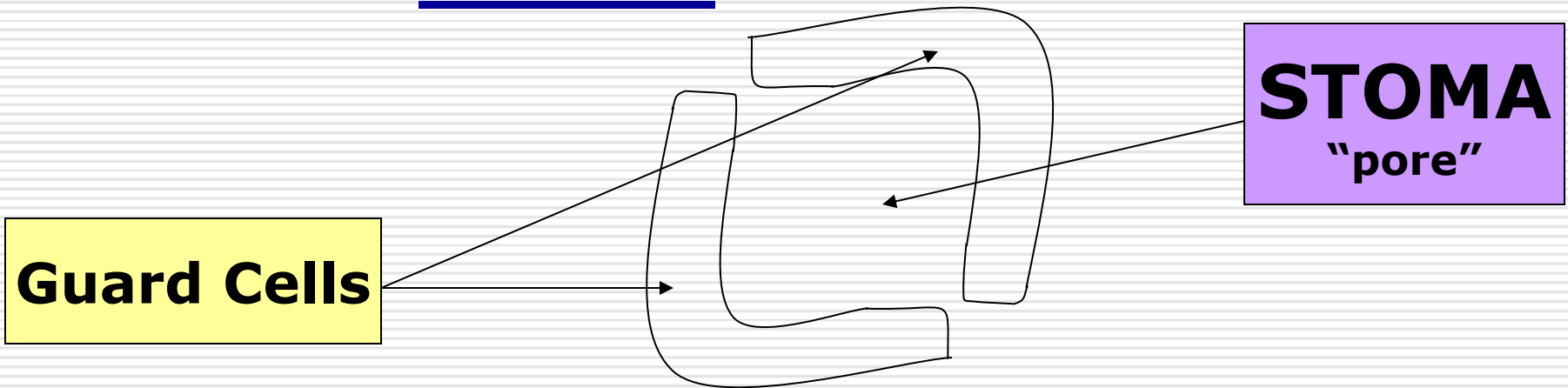
- Releases excess water through stomata

 - TRANSPIRATION

- PHOTOSYNTHESIS takes place (GREEN)

#62: Transpiration

- Process where plants release excess water and gases through the **STOMATA**
 - Pore made by two guard cells in **LEAVES**



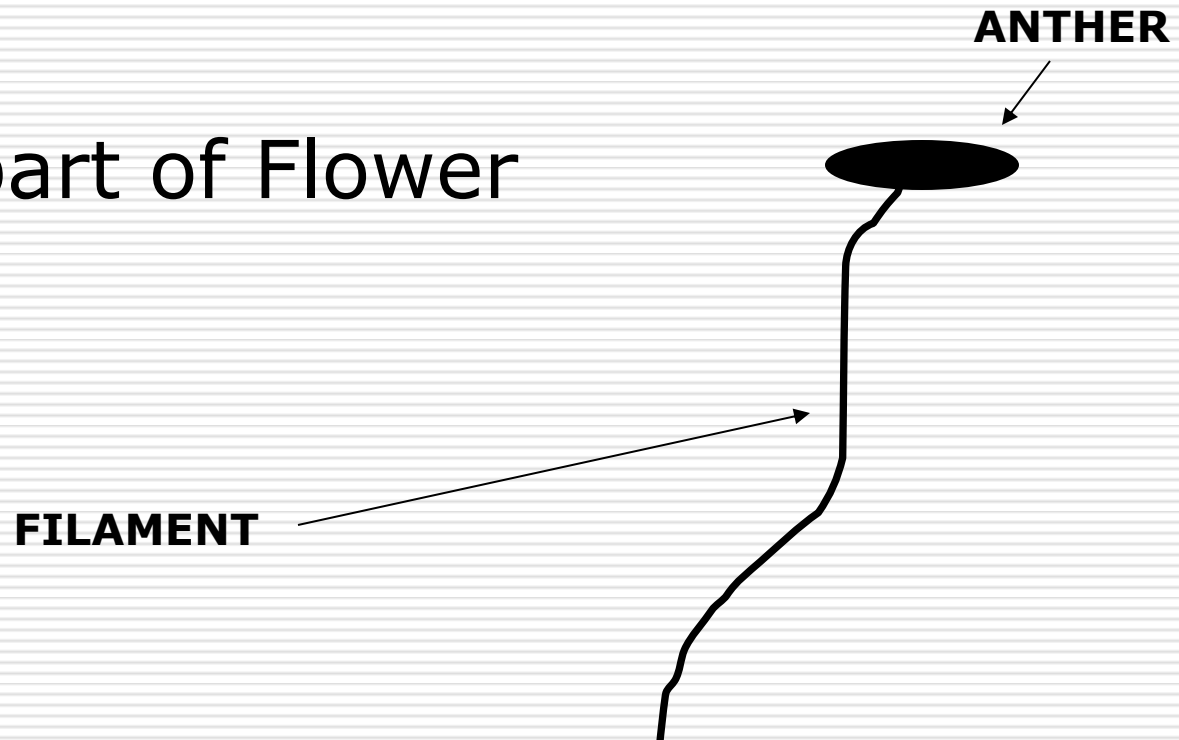
#63: 4 Ways Water Enters Plant

- ❑ **Osmosis:** water moves across cell membrane
- ❑ **Transpiration:** water out stomata
- ❑ **Capillarity:** water up through air spaces (like paper towel)
- ❑ **Root Pressure:** roots soak up water and force water up



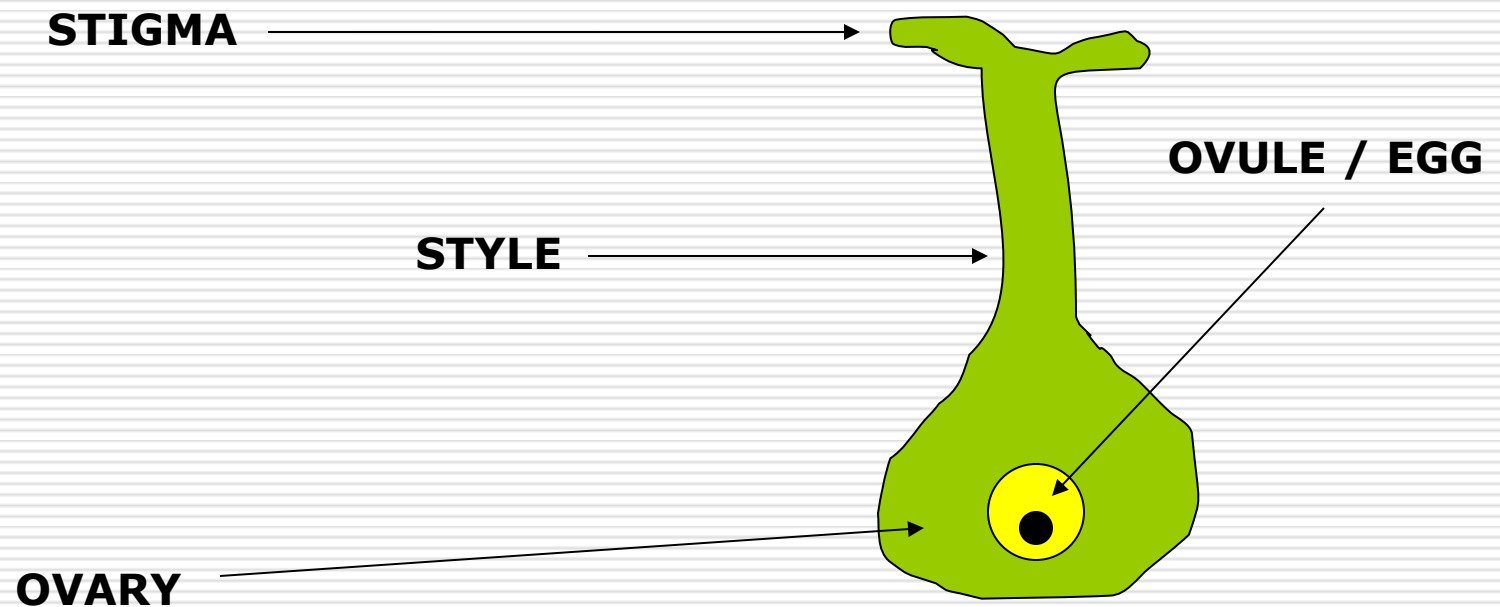
#64: Stamen

□ Male part of Flower



#65: Pistil

□ Female part of Flower



#66: Filament

- Stalk part of STAMEN
 - Holds up / supports the ANTHIER
-

#67: ANTHER

- Top part of STAMEN

- Makes POLLEN

 - Contains Sperm Cell

#68: OVARY

- Bottom part of PISTIL
 - Holds Ovule with Egg Cell inside
 - Grows into a fruit after Fertilization
 - Mmmmmmmmmmm!
-

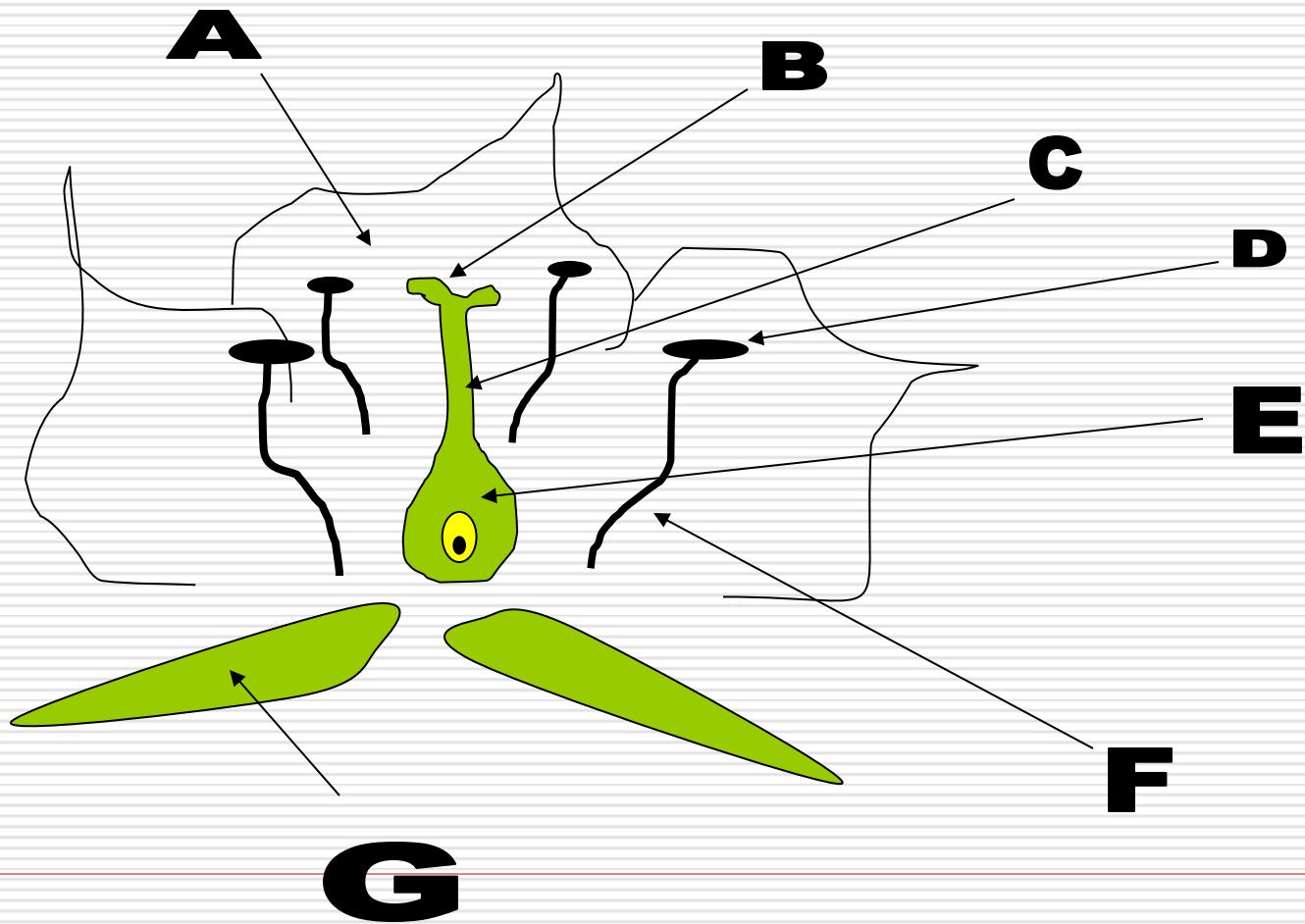
#69: STIGMA

- ❑ Top part of PISTIL
 - ❑ **Sticky** to catch Pollen Grains
 - ❑ “Sticky Stigma”
-

#70: STYLE

- ❑ TUBE part of Pistil
 - ❑ Sperm cell travels down Style from pollen grain to egg in ovule
-

#71



Back of #71

- ☐ A – PETAL
 - ☐ B - STIGMA
 - ☐ C - STYLE
 - ☐ D - ANTHOR
 - ☐ E - OVARY
 - ☐ F - FILAMENT
 - ☐ G - SEPAL
-

#72: Pollination

□ When pollen from one flower sticks to the Stigma of another flower

- Animal Pollination – Bees / Flowers
 - Wind Pollination – Pine Cones
-

#73: Fertilization

- When the sperm cell from pollen reaches the egg cell in ovule after traveling down the Style.
-

#74: Germination

- ❑ When **Temperature, Moisture** and **Sunlight** are right, the EMBRYO begins to grow or Germinate from the seed.
 - ❑ Seeds will “sleep” or be **DORMANT**, until conditions are right.
-

#75: Types of Flowers

- ❑ **Perfect Flower** – (SEX) Has both male and female parts, Stamen / Pistil

- ❑ **Imperfect Flower** – Only Stamen or Pistil, Male or Female

- ❑ **Complete Flower** – Has all major flower parts, Pistil / Stamen / Petals / Sepal
 - **Some flowers don't have sepals or petals**

#76: TRACHEOPHYTA

- ❑ Complex Plants

- ❑ Most Plants

- ❑ PHYLUM → **VASCULAR** plants

 - ❑ Have Phloem / Xylem (transport tubes)

 - ❑ Have true ROOTS / STEMS / LEAVES

#77: BRYOPHYTA

- PHYLUM:

- Simple / Primitive / Small

- NO TRUE – roots, stems, leaves

- No Flower = No sex = SPORES

- ASEXUAL

- Ex: Liverworts, Moss

#78: Parts of BRYOPHYTES

□ **THALLUS** - leaf like part

□ **RHIZOID** – root like part

□ **STALK** – stem like part

#79 : GYMNOSPERMS

- Two major Classes
 - Conifers (aka: Pines / Evergreens)
 - Palms
 - Seeds produced in **CONES**
 - Leaves are **NEEDLES**
 - Class of Vascular plant (tracheophyte)
-

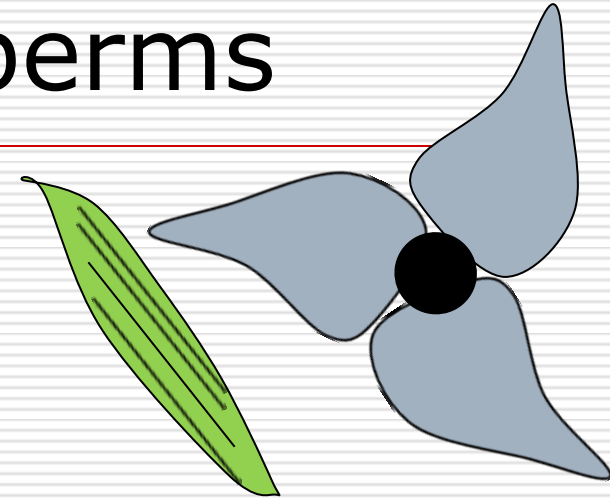
#80: ANGIOSPERMS

- ❑ Class of Vascular Plants (tracheophyte)
 - ❑ **FLOWERING PLANTS**
 - ❑ Flower makes fruit / seed inside is the offspring (sexual reproduction)
-

#81: Types of Angiosperms

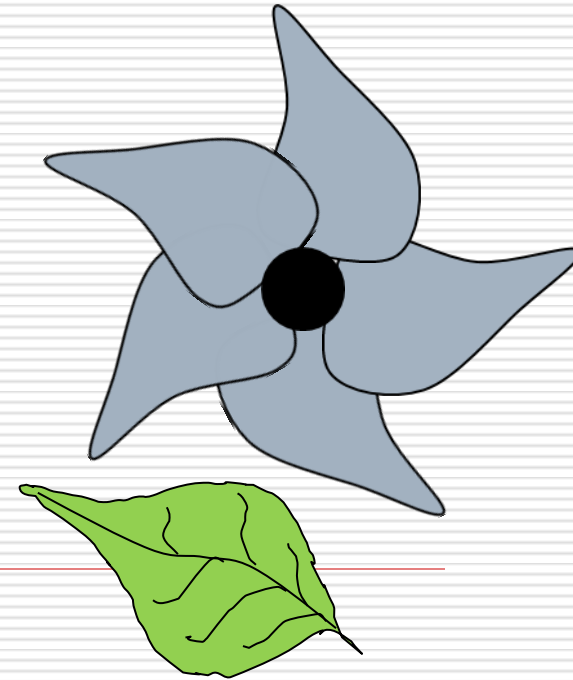
☐ **MONOCOT**

- ☐ One Cotyledon / one seed leaf
- ☐ Flower Petals groups of 3
- ☐ Parallel veins on leaves
 - Ex: CORN and GRASS

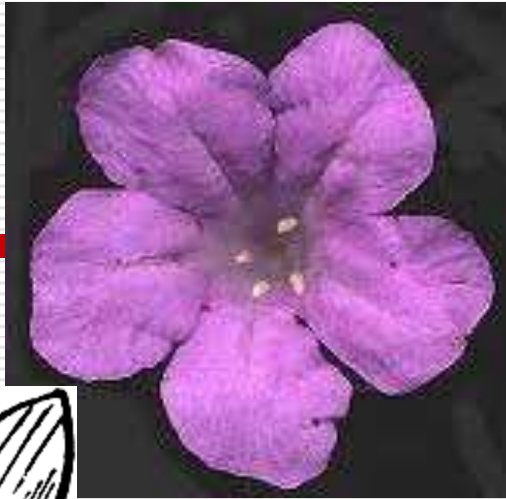


☐ **DICOT**

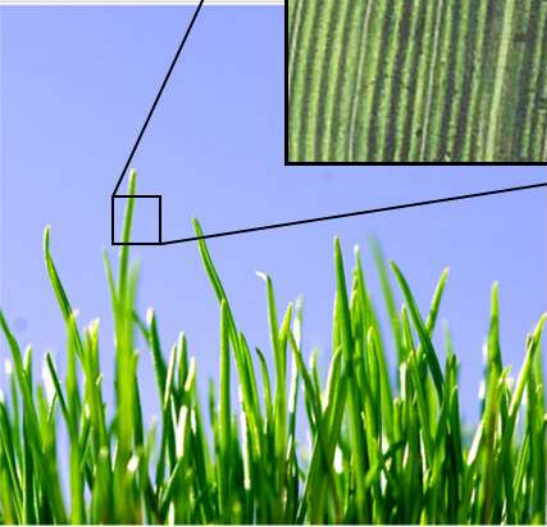
- ☐ Two cotyledon / two seed leaves
- ☐ Flower Petals groups of 4 or 5
- ☐ Branching veins on leaves
 - EX: Maple Tree / Peanuts



DICOTS



MONOCOT



#82: ECOLOGY

- Study of Living things and their relationship with the Environment
-

#83: Ecosystem

- ❑ All of the **Living** (BIOTIC) and **Non-living** (ABIOTIC) things in an area
-

#84: Population

- A group of organisms of the same species in an ecosystem
-

#85: Community

- All of the groups of species (POPULATIONS) in an Ecosystem.
-

#86: HABITAT

- The place an organism (plant or animal) lives
 - Provides-
 - FOOD
 - SHELTER
 - WATER
 - EXAMPLE: Deer in a forest
-

#87: NICHE

□ Job or role an organism fills in it's environment

■ EXAMPLES-

- Grass- food for herbivores
 - Rabbit- food for carnivores
 - Coyote- controls rabbit population
 - Bacteria- decomposer of all dead stuff
-

#88: Producers

- An organism that makes it's own food
 - PHOTOSYNTHESIS
 - Plants / Algae
-

#89: Consumer

- An organism that obtains food (energy) by eating other living organisms (plants / animals)
 - Ex- Cow, People, Dog, Beetle, Shark
 - Basically any animal
-

#90: Decomposer

- An organism that **breaks down** (eats) waste or **remains of other organisms** (dead plant and animal matter)
 - Ex- Bacteria / Fungus (mold and mushrooms)
-

#91: Biodiversity

- ❑ The **amount of different types of life** living in an Ecosystem
 - ❑ The more different species (diversity) the healthier the ecosystem
-

#92: Competition

- * More than one organisms struggling for the same resources (food, water, space)
- * Can be two groups of same species or two different species

Ex; 1. An Oak tree and a Spruce Tree competing for space / light
2. Two prides of lions competing for zebra's

#93: Types of Relationships in an Ecosystem

- **Predator + Prey**- one hunts / eats another (lion + zebra)

 - **Symbiosis** – Two organisms live together
 - **Mutualism** (+,+): both benefit
 - clown fish and sea anemone
 - **Commensalism** (+,N): one benefit, one unaffected
 - Barnacles on a whale, shark and remora
 - **Parasitism** (+,-): one benefits, one harmed
 - Ticks, fleas, tapeworm
-

Types of Symbiosis

■ **Parasitism** – One lives off the other

- tick= parasite
- dog= host

Carrying Capacity

Limiting Factors

Nitrogen Cycle

- Don't forget bacteria- ammonia - protein
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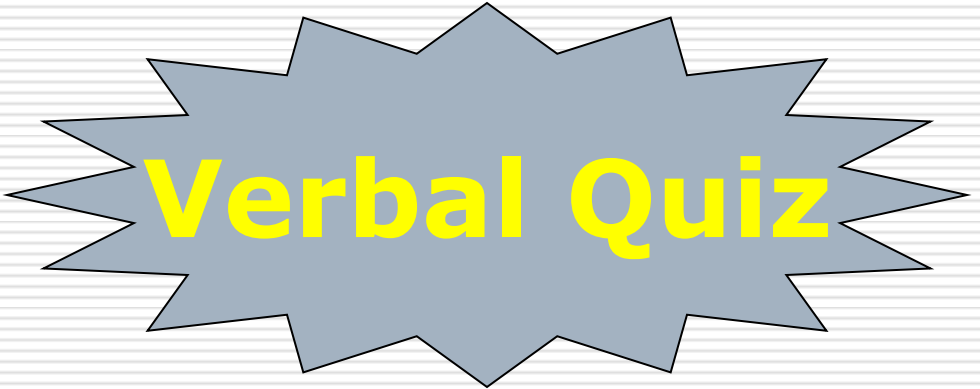
Water Cycle

Carbon Cycle

- Need to go over fossil fuels mr. virga
 - -j.virga
-

HOMEWORK-

☐ Study for:



Verbal Quiz

☐ **Cards**
