Fast Facts #6 Animal Behavior

Name _____ Block ___

Vertebrates differ in how they regulate their body temperature.

These are ways animals respond to changes in their environmental temperatures.

Body Temperature	Characteristics
Warm-blooded (endothermic)	-Animals (including birds and mammals) that maintain a near **constant** internal temperature are endothermic. -Their temperature does not change when the environment gets hotter or colder. -When it's too hot they can cool off by sweating, panting, or changing position or location which allows them to find a cooler environment in the shade or in a shelter. -They must **eat more** because it takes energy to maintain a constant body temperature. (a lion eats its weight in food every 7 to 10 days) 
Cold-blooded (ectothermic)	- Ectothermic animals (fish, reptiles, amphibians) have an internal body temperature that **changes** with the temperature of the environment. - They must gain heat to perform internal activities (for example digestion). - If the environment is cold, the ectothermic animal becomes slow and sluggish (snakes and lizards must bask in the sun to get warm). - Some animals like fish must move into a warmer area before they can move around to hunt for food. - If the temperature is too hot, they must find a cooler temperature or burrow in the ground to keep their body cool.  - Cold-blooded animals take on the temperature of their surroundings so they don't use food energy to keep warm. **They don't eat as often**.

Stimulus	Response	Description
Changes in temperature	**Shedding**	-thick coats of fur or feathers insulate an animal to keep it warm in cold weather -in hot weather animals shed the thick coat providing a **cooling effect**
	Sweating	gets **rid of excess body heat**, when the sweat evaporates from the skin, it **cools** the animal
	Panting	- panting gets rid of excess body heat, these animals pant (breathe heavily) to **get rid of excess body heat** **-** the water in the animal's mouth and lungs evaporates, the evaporation cools the animal
	Shivering	- this is a mammals mechanism to **increase heat** production, the shivering transforms energy into heat - this is an involuntary response to a drop in temperature outside or within the body
Environmental Stimuli	**Blinking**	-a response to the loss of moisture, it **protects the eye** by covering the cornea with a tear film - this tear film helps prevent infection and keeps the eyes from drying out - blinking also helps the eye from being injured if a foreign object comes near the eye 
	Food Gathering	-the process of **finding food** by hunting, fishing or the gathering of seeds, berries, or roots, it may be seasonal -**storing food** - store food for the winter - (squirrels, mice or beavers store food for the winter) -**storing nutrition in the form of fat –** animals overeat and reduce their physical activity to conserve energy in response to an environmental stimuli such as cold weather or draught (bears, penguins, walruses, chipmunks)

Behavioral Responses to Environmental Stimuli

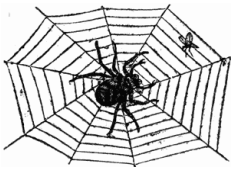
Behavioral Responses refer to how animals cope with changes in their environment. A behavior is a complex set of responses.

Behavioral Response	Description
Hibernation	Cold weather (stimuli) causes some animals to hibernate (response) part or all of the winter to conserve food stores in the body. This is a time of greatly reduced activity, food is conserved. The animal's temperature drops, and its heartbeat and breathing slow down so it uses less energy. 
Migration	Migration is the movement of animals from one place to another in response to seasonal changes. They travel to a place to find food.  The animals usually follow the same migration routes each year. Cold weather, the amount of daylight, or the weather (stimuli) causes some animals to travel (response) to other places they can find food. Examples of animals that migrate include monarch butterflies, orcas, caribou, and ducks.
Defense	**Camouflage** is protective coloration such as a an arctic hare (white in the winter and brown in the summer). Chameleons and other lizards change color to blend in with the environment. A skunk defends itself with **smell** by spraying a stream of oily, foul smelling musk. Wasp and bees have **stingers** to use when they are threatened or frightened. An octopus escapes from a predator because it can **eject** a black ink cloud in the water. A horned lizard can **eject** blood out of its eyes which gives it time to escape from a predator. A weaker animal can use **mimicry** to copy a stronger animal such as a flower fly that looks like a stinging wasp or a black moth caterpillar that looks like a snake. **Grouping** is when animals travel together in groups to protect the individuals in the group or to fool a predator into thinking that the whole group is one organism. Examples include herds (buffalo, zebra, cattle), packs (wolves), or schools of fish.
Courtship	Courtship is when adults of a species are trying to attract one another to mate. Courtship ensures that males and females of the same species recognize each other. Environmental stimuli, such as seasonal changes, stimulate courtship. Sensory cues (chemical odors, sounds, and color) often serve as courtship attractants for animals.

Internal Stimuli of Animals Ensure their Survival.

Animals have internal (inside) stimuli, or cues (clues) that ensure their survival.

Internal Stimulus	Description
Hunger	Animals need food for energy in order to survive. If animals didn't have a hunger stimulus, they might not eat and would die. Hunger (stimulus) cues an animal to eat (response).
Thirst	Thirst (stimulus) cues an animal to take in water (response). Animals need water because most of their bodies are made of water.
Sleep	Feeling sleepy (stimulus) causes us to go to sleep (response). Sleep is required to restore the body's ability to function.



Compare Inherited (Instincts) and Learned Behaviors in Animals

Instincts are behaviors or traits that the animal is born with. Instincts are **inherited** behaviors. Spiders are born knowing how to spin their web.

Learned Behaviors are behaviors that were taught to an animal, often by its parent. A mother lion teachers the lion cub to catch prey.

Behavior is an action that an animal does in response to changes in the environment. Behaviors help the animal survive.

Behavior	Description
Learned Behaviors	Learned behavior results from direct observations or experiences. **Imprinting** is a behavior when a newborn animal recognizes and follows the first moving object they see. Usually the moving object is the mother. The imprinting behavior cannot be changed. **Conditioning** (which includes trial-and–error learning) is a behavior in which the animal learns that particular stimulus and its response to that stimulus will lead to a good or bad result. Chimpanzees learn to use small sticks to dig in the soil for insects. A child learns that touching a hot object will cause pain.
Inherited Behaviors (Instincts)	**Inherited behaviors** are passed on from parents to offspring (children) and are with the animal from birth. Inherited behaviors are also called **instincts**. A fish or whale does not have to be taught how to swim. The behavior is inherited. Crying in babies is an inherited behavior in response to hunger, thirst, or sleepiness. A snail digs a hole to lay its eggs. A bird builds a special type of nest. A fiddler crab waves its claw to attract a female.