

TOPIC 8.1- Ecology

Timing and coordination of biological mechanisms involved in growth, reproduction, and homeostasis depend on organisms responding to environmental cues.

1. Explain how the behavioral and/or physiological response of an organism is related to changes in internal or external environment.

- Organisms respond to changes in their environment through behavioral and physiological mechanisms.
 1. What feedback mechanism (positive or negative) is needed to maintain their internal environment to go back to their target set point.

2. Which amplifies the response?

- Organisms exchange information with one another in response to internal changes and external cues, which can change behavior.
 - a. Give examples on how changes in our environment would cause these responses, and why animals respond this way.
 1. Fight or flight response-

2. Predator warnings-

3. Protection of young-

4. Avoidance responses-

b. Which of those four do we as humans see most in our lives?

2. Explain how the behavioral responses of organisms affect their overall fitness and may contribute to the success of the population.
- Individuals can act on information and communicate it to others.
 - Communication occurs through various mechanisms—
 - a. Organisms have a variety of signaling behaviors that produce changes in the behavior of other organisms and can result in differential reproductive success. Give three examples and describe how organisms exchange information in response to internal changes or environmental cues.
 - 1.

2.

3.

- b. Animals use visual, audible, tactile, electrical, and chemical signals to indicate dominance, find food, establish territory, and ensure reproductive success. Provide an example for:

- 1. Visual:

- 2. Audible:

- 3. Tactile:

- 4. Electrical:

- 5. Chemical:

- b. Is there one that tends to work the best? Why or why not?

- Responses to information and communication of information are vital to natural selection and evolution—

- a. Natural selection favors innate and learned behaviors that increase survival and reproductive fitness.

- 1. Describe innate behaviors and how they are inherited.

- 2. Explain how the responses to information and communication of information are vital to natural selection.

3. Give an example of how natural selection is shown today.

- Cooperative behavior tends to increase the fitness of the individual and the survival of the population.

a. Provide two ways animals use cooperative behavior.

1.

2.