

MY SCIENCE IN MY BOX – STREET LABORATORY

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Shri Dhaval Patel holds an MA degree. He was appointed as a teacher in Dholakada Primary School in September 2003. He has 16 years of experience in primary education. Dhaval noted due to the shortage of teachers in the school, the students could not get the required attention and as a result, their basics in academics were very weak. As a result, their interest in studies was low, especially in subjects like Mathematics and Science. He felt that he could bring about a change and plug gaps in knowledge by focussing on the practical aspect of Science and not just focus on theory.

To increase interest in Science, Dhaval developed a Science in My Box (of “Street Laboratory”) to motivate the children with the aim to give practical context to the theory. However, shortage of tools was a problem and so he begs to collect whatever he could from his colleagues and friends. The next problem he faced was of storing them in the school premises and as a result, students would find it difficult to locate the tools when they had to conduct experiments. To find a solution to the problem, he approached the district’s science teachers’ forum for suggestions. Based on their suggestions, Shri

Patel organized the resources textbook chapter-wise in plastic bags and this process continued for some years. In 2017, with the guidance of the CRC Coordinator and science teacher Ms Kiranben Patel, and the assistance of students of standard 6 to 8, chapter-wise “experiment boxes” were created for every class.

The idea behind these experiment boxes was to systematically collect resources so students could easily access them and spend time constructively in conducting experiments rather than waste time on finding materials. Apart from the resources, the boxed also contained instructions to conduct the experiments.

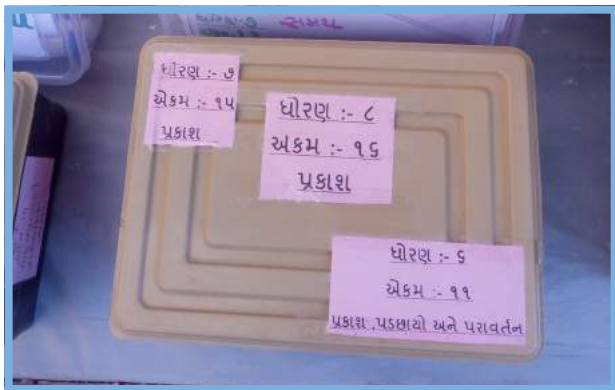
All the tools for conducting the experiments for Standard 5 to 8, along with instructions, methods and observation for each experiment are kept in the box. The details of each instrument are provided during the prayer assembly to ignite the students’ interest. Moreover, the name of the experiment is written on each box so the children’s teams can use them independently without any confusion.

The box also contains a list of precautions to be taken while conducting the experiments.



Children doing scientific experiments





Science tools box



Children experimenting on the street

The children demonstrate the experiment once every month. They also enthusiastically narrate and inform their families and neighbours about these experiments.

The teachers took note of the difficulties, if any, encountered by students while conducting the experiments on their own, and provided appropriate solutions. In case a tool in the box did not meet its purpose, it was replaced. The boxes were presented in a Science Fair in 2018 as well as an Innovation Fair. During the nights, the villagers were also provided a demonstration of the experiment boxes. However, the schools could not sustain this activity for long as it was difficult to allot time that was suitable to everyone. Besides, there were the issues of seating arrangements and lack of street lights. The villagers' help was then sought and all issues were resolved.

Shri Patel's work was recognized by IIM Ahmedabad and then by the Nehru Science Centre, Mumbai.

As a result of his efforts, the term-end examination results in Science improved; the results of the unit tests conducted by the school also saw a marked improvement. Children's

interest in Science grew and those in the lower classes (below Class 5) also began to show interest in the experiments.

The added benefits of the activity are that children now have something constructive to do and they don't waste their time watching TV or playing on their mobiles. Besides, they have also conquered their fear of Science. The school has witnessed an increase in attendance.

Shri Patel's academic innovations have found place in the Innovation booklet published at the district and as well as the state level. His work was also used as a case study in Samarth online professional development of teachers by IIM Ahmedabad. Teachers in about 25 schools are using this method to impart lessons in Science. Shri Patel is now the key resource person at the state level and also a master trainer at state-level science training. His teaching methods and innovations are shared on various teachers' WhatsApp groups.

Teachers, parents and students have welcomed this way to teach Science. The C.R.C and the B.R.C have shown much appreciation for the activity during the school visits and also offered their suggestions to further improve it.



QUESTIONS FOR TEACHERS

1. What other activities can be done for children besides experimenting in science?
2. What study activities would you like to do in the classroom to make children interested in science?
3. What are the things you should keep in mind so that children can identify and experiment with every tool in school?

QUESTIONS FOR TRAINEES

1. What are the things to keep in mind while experimenting with children in the laboratory?
2. What activities will you do to increase the practical knowledge of children while teaching science subject?
3. What extracurricular activities would you do to help children develop reasoning skills?