

Ap bio ch. 51 vocab



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Behavior what an animal does and how it does it Ethology a research field which originated in the 1930s with naturalists who tried to understand how a variety of animals behave in their natural habitats

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Fixed action pattern (FAP) a sequence of behavioral acts that is essentially unchangeable and usually carried to completion once initiated

Sign stimulus an external sensory stimulus that triggers an FAP

Behavioral ecology the research approach based on the expectation that animals increase their Darwinian fitness by optimal behavior

Search image a set of key characteristics that will lead an animal to the desired object

Optimal foraging the concept that natural selection will favor animals that choose foraging strategies that maximize the differential between benefits and costs

Learning formally defined as the modification of behavior resulting from specific experiences

Maturation a process which has ongoing developmental changes in neuromuscular systems

Habituation a very simple type of learning that involves a loss of responsiveness to stimuli that convey little or no information

Imprinting learning that is limited to a specific time period in an animal's life and that is generally irreversible

Critical period a limited phase in an individual animal's development when learning of particular behaviors can take place

Associative learning the ability of many animals to learn to associate one stimulus with another

Classical conditioning a type of associative learning well known from the laboratory studies of Russian physiologist Ivan Pavlov in the early 1900s; learning to associate an arbitrary stimulus with a reward or punishment; (Dogs learn to associate a bell with food, so they salivate when the bell rings)

Operant conditioning also called trial-and-error learning; an animal learns to associate one of its own

behaviors with a reward or punishment and then tends to repeat or avoid that behavior
Playa behavior that many mammals and some birds engage in that has no apparent external goal but involves movements closely associated with goal-directed behaviors
Cognition the ability of an animal's nervous system to perceive, store, process, and use information gathered by sensory receptors
Cognitive ethology the study of animal cognition that attempts to illustrate the connection between data processing by nervous systems and animal behavior
Cognitive maps internal representations, or codes, of the spatial relationships among objects in their surroundings
Kinesis involves a simple change in activity rate in response to a stimulus
Taxi a more or less automatic, oriented movement toward or away from some stimulus
Migration regular movement over relatively long distances
Social behavior any kind of interaction between two or more animals, usually of the same species
Sociobiology a relatively new discipline which applies evolutionary theory as a foundation for the study and interpretation of social behavior
Agonistic behavior a contest involving both threatening and submissive behavior determines which competitor gains access to some resource, such as food or a mate
Dominance hierarchy a clear "pecking order"; within a group, alpha, beta, and so on down the line to the omega, or lowest, animal
Territory an area that an individual defends, usually excluding other members of its own species
Parental investment defined as the time and resources an individual must expend to produce offspring
Lek a small area in which males display communally
Promiscuous mating with no strong pair-bonds or lasting relationships
Monogamous a relationship in which the mates remain together for a longer period; one male mating with one female
Polygamous a relationship in which the mates remain together for a

longer period; most often involves a single male and many females called polygyny
Polyandry when, in some species, a single female mates with several males
Pheromones chemical signals that are especially common among mammals and insects and often relate to reproductive behavior
Altruism when, on occasion, animals behave in ways that reduce their individual fitness and increase the fitness of the recipient of the behavior
Inclusive fitness describes the total effect an individual has on proliferating its genes by producing its own offspring and by providing aid that enables other close relatives to increase the production of their offspring
Coefficient of relatedness the proportion of genes that are identical in two individuals because of common ancestors
Kin selection the individual's altruism can result in more genes identical to its own in the next generation if it aids a sibling rather than a cousin; this mechanism of increasing inclusive fitness
Reciprocal altruism for example, when a baboon may help an unrelated companion in a fight, or a wolf may offer food to another wolf even though they share no kinship; a sort of exchange of aid