





# Science Around Us Practice Book for Students

## **Central Board of Secondary Education**

In collaboration with



### Preface

### **Dear Teachers**

The Central Board of Secondary Education, in its ongoing journey to improve the quality of education, has developed the present set of resource books of Science for Classes 6-10 titled Science Around Us - Practice Book for Students. These workbooks, focusing on key scientific competencies, have been developed by CBSE in collaboration with ThinkTac.

The resolve of the National Education Policy (2020) to make education more meaningful and relevant finds expression in the Board's continuous endeavour to shift focus from rote learning to development of competencies. Development of competencies would equip students with key 21<sup>st</sup> century skills as envisioned by NEP (2020).

The practice books present a series of questions organised as themes, mapped to concepts from the curriculum of the respective class. Each theme has multiple case studies describing a real-life situation. The questions following the cases require students to recall and apply concepts learnt in the curriculum. Implicit in it is the ability to interpret scientific data and draw inferences. As students engage with this resource material, they would not only strengthen scientific skills and competencies but also appreciate the relevance and applications of the concepts studied in the natural contexts. The workbooks are designed to help learners develop the ability to translate a real life problem as a science problem, recall and apply scientific processes and tools, interpret the results and draw inferences. Dialogue and collaboration with peers and teachers as students work on the theme would facilitate a deeper understanding.

Most real-life situations involve multiple concepts, often across academic subjects and classes. As the workbooks are based on exploration of real-life scenarios, a few questions may be from the curriculum of a lower or higher class. Adequate background information is provided in such cases.

We welcome feedback for further improvement.

**Team CBSE** 

### About CBSE

The Central Board of Secondary Education (CBSE) is a national Board under the Ministry of Education, Govt. of India. The Board has more than 28,000 schools affiliated to it in India and overseas. These include the Kendriya Vidyalayas, the Jawahar Navodaya Vidyalayas, Central Tibetan Schools, schools run/aided by the State Governments and private independent schools. The Board's main objective is to foster a conducive environment in schools that encourages quality education and focuses on the holistic development of children. Through progressive and innovative pedagogies, relevant to the various contexts in India, the CBSE motivates schools and teachers to adopt child-centric enquiry-based techniques that allow children to achieve academic excellence.

### About ThinkTac

ThinkTac is a social enterprise that integrates experiential learning and 21<sup>st</sup> century skill development into the academic curriculum to empower a learner to build skills that enables her/him to excel in life. ThinkTac offers STEM learning programmes, integrated with I – X grade curriculum and 21<sup>st</sup> century competencies offering material kits, resources and teacher empowerment to schools.

The programmes are built on a foundation of hands-on activities - built using simple, repurposed materials offering incredible scope for building, rebuilding and tinkering, which fosters creative, problem-solvers of tomorrow. This supports children to create, experiment, tinker, innovate and learn, mastering concepts and developing competencies needed to thrive in the 21<sup>st</sup> century, enabling them to choose their life purpose.

### Copyright © 2022 by CBSE and ThinkTac

This book is licensed under the Creative Commons Attribution CC-BY-NC License and may not be used for any commercial purpose.

### Acknowledgements

### **Advisory Inputs**

• Ms. Nidhi Chibber, IAS, Chairperson, Central Board of Secondary Education.

### **Guidance and Support**

• Dr. Joseph Emmanuel, Director (Academics), Central Board of Secondary Education.

### **Co-ordination**

• Dr. Sweta Singh, Joint Secretary (Academics), Central Board of Secondary Education.

### **Content Development**

- Dr. Procheta Mallik, Principal Scientist, ThinkTac
- Sh. Vishal Bhatt, VP, Products, ThinkTac
- Sh. Rajesh S, Educator & Content Developer, ThinkTac
- Ms. Deepa Aditya, Educator & Content Developer, ThinkTac
- Ms. Vindhya Rai, Educator & Content Developer, ThinkTac
- Sh. Kailash N R, Educator & Content Developer, ThinkTac
- Ms. Divyashree HB, Educator & Content Developer, ThinkTac
- Ms. Shruti Sharma, Content Developer, ThinkTac
- Sh. Ravi Rangan, CEO, ThinkTac

### **Content Review**

- Dr. Sweta Singh, Joint Secretary (Academic), CBSE, Academic Unit, New Delhi
- Dr. Pratibha Kohli, Principal, Maharaja Agrasen Model School, Pitampura, New Delhi
- Ms. A P Shreelatha, PGT (Physics), Bal Bharati School, Brij Vihar, Ghaziabad
- Ms. Molina Sewal, TGT (Biology), Sanskriti School, Chanakyapuri, New Delhi
- Ms. Manju Batra, HoD (Science), Suncity School, Sector 54, Gurugram, Haryana

### Contents

Preface	2
Acknowledgements	4
Theme 1: Is Matter Around us Pure?	6
Theme 2: The Fundamental Unit of Life	20
Theme 3: Motion	31
Theme 4: Force and Laws of Motion	41
Theme 5: Gravitation	51
Theme 6: Work and Energy	62
Theme 7: Natural Resources	71