

**Basic Electricity**

* *Wiring of Computer room*
* *Adwaita Vartak*

*Open Education Resource*

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**Productive task1: Purchasing of Wiring Materials**

Understanding of Quotations, Estimates, Costs.

This phase should essentially start with understanding the need for wiring equipment, as related to a particular project or activity going on in the school.

**How should Teachers go about teaching this subject?**

1. List out material requirements. For example: 10m of copper wires, 5 switch boards, 10m of plastic cover strips.
	1. Teachers should keep this in mind: Optimum Estimation of Materials required, keeping in mind approximate cost and approximate need. Focus should be on optimization and minimal wastage.
2. Allotment of Responsibility: The student group should be broken up into small groups, with each group given a responsibility of what to purchase. For example: a group of 2 boys and 2 girls will purchase all the plastic lining sheets.
	1. Teachers should keep this in mind: Equal distribution of girls and boys to best possible scope. Teachers must explain to the groups their responsibility, and lead them in the right direction, towards stores.
3. Estimates and Quotations: Each group is to make a detailed list of required materials, and is to approach at least 3 different vendors to gather quotations.
	1. Teachers should keep in mind: Students should visit a certain minimum number of stores to form a fair comparison. Also the list of materials required must be kept same to achieve a fair comparison. Differences in quality, brand etc must also be noted and detailed.
4. Comparing Quotations: Of the quotations collected from stores, each is compared to find the best possible option, keeping in mind cost, quality, brand, safety, and longevity.
	1. Teachers should keep in mind: Each quotation must be carefully analyzed, and a system of analyzing and giving values to each parameter of cost, quality, safety etc could be devised.
5. Bills Generated and Analyzed: Once the purchases are made from the stores, the bills are collected, documented and analyzed.
	1. Teachers should keep in mind: Each bill from each group must be collated together, and concepts of tax, bill structural layout, costing etc must be highlighted. Also the original estimate of the group and the final actual cost must be compared to see where the rise or fall occurred.
6. Reflective Piece: Students would write a reflective piece about their experiences in the buying of the materials, their opinions, views, suggestions, questions etc must all be highlighted. This can be done in their mother tongue.
	1. Teachers should keep in mind: Each student may have had a different experience, or at least a different perception of the same experience. Teachers should encourage students to express themselves freely so that they begin to reflect on their own experiences.

**Subjects that could be covered in this activity:**

1. **Mathematics**: Estimation, Length, Cost-estimation, Valuation, Taxation, Percentages.
2. **Economics**: Cost of Materials, Branding, Taxation, Market Forces, Budgets.
3. **Science**: Materials/ Elements present in the items. Uses (apart from these) of Copper, Rubber, Plastic, etc. How are these materials produced, to give us this finished product?
4. **Language**: Writing the reflective piece in the mother tongue and then translating other’s work (each student is given another student’s piece to translate into English) can be useful. Expression, writing skill, Reading skill, ability to assume meanings and ideas in another person’s writing.
5. **Social Science**: Societal makeup of the market place. Issues of class, caste and gender in the marketplace. Growth of the market as the hub of economic as well as other forms of activity. History of wiring manufacture in the area (taken from oral history from store owners etc) Where are these materials produces locally (if they are not produced locally, the history of long-distance goods transportation can be understood)? Etc

**Probing Questions and Suggestions the teacher can use to initiate the interest from the students:**

What is the best kind of wire in the market? Keeping in mind, cost, quality, safety, sustainability (ECONOMICS, MATHEMATICS)

What Contributes to the cost of materials? Why are some things more expensive than others? (ECONOMICS, SCIENCE, MATHEMATICS)

What are the major raw materials required in wiring? Where and how are they produced? (SCIENCE, GEOGRAPHY)

What are the names of important materials in your own language? Are these English words or words from your local language? (LANGUAGE, SCIENCE)

What are the major learnings from such a shopping experience?