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STUDY MATERIAL SCIENCE

CLASS-VII

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▶ Respiration in organisms

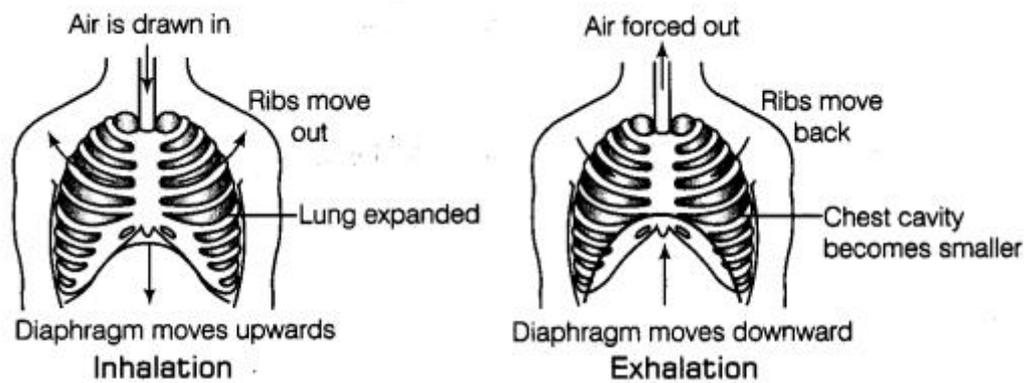
Smoking

Lungs are very delicate organs and essential for breathing, thus keeping us alive. Smoking tobacco in the form of beedi, cigarette or cigar damages our lungs gradually and causes ill health. While smoking, smoke along with chemicals present in tobacco enters our body. These chemicals present in tobacco damages the lungs in many ways like breathing becomes difficult causes lung cancer, heart diseases, etc. Smoking also affects people around smokers as they also inhale air containing tobacco. This is called passive smoking.

The mechanism of breathing involves the movement of the diaphragm and ribcage. The complete process of breathing can be discussed as follows:

Breathing In or Inhalation

When we breath air in (or inhale) two processes occur together, i.e. the muscles between the ribs contract causing the ribcage to move upward and outward, while the diaphragm contracts and moves downwards. This upward and downward movement of ribcage and diaphragm respectively increases the space in the chest cavity and makes it larger. As the chest cavity becomes larger, it sucks air from outside the lungs and lungs get filled up with air and expand.



Breathing Out or Exhalation

When we breathe air out or exhale the reverse process takes place, i.e. the muscles of the ribs relax causing the ribcage to move downward and inward, while the diaphragm relaxes and moves upward. This downward movement of the rib cage and upward movement of the diaphragm decreases the space in our chest cavity and makes it smaller. When the chest cavity becomes smaller, the air is pushed out of the lungs.

Sneezing

The air we inhale contains various types of unwanted particles like smoke, dust, pollen, etc. These particles are allergens. During inhalation, these particles get trapped in the hair present in our nasal cavity. They cause irritation in the lining of the nasal cavity, as a result of which we sneeze. Sneezing expels the foreign particles from the inhaled air so that dust-free, clean air may enter into the lungs.

We should take care while sneezing in that we must cover our nose so that foreign particles expelled during sneezing may not be inhaled by another person nearby us.