

Module: Learning Resources in Science Teaching

(For B.Ed. Students)

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1. Introduction

Science teaching is most effective when learners actively **observe, explore, and experiment**. Learning resources play a crucial role in making abstract concepts concrete and engaging. They provide **visual, auditory, and experiential support** to classroom teaching.

2. Meaning of Learning Resources

Learning resources are all the **materials, tools, and aids** (both human and non-human) that support the teaching-learning process. They make learning **interesting, interactive, and meaningful**.

3. Importance of Learning Resources in Science Teaching

- Make abstract scientific concepts easy to understand.
 - Promote curiosity, observation, and experimentation.
 - Provide real-life connections to scientific theories.
 - Support activity-based and inquiry-based learning.
 - Enhance memory and retention through visualization.
 - Motivate learners and reduce classroom monotony.
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4. Types of Learning Resources in Science Teaching

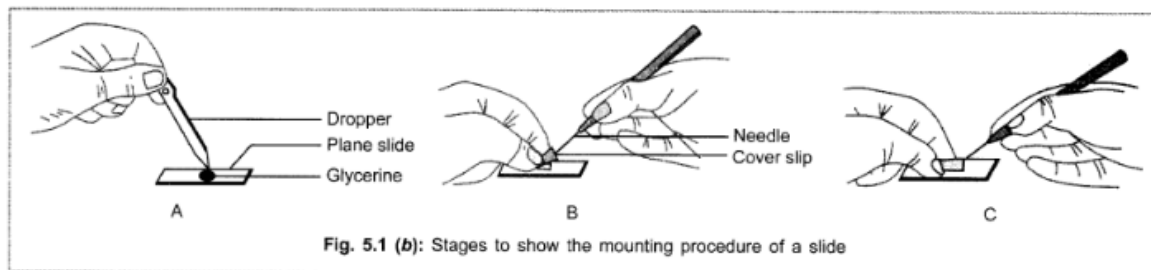
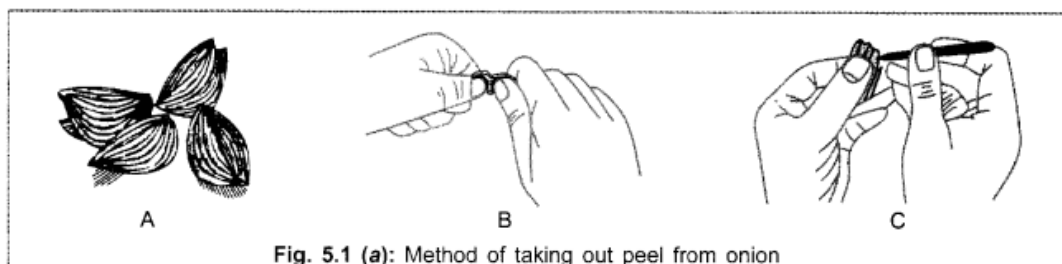
A. Traditional Resources

- **Blackboard/Whiteboard** → Drawing diagrams of cells, circuits, chemical structures.
- **Charts & Posters** → Human digestive system, Photosynthesis cycle.
- **Models** → 3D model of DNA helix, Human heart model.

(Illustration: A teacher showing a 3D heart model to explain blood circulation.)

B. Laboratory Resources

- **Instruments** → Microscope, Test tubes, Bunsen burner.
- **Specimens** → Plant leaves, Frog for dissection, Insect collection.
- **Experiments** → Chemical reaction demonstration, Physics experiments on motion.



C. Community & Natural Resources

- **Field Visits** → To Science Museum, Botanical Garden, Weather Station.
- **Local Environment** → Riverbank for studying soil/erosion, Market for food preservation study.
- **Resource Persons** → Scientists, doctors, or local farmers invited as guest speakers.



D. ICT-Based / Digital Resources

- **Multimedia Presentations** → Animated videos on Solar System, Digestive system.
- **Virtual Labs** → Online simulations of chemical reactions.
- **Interactive Apps** → PhET simulations for Physics, Augmented Reality apps for anatomy.
- **Smart Classrooms** → Using projectors and digital boards for experiments.

Newton's laws

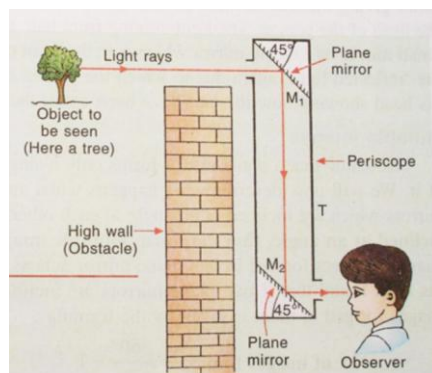
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Online Simulation



E. Improvised / Low-Cost Resources

- **Home-made Models** → Volcano model using baking soda & vinegar.
- **Everyday Objects** → Torch for reflection/refraction, Plastic bottles for water cycle demo.
- **Waste Materials** → Using cardboard, bottles, and wires to make simple electric circuits.



5. Guidelines for Effective Use of Learning Resources

1. Choose resources that match lesson objectives.
 2. Ensure resources are age-appropriate and safe.
 3. Encourage hands-on participation by students.
 4. Integrate traditional, digital, and community resources.
 5. Provide follow-up discussion and assessment.
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6. Conclusion

Effective use of **learning resources in science** transforms classrooms into **activity-based laboratories of discovery**. A good science teacher should skillfully combine traditional, laboratory, community, ICT, and improvised resources to make science **interesting, relevant, and learner-centered**.