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BIOLOGY GRADE 12 LESSON 8

UNIT FIVE SUMMARY

LEARNED(AQUIRED) BEHAVIOR

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LEARNED(ACQUIRED) BEHAVIOR

- **By the end of this lesson you should be able to**
 - list the different types of learned behavior**
 - Explain how the learning processes takes place in each type**
 - Describe examples of each types of learning**
 - Compare innate and learned behavior patterns**

LEARNED(ACQUIRED) BEHAVIOR

- **Learned behavior :-** is a behavior that is acquired **through experience** (such as trial and error) or by insight.
- *The **strengthening** of existing responses or the formation of new responses to existing stimuli that occurs because of **practice or repetition**.*
- unlike innate behavior, they are rarely fully functional the first time they are performed.
- **Can you mention some differences between innate and learned behavior?**

Differences between innate and learned behavior

Innate behaviour	Learned behaviour
Genetically determined and common to all members of a species	The behaviour is changed by, or develops through, experience and may vary from individual to individual
Behaviour is fully functional at the first attempt	The animal develops the behaviour through trial and error or by insight
There is, generally, no modification of the behaviour	The behaviour may be modified by new experiences
Adaptive behaviour that has been retained as a result of natural selection	Behaviour is learned anew by each member of the species and may not be adaptive

Characteristics of learned (acquired) behavior

- Learning is a process through which **experience changes an individuals behavior.**
- Not all behavioral changes are due to learning.
- Most learning experiences **must be repeated**
 - Example** :- small child learning to walk
- The behavioral changes that result

Types of learned(acquired) behavior

1) Habituation

2) Sensitization

**3) Associative learning(classical
conditioning and operant
conditioning)**

4) Latent learning

5) Insight learning

6) Imprinting



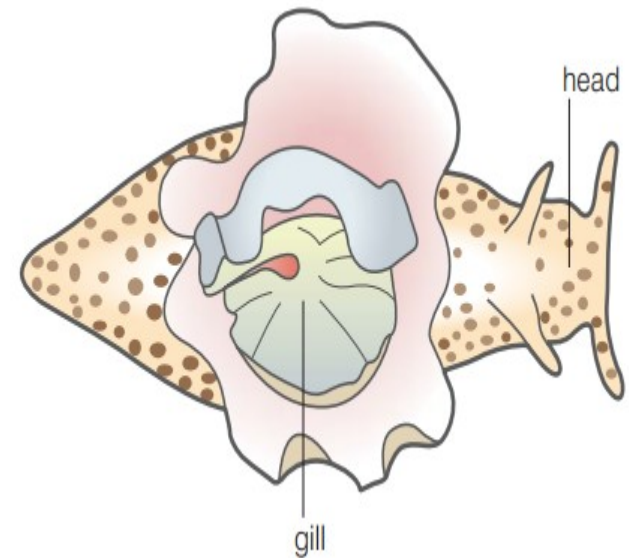
1) Habituation :- is the simplest form of learning

:- the **progressive loss** of responsiveness to repeated stimulation

:- is a process which results in a **decreased response to a stimulus** after a repeated exposure to that stimulus over a period of time.

Example :-habituation to human occur in prairie dogs (reduced alarm calls)

- a short and long term habituation of ***aplysia*** (sea slug) (withdrawing its gill after touch)



2. Sensitization :- is an increase in response to a harmless stimulus when that stimulus occurs after a harmful stimulus.

➤ **Two types of sensitization**

a. Peripheral sensitization :- sensitization that results from changes in neurons of the peripheral nervous system.

b. Central sensitization :- sensitization that results from changes in neurons of the central nervous system.

3. Associative learning

- **It involves associating different types of stimuli with different types of responses**
- **There are two types of associative learning**
 - 1. Classical conditioning**
 - 2. Operant conditioning**

1. Classical conditioning

- **Classical conditioning is learning in which one stimulus comes to be linked through experience with another one.**
- **Naturally occurring stimulus becomes associated with a different stimulus, which now also produces the same response.**
- **It was discovered by a Russian physiologist Ivan Pavlov, who worked with dogs to develop this theory.**
- **In 19th century the Russian physiologist Ivan Pavlov discovered classical conditioning , a form of associative conditioning . He found a dog automatically salivate at the sign of food (unconditioned response)**

The various stimulus and responses are

1. The unconditioned stimulus (US)

- This unconditionally, **naturally and automatically** triggers a response

Example :- when you smell a favorite food, you immediately feel very hungry. The smell of food is unconditioned stimulus.

2. The unconditioned response (UR)

- The unconditioned response is the unlearned response that **occurs naturally** to the unconditioned stimulus.

Example :- in a “feeling hungry “ feeling hungry is the unconditioned response.

3. The conditioned stimulus

- This **neutral stimulus** does not initially produce the unconditioned response. But after association with the unconditioned stimulus, it triggers the same response.

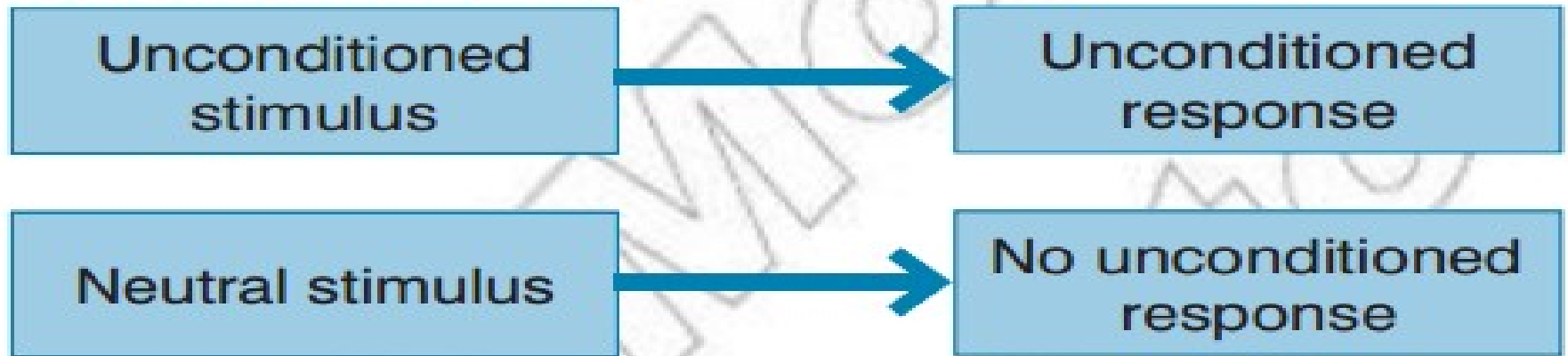
4. The conditioned response

- The conditioned response is the response to the previously neutral stimulus.

Pavlov's research involved the following phases

1. First he served food (**unconditioned stimulus**) to the dogs at regular intervals = they salivate (**unconditioned response**)
2. Then, as he feed them (**unconditioned stimulus**) , he rang the bell (**neutral stimulus**) , they continued salivation (**unconditioned response**) as the food was presented and the bell was rang.

Before conditioning



During conditioning



After conditioning



1. Before conditioning



→
response



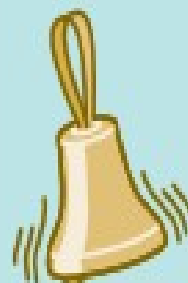
food

salivation

unconditioned
stimulus

unconditioned
response

2. Before conditioning



→
response



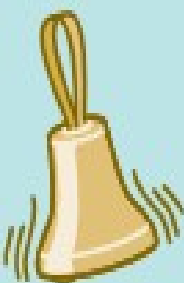
handbell

no salivation

neutral
stimulus

no conditioned
response

3. During conditioning



→
response



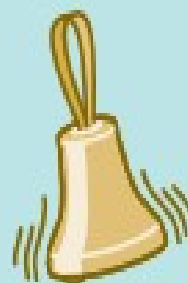
handbell

food

salivation

unconditioned
response

4. After conditioning



→
response



handbell

salivation

conditioned
stimulus

conditioned
response