

BIOLOGY

Standard

IX



Government of Kerala
Department of Education

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KERALA

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THE NATIONAL ANTHEM

Jana-gana-mana adhinayaka, jaya he
Bharatha-bhagya-vidhata.
Punjab-Sindh-Gujarat-Maratha
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchala-Jaladhi-taranga
Tava subha name jage,
Tava subha asisa mage,
Gahe tava jaya gatha.
Jana-gana-mangala-dayaka jaya he
Bharatha-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!

PLEDGE

India is my country. All Indians are my brothers and sisters.

I love my country, and I am proud of its rich and varied heritage.
I shall always strive to be worthy of it.

I shall give respect to my parents, teachers and all elders and
treat everyone with courtesy.

I pledge my devotion to my country and my people. In their well-
being and prosperity alone lies my happiness.

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Dear children,

The study of science becomes meaningful when you try to know about you and your surroundings in a scientific manner. You have already formed a basic perception of the environment, of biodiversity and of the cell-the casket of life, in the biology lessons of Standard VIII. You might also have got the opportunity to go through myriad modes of study supporting this.

The lessons in Biology for Standard IX develop from the basic idea of how matter and energy drawn from the external environment, are used for various life activities. The text begins analysing the phenomenon of life. This is followed by a discussion on life activities that are a sign of life and on related organ systems. The text culminates reminding us of the need of the awareness of the preservation of life, if life is to sustain on earth.

Though life activities are discussed on the basis of an approach chiefly focussing on human beings, the special features of other organisms are incorporated duly, as well. Thus a mode of study congenial to comprehending closely the phenomenon of life which makes matter and energy its symptoms, and appreciating the variety of life without missing the essence of science, is blended in every chapter.

Wishing you the best in your endeavour to transform your biology classes into workshops by way of critical thinking, sharing your learning experience with friends and joining hands with your teachers.

Regards

Prof. M.A.Khader

Director,
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BIOLOGY - IX

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CONSTITUTION OF INDIA

Part IV A

FUNDAMENTAL DUTIES OF CITIZENS

ARTICLE 51 A

Fundamental Duties- It shall be the duty of every citizen of India:

- (a) to abide by the Constitution and respect its ideals and Institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practice derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wildlife and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievements.
- (k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between age of six and fourteen years.