

Unit 2 : Animal Science



3 Growth and Response in Animals

About the Lesson

- Growth in animals
- Response in animals

We see many different animals around us. All animals breathe, move, eat, grow and reproduce. They are attracted by some things and repelled by the other things. But they have two characteristics in common – growth and response.

Growth in Animals

We can see growth in every animal. Chick comes out of an egg and grows into a hen. In the same way, a child grows and becomes an adolescent.

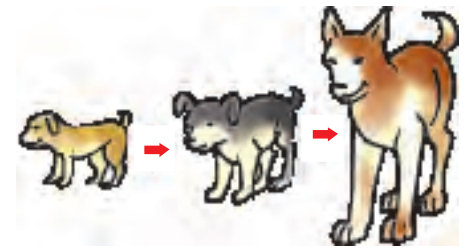
Each and every organ of animals grows in a fixed proportion. Small hands and legs become large and big.

The growth in animals is possible only up to a certain age. They do not grow till their death like plants do. When they become adults, only then they start reproducing and extend their family line.

The speed of growth in different animals is different. Some become adult fast while some take time to become adult. For example, a cow becomes an adult in 2-3 years while man takes about 20-22 years.

We know that if a plant loses a branch, a new branch takes its place. But it is not so in animals. If they lose any part, it cannot be replaced.

But there are some animals in nature which contradict this. If some organ of theirs is cut away or broken, it is replaced by a new organ. Lizard, snail and starfish are some such examples.

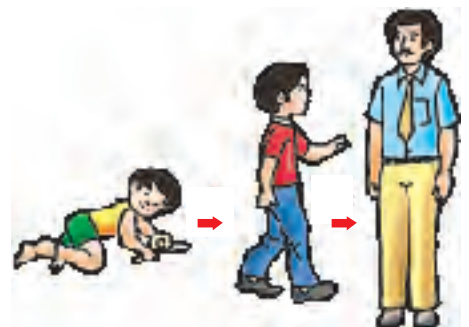


Growth in animals



Do You Know ?

- * With the growth in organs, the weight also increases.



Growth in humans



Strange But True

- * If the aquatic animal hydra is cut into two, we get two hydras.





Lizard



Snail



Starfish

The process of a new organ replacing the lost organ is called regeneration.

Response in Animals

Can you tell what happens when :

- ◆ Somebody points a light on our eyes ?
- ◆ We touch a hot utensil ?
- ◆ We look at a tasty food item ?

The answer to all the questions given above is the same, that we respond towards stimuli. We close our eyes on seeing bright light, we take back our hand on touching the hot utensil, and our mouth waters on seeing the tasty food item.

This way, the torch light, hot utensil and favourite food are **stimuli**. The closing of eyes, removing of hands and watering the mouth are **reactions**. These reactions to these stimuli are known as **sensitivity**.

In the same manner, all the animals are sensitive to any stimulus, such as light, heat, sound, smell, taste, etc.



Response in humans

● **Light** : Most of the animals are very sensitive to light. Some animals such as bird and monkey are active in light and become inactive when it is dark. Opposite to this, owl, bat, rat, cockroach, etc. are inactive in the light but very active in the dark.

Some animals and insects are attracted to light. Moths and some other insects start flying around a light as soon as it is switched on.



Sensitivity to sound

● **Sound** : It has been observed that nearly all the animals are very sensitive to sound also. Animals in a forest start running on hearing a lion's roar. A dog starts barking on



Sensitivity to light



Do You Know ?

* Animals active in the night are called nocturnal animals.

hearing the foot-steps of a stranger. In the same way, if someone shouts in our ears, we cover them immediately.

● **Smell** : Just like humans, animals too have the ability to smell. Some animals smell their food or danger from far away. The smelling power of deer and dogs is far stronger than other animals. Some special breeds of dogs are hired as police dogs because of this ability only.



Sensitivity to smell

● **Heat** : Just like humans, other animals too are sensitive to heat and cold. If cold water is poured over a cat or a dog, they run far away. Then they shake water off their bodies and get dry. In the same way, if we move a heated rod towards small insects, they turn back immediately.

Strange But True

* The smelling power of flies and ants is extremely strong.



Sensitivity to heat



● **Taste** : Just like humans, animals too have the ability to taste. Most of the animals have taste buds located on the tongue only. But the taste buds of some animals are located on other body parts as well. The taste buds of flies are located on their feet. That's why they are attracted to sweets.



Sensitivity to taste

Due to this ability of taste, animals are attracted to their favourite foods.



Looking Back.....

- ❖ All the animals have two common characteristics : growth and response.
- ❖ Every organ of an animal grows up to a certain size only.
- ❖ The growth in animals is only up to a certain age.
- ❖ The growth of a new organ in the place of a lost one is called regeneration.
- ❖ Response to any stimulus is known as sensitivity.
- ❖ Animals respond to light, smell, sound, heat, taste, etc.



Exercise

A. Tick (✓) on the correct option : (MCQs)

- How is the speed of growth in animals ?
(a) Slow (b) Fast (c) Different
- At what age does man attain maturity ?
(a) 10-12 yrs (b) 15-17 yrs (c) 20-22 yrs
- What is the process of a new organ replacing a lost one called ?
(a) Regeneration (b) Reaction (c) Sensitivity
- What is the response to stimulus called ?
(a) Regeneration (b) Reaction (c) Sensitivity
- Till when do the animals grow ?
(a) Till a fixed age (b) Till death (c) Never
- What do the cockroach and rat do in light ?
(a) Run away (b) Do not run (c) Remain normal

B. Answer the following questions :

- Which two main characteristics are found in animals ?
- How do animals grow ?
- What do you understand by regeneration ? In which animals is it found ?
- What is sensitivity ? Animals are sensitive to which stimuli ?
- How do flies taste ?

C. Fill in the blanks :

- Animals grow till a _____ age only.
- Some animals become _____ early while some take time.
- We display _____ towards _____.
- Reaction to _____ is called _____.
- Animals are very sensitive to _____.

D. Write True or False :

- A hen or cock grows into a chick.
- The speed of growth in every animal is different.
- The tail of lizard does not regenerate on cutting.
- Bat, owl and rat become active at night.
- Animals too are sensitive to heat and cold.

E. Write names of :

1. Three animals which regenerate :

2. Three animals which run away from light :

3. Three animals with the ability to smell :

4. Three animals with sensitivity to sound :

Creative Task


Do the following :

1. Touch a moving earthworm with a paper. Observe its response.
2. Heat up an iron rod on a spirit lamp. Heat it till its tip becomes red and bring it close to a cat. Observe how does it respond ?

(Conduct this task under adult supervision. Do not touch the heated rod to the cat. After conducting the experiment, dip the rod in water to get it cool and then bury it in sand or soil).



Investigation :

 For more information about plants, log on to :
en.wikipedia.org/wiki/flehmen-response