

# Science & Technology

## Class 6



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## PREFACE

With the spread of knowledge it has been considered important to incorporate new subjects and thoughts in education. Hence, the process of giving a new format to the textbooks according to the present conditions has got underway.

The book 'Science and Technology' for class VI has been written in this context. The purpose of this book is not to load the students with scientific information, but to teach with main fundamental principles of science as a subject.

Science is defined by activities. Hence, it is necessary to pay attention to activities in order to learn and teach science. In this book, we have paid a lot of attention to prove the principles of science through activities and experiments.

This has also been our motive that students should clearly understand the changes occurring around them and that they develop a vision which would inspire them towards discoveries and experiments. Students should develop habits and skills to solve problems and dare to raise questions. This would motivate them to remove confusion, superstition and pessimism.

Right to Education Act 2009 gives emphasis on imparting quality education to children. NCERT, New Delhi has developed class wise, subject wise learning outcomes and pedagogical processes for classes I to VIII which will help to achieve the objectives of all-round development of children. So, textbook for the session 2018-19 have been made contextual and significant which will provide more opportunities to achieve desired outcomes. We hope that textbooks will be helpful for students and teachers to achieve these goals.

We have got help and advice from teachers of different governments and non government schools, professors of colleges and Pandit Ravishankar Shukla University, Raipur, NGOs and learned citizens. We express our heartiest gratitude to all of them.

We request the intelligensia section of the state to kindly send their advice and amendments to the council to bring about the necessary changes in the book.

**Director**

State Council of Educational Research and Training  
Chhattisgarh, Raipur

## INDIA'S GREAT CONTRIBUTION IN THE FIELD OF SCIENCE AND MATHEMATICS

India, since ancient time, has been prosperous in science and from the scientific point of view History clearly depicts that India has contributed a lot to the world. Science, mathematics and technical expertise have been at the base of Indian civilization.

Indian knowledge reached Europe when ancient Indian literature was deciphered in Arabic language. This is even accepted by the European scholars. Let us learn about some Indian scientists who are known for their great contributions to all the world of science and mathematics.

### 1. BODHYAN AND AAPSTAMB

These mathematicians gave numbers from 1 –9 in arithmetic, conceptualized about zeros and established the Decimal system likewise, what we call Pythagoras theorem in geometry had been there thousands of years ago.

### 2. CHARAKA

He was the first doctor who established the theories of digestion and body immune system.

### 3. SHUSHRUT

He was a great doctor. He is known as “Father of Plastic Surgery” in the world. He was not only a physician but a surgeon too.

### 4. KANNAD

He emphasized the indivisibility of the particles of matter (i.e. atoms) that was later on considered as fundamental of science. Famous vedic scholar Sayanacharya first of all calculated the velocity of light.

### 5. ARYABHATTA

He was the first man to postulate that earth is round and it rotates on its own axis as well as revolves around the sun, which gives us the day – night and the seasons. He established the scientific facts based upon which time calculations were done and causes of eclipses were made known. He was the first in the world to calculate the value of  $\pi$ .

### 6. NAGARJUNA

He was a great scholar of chemistry and gave a lot of important information regarding metallurgy and manufacture of medicines in his book ‘Rasratnakar’.

## **7. BHASKARACHARYA**

He wrote a famous book on mathematics called “Leelawati”. He was the first mathematician to say with full confidence that any digit divided by zero becomes infinite. He established gravitational force, spherical shape of earth, distances between planets, astronomical theories and mathematical processes like differentiation, integration and trigonometry.

## **8. SRINIVAS RAMANUJAM**

Born in Tamil Nadu, this mathematician at the age of 15, found new proofs for many old mathematical theorems and formulated many new theorems.

## **9. CHANDRASHEKHAR VENKAT RAMAN**

He got Nobel Prize for the discovery of light related ‘Raman Effect’. He postulated that the nature and behaviour of light changes when it passes through a transparent medium.

## **10. MEGHNATH SAHA**

He explained the order of the occurrence of coloured lines in the area of astrophysics on the basis of ionisation. Which helped astronomers in the study of temperature, pressure and internal structure of Sun as well as other stars.

## **11. HOMI – JAHANGEER BHABHA**

He is known for his contribution in the field of cosmic rays, fundamental particles and quantum mechanics.

## **12. VIKRAM SARABHAI**

His studies on cosmic rays helped to understand the universal (cosmic) magnetism, atmosphere, nature of sun and exosphere (outer universe)

## **13. JAGDISH CHANDRA BOSE**

He discovered sensitivity in plants and invented several sophisticated instruments. Cresco graph is one of them. Rate of plant growth is calculated using this instrument. He also invented the ‘wireless’.

## **14. HARGOVIND KHURANA**

He was the first to develop a functional artificial gene in the laboratory, which was in no way less than a natural gene. For this work he shared a Nobel Prize in the field of medical science.

## **15. SHANTI SWAROOP BHATNAGAR**

He made fundamental contribution to the field of magnetic chemistry apart from emulsions, colloids and to the field of industrial chemistry.

In ancient India, science of electricity (D.C. Current), aeronautics, textiles, metallurgy, architecture, mechanical engineering and urban development studies also developed. In this way we see that Indian Scientists by their distinguished contribution have brought pride to India at the International level in the fields of mathematics, physics, chemistry, geography, medical science, technology etc.

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