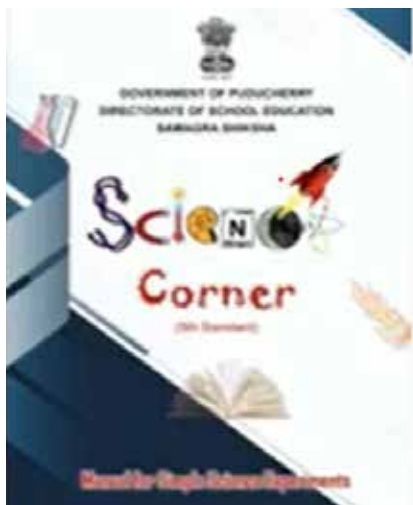


Science Corner in Primary Classrooms

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The Science Corner Manual is an initiative which is prepared and distributed by the UT of Puducherry to improve the attainment of learning outcomes in the subject of environmental studies for primary-level students and to develop attitudes towards the subject. This manual includes the guidelines for the

installation of a Science Corner in the classroom, a list of experiments that can be conducted in the classroom (under adult supervision), a list of local shops where teachers or the school authority could buy the material needed to conduct the experiments, teacher's role while conducting the experiments, safety measures to be taken while conducting the experiment, etc.

There are 48 simple science experiments, which explain concepts like evaporation, air pressure, surface tension, condensation and many more.

For example, one of the experiments is on the principle of attraction between the same molecules and the surface tension of water. Material required for the experiment is a glass tumbler with water, any food colour, a plate and six plastic coins. Instructions are as follows:

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1. Take a glass tumbler and fill it with water. You can add any food colour (optional).
2. Cover the mouth of the tumbler with a plate.
3. Invert the setup and place it on the table.
4. Carefully, insert one coin between the mouth of the tumbler and the plate. Slowly, insert two more coins at an equal distance.
5. Now we can notice a space between the water and the plate, but the water is not flowing out through this space.

REASON

The molecules of the water are tightly bonded. This force is known as 'cohesive force', that is, the attraction between the same molecules. This force helps the water molecules to attract each other and the outside air tries to enter and block the space between water and plate.

NCERT, New Delhi, conducted a National Achievement Survey across the country (2017) to assess to what extent the learning outcomes have been achieved in the subject of language, mathematics, and science for the students belonging to III, V and VIII standard. As per the state and district level report card of Puducherry, it was noticed that students' performance in the subject of science was less than the national average.

In order to improve the state of affairs, a series of workshops at the

state, district, and school levels were conducted by the State Project Office, Samgra Shiksha. Through these workshops, the teachers of science suggested that in order to improve the learning outcome in the subject of science some intervention is needed at the primary level. A suggestion of establishing Science Corners in schools and developing a manual for the same was proposed to the MHRD by the committee. This committee included a group of science teachers who have participated in the national, state and district-level science exhibitions and some of them have been a part of the National Children's Science Congress and Indian Science Congress. This committee had suggested guidelines for establishing a Science Corner in the government schools of Puducherry.

Features of Science Corner

As per the guidelines, the Science Corner would be a corner (place) in the classroom that would be easily accessible to children as well as the teachers. That place should have adequate space in order to conduct small experiments in the classroom. The equipment/articles for simple experiments may be kept on the table/shelves/racks with easy access. The Science Corner may have proper lighting and ventilation. It should have a good collection of articles to serve the need and interests of children. Teachers shall equip the corners with simple equipment/articles/experiments/materials/posters/local

available resources for children to do the activities with the help of teachers. Posters related to environmental Science may be displayed in the corner. Notice board (whiteboard/flannel board/bulletin board) may be installed in the Science Corner for showcasing the news articles and scientific facts. Manuals of the simple experiments may be kept in the Science Corner.

GUIDELINES TO SET UP SCIENCE CORNER

For establishing the Science Corner, a committee had been constituted under the chairmanship of the director of Samgra Shiksha for framing the guidelines. These guidelines were framed based on some key points; how to make a Science Corner, where to set it up and what safety measures to be taken while conducting the experiments.

- A committee has to be constituted in the school, for the purchase of articles for the setting up of Science Corner. The committee members shall comprise head of institution, two teachers (preferable science background) and one SMC member.
- Teachers shall equip the corners with simple equipment/articles/experiments/materials/posters/local available resources for children to do the activities with the help of teachers.
- The teachers shall monitor the children while doing the activities with the help of the observation notebook

(proforma annexed). The head of institution shall monitor the observation notebook on a weekly basis.

- Safety of children should be the top priority while setting up a Science Corner.

The following factors shall be followed for the safety and security of the children

- Experiments with chemicals shall be done under the supervision of the teacher concerned.
- Electrical circuit connection from the switchboard must be avoided. Dry cells/batteries may be used for electrical experiments.
- Sharp objects or cutting tools or small objects shall be handled carefully under the supervision of teachers.
- Simple fire experiments (lamp/matchbox/candle) may be done under the supervision of teachers. While doing fire experiments, a bucket of sand and water shall be kept near the Science Corner.
- All hazardous and harmful materials shall be kept in a locked box when not in use.
- In general, all safety precautions may be taken.
- The Head of the institution/teachers shall ensure the safety of the children.

- Give opportunities to children to perform the activities on their own or in groups and appreciate the experiments developed by them.
- Encourage children to identify various elements of 3D/2D objects.
- Showcase children's exhibits at community events.
- In addition, the schools may organise Science Fairs or Exhibitions to foster scientific temper among the children.
- The Head of the institution or teacher shall contact core committee members of the Science Corner for guidance and support.
- The core committee shall assess the activities of Science Corner and the best Science Corners will be awarded.

SCIENCE CORNER MANUAL

The committee had prepared nearly 48 simple science experiments, which explain the concepts like evaporation,

air pressure, surface tension, condensation and many more. It includes URL links to short videos which would help the teachers as well as the students to understand how to conduct simple science experiments and supplementary videos showing Tangure temple for shadow formation, Hampi temple for the pinhole camera in order to develop scientific temperament among students. The manual also includes various examples stating the idea of the existence of various scientific phenomena in our daily life. In this way, the manual helps in developing curiosity and observation skills among students.

The manual also has links and QR code giving direct access to a YouTube channel started by the education department of Puducherry. These videos are uploaded to facilitate teachers as well as the students, enabling them to conduct the experiments with ease (in the case of students, they are advised to conduct experiments under adult supervision).