State test prep information session 2
Science (Mr. Lellis) Grade 5

Review topic 2 of 3 (Life sciences)

Most animal behavior (why they act the way they do) is because of their survival instinct (they want to stay alive). Many animals will use different defenses to stay alive, such as:
Camouflage (using their colors to hide near items with the same colors)



Here we see a gecko changed its colors to look like nearby leaves
Spike or spines (like with hedgehogs and roses stems [the thorns]) that will hurt an animal that tries to touch it  (Hedgehog here has quills!)

Shell (like with turtles and tortoises) that the animal can hide inside



The environment (where) an animal or plant is in can affect their ability to survive. If that living thing cannot get enough water or air (plants and animals), or food (animals), or sunlight (plants), it will not be able to survive. Most animals tend to relocate (move) when they cannot survive in one place as easily as before.
Sometimes when there is a change to the environment of an animal, it will affect them in a negative (bad) way.

One example is how cutting down trees can make for less oxygen in an environment.



One possible solution to remedying (fixing) this would be to plant more trees to replace what was cut, reduce cutting trees or both.

The concept of “natural selection” is the idea that animals and plants that are best suited for an environment are the most likely to survive there. For example, a giraffe would be the best suited to survive in an environment with high trees and branches because it has a long neck that can reach those heights when other animals cannot reach those trees.

For plants, if in a desert environment, a rose bush would be poorly (badly) equipped to survive because they need enough water to survive, which is difficult in a desert. A cactus would be a better selection because they can go long times without water and can store water in themselves to stay alive between rains.



With fossils, scientists use them to learn about the Earth millions of years ago. They can study the bones and imprints left behind to see how large living things were back then, determine which were meat or plant eaters, and even to learn about different species of plants. Scientists often connect fossils to current animals and plants because they notice similarities (how they look the same) between the fossil and something about a current animal or plant.

Skull fossil

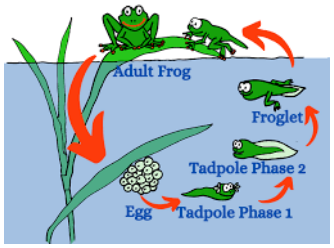


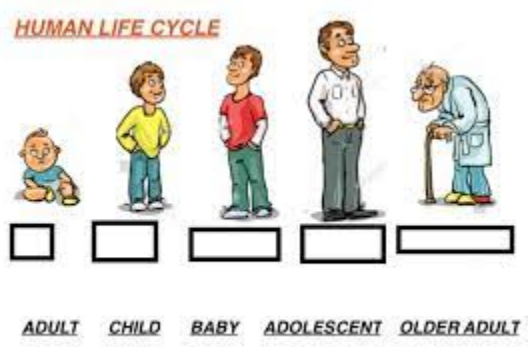
Imprint fossil



Organisms have different stages to their lives from the moment they are born to the time they die. For plants it is often: 1) seed 2) seedling (sprouting of roots happens) 3) young plant (it begins to grow) 4) adult plant In the adult plant stage, a plant will try to release seeds to make more of itself.
For animals it is often: 1) baby/toddler 2) young animal 3) adult animal In the adult stage, an animal will seek a mate (member of the opposite gender) to create babies with. The final stage for all plants and animals is death, whether through natural causes (they just get old and die) or they are destroyed or eaten by others.

Frog life cycle

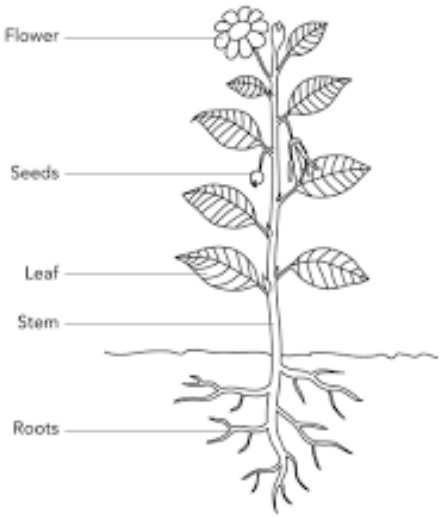




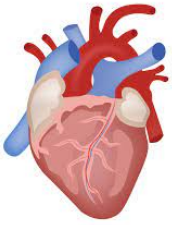
The order here is baby, child, adolescent, adult, older adult

Traits are anything about yourself we can observe, mostly what we see, hear, and feel. This can include hair color, eye color, nose size, height, weight, etc. Traits that we get because of our parents (mom and dad) through DNA are called “inherited”. This often includes hair color, eye color, nose size, ears, and even perhaps your expected height as you grow. The opposite kind of traits are “environmental,” which come from where you are raised or how you are raised. For example, children raised in areas with pollution can develop asthma as a respiratory (breathing) issue because things like smoke or chemicals can hurt their lungs when they breath in. Similarly, a child who has a healthy diet of fruit and vegetables, proteins and carbohydrates has better chances at good overall health than a student who mostly eats potato chips and candy all day. The second student could develop high blood pressure and diabetes because of those habits respectively.

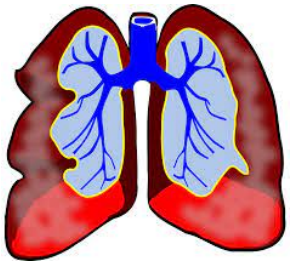
Plant and animal structures and how they benefit
Plants have different structures to help them survive:
Roots are in the ground to anchor (hold) the plant in the ground and to absorb (drink) water from the ground
Stem to move water from the roots to other parts of the plant
Leaves to collect the sunlight by being in a sunny area (like a solar panel)
Flower to create seeds, which leads to more of a plant being made when they fall to the ground



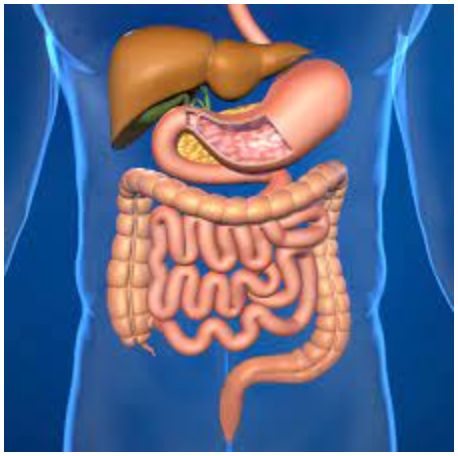
Animals have different structures to help them survive:
The mouth can bite off food, chew it into smaller pieces and be swallowed via the throat. The throat leads to the stomach, where the chewed food is digested and the body uses nutrients to make energy, strengthen muscles and bones, etc. Other structures include: the nose (to smell), the legs (to move), the arms and hands (to pickup things), among other structures. Some internal organs include: the heart (pumps the blood all through the body), the lungs (breathing in oxygen, breathing out carbon dioxide), intestines (digests chewed food).
Human heart



Human lungs



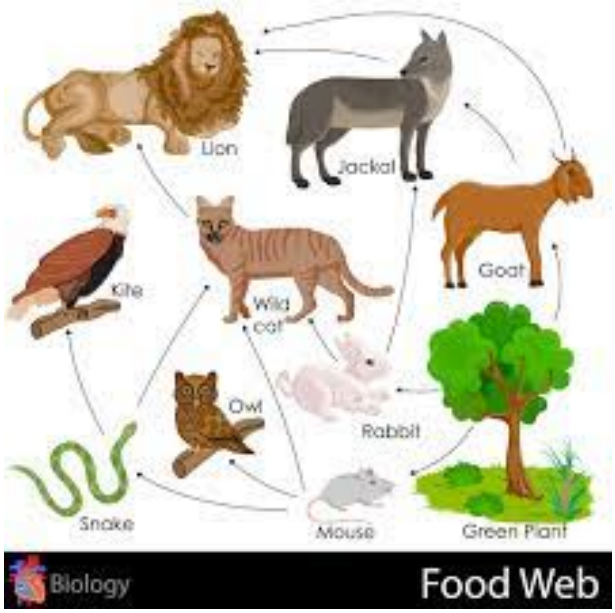
Human digestive system (squiggly parts are the intestines)



Animal communication can come in several ways. This can include body language (how they move and act towards others, without making noise) and verbal (which often includes various noises, not often including speaking like humans do). Verbal could include roars, squeaks, squeals, chirps and songs (like how birds tweet)

Matter and energy is moved in an environment because of “food chains”. Matter (stuff) and energy cannot be destroyed, but it can be transferred, from one living thing to another. This often happens as organisms consume each other. Plants often consume water, air and sun to make food, some animals consume plants only (herbivores), while other animals consume animals only (carnivores), and some animals eat plants and animals (omnivores). When an animal consumes something, the matter of that something becomes part of the animal. For example, if a lion eats a gazelle, the meat becomes protein for the lion’s body. Similarly, when we eat bread, our bodies use the carbohydrates to make energy that we use to move all day.
Examples of food chains:
In the arctic, things begin with fish, which are eaten by seals or penguins, which are both possibly eaten by whales or polar bears. The last organism on the food chain is the “apex predator” and has no predator above it to be hunted by.

Food web



NOTE

A food chain is one movement of organisms energy from producer to consumer, such as:

Green plant → Rabbit → Jackal → Lion

A food web is when food chains can overlap and some animals can be eaten by MANY animals, or some animals can choose to eat many animals. Food webs are interwoven food chains