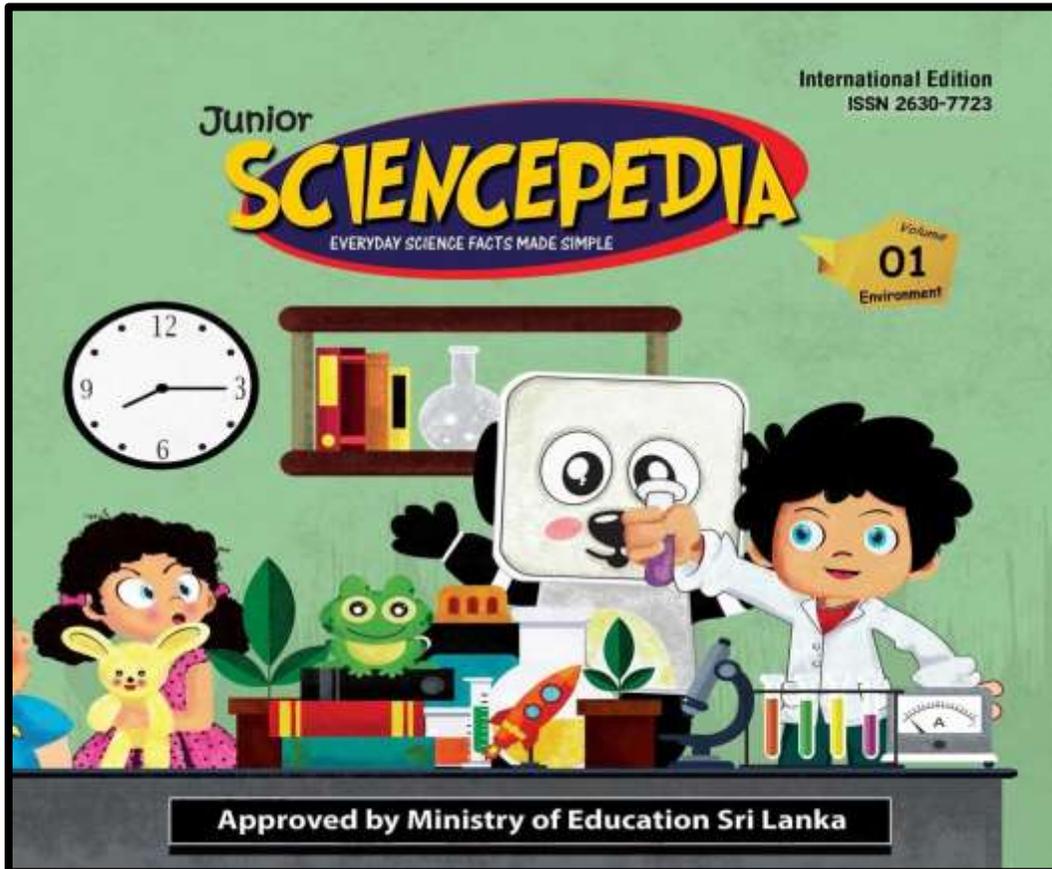


An Introduction and a guide to Learning with Sciencepedia



The purpose of Sciencepedia is to inculcate the habit in students to acquire practical understanding and real-life experience of science and the English language. To achieve these two goals the Sciencepedia comic-book series combine the Flipped Classroom learning strategy and the BDA (Before, During and After) learning strategy.

These strategies allow students to learn through hands-on, practical and extracurricular activities. Sciencepedia's BDA method in parallel with the flipped classroom method helps a student to acquire a certain level of knowledge about the school subject matters prior to discussion in the classroom. Learning beforehand will allow students to gain the most out of learning in the classroom. With regard to the learned material that improved learning can be geared towards developing higher skills such as analysis, inquiry and creativity outside the classroom. Therefore, it is highly recommended to encourage students on reading the specific Sciencepedia volume related to a lesson both before in-class discussion and at after-classroom study at home.

Since learning with Sciencepedia enables pre-acquisition of scientific knowledge learned at school, the book can also be incorporated in the school lesson plan to improve teaching. With Sciencepedia, the teacher can follow multiple strategies to improve student learning. Some approaches are as follows:

1. During a science lesson, the teacher should remind the students about the related Sciencepedia episode.
2. Use the same or a similar practical example to illustrate a scientific concept in the classroom as present in the Sciencepedia volume.
3. Recollect the memories about Sciencepedia lessons by incorporating them into classroom teaching using characters and images of Sciencepedia, preferably through the digital techniques.
4. Recurrently link the learned scientific concepts to Sciencepedia.
5. Conduct short question and answer sessions and refer Sciencepedia to confirm and recollect the acquired knowledge.

On the other hand, Sciencepedia is a tool to learn English language skills. The comic-book teaches science using simple English language and relatable child characters. This model of reading and learning is used in Sciencepedia to naturally improve the English skills of students.

The English teacher can practice some of the following methods to improve the English skills of students using the Sciencepedia volume:

1. The English teacher should use Sciencepedia in the classroom to improve comprehension of simple dialogues.
2. Students should be trained in small groups to perform the characters of Sciencepedia.
3. If possible, students should be guided to perform similar characters on the English day.
4. Students should be encouraged to read Sciencepedia stories at home.

The above strategies to learn science and English using Sciencepedia can be helpful at improving the below-mentioned learning outcomes. The students:

- 1) Showcase an increasing appeal to learning science.
- 2) Demonstrate an improved understanding of science concepts.
- 3) Learn to communicate using English.
- 4) Improve their interest in reading English language writing.

Furthermore, the following activities can be employed to evaluate the learning of Science and English language of students.

Evaluate the learning of Science

1. Hold competitions among small student groups to assess their knowledge base.
2. Test the students' ability to convert different scientific ideas into a small comic-book.
3. Evaluate the knowledge acquisition of students with monthly tests and non-informed tests.
4. Examine the quality of students' knowledge based on term-end tests.

Evaluate English language learning

1. Access the pronunciation of English words and level of English proficiency.
2. Engage in dialogue-based activities that tally with the story.
3. Employ an activity to create a small comic-book.
4. Evaluate the knowledge acquisition of students with monthly tests and non-informed tests.
5. Examine the quality of students' knowledge based on term-end tests.