Comprehensive Study Notes: Curriculum and Pedagogy of EVS for Primary Level

1.0 Introduction: Core Approaches to Teaching EVS

These study notes provide a comprehensive overview of the essential approaches, methods, planning strategies, and resources for effective Environmental Studies (EVS) teaching at the primary level. Based on Block 2 of the D.El.Ed. curriculum, "Curriculum and Pedagogy of EVS," this guide is designed to help student-teachers master the pedagogical skills necessary to create engaging and impactful learning experiences.

The core philosophy emphasized by the National Curriculum Framework (NCF) 2005 is a constructivist, student-centered, and experiential approach to learning. This framework advocates for moving beyond traditional "chalk and talk" methods to actively involve learners in constructing their own knowledge. This unit covers two key approaches that embody this philosophy: Activity-Based Learning and Cooperative Learning.

The importance of engaging every child in the learning process cannot be overstated. An effective EVS classroom is an inclusive, lively, and comfortable space where every student can participate and showcase their talents. For example, the teacher Meeta creates this environment by providing worksheets that guide students to observe insect life in the school garden, allowing each child to explore and record their findings. Similarly, the teacher Amrut initiates a lesson on making pots by having children work with clay, an activity where every student, regardless of physical ability, can be creative and learn collaboratively. These examples illustrate how to foster an atmosphere where learning is a shared, joyful, and hands-on experience.

2.0 Unit 5: Key Approaches for Teaching and Learning EVS

2.1. Activity-Based Learning (ABL)

Activity-Based Learning is a process that actively involves learners in the construction and reconstruction of knowledge based on their individual experiences. This approach is highly effective for achieving core EVS objectives, such as developing curiosity, fostering awareness about the surroundings, and building skills of observation, information collection, and creative expression.

Characteristics of a Good EVS Activity

- Be linked clearly to at least one of the learning objectives of EVS.
- Be real-life based and enjoyable for the students.
- Be safe for the students.
- Not take a very long time to complete; longer activities can be divided into smaller parts.
- Be appropriate for the age group of students.
- Awaken interest, curiosity, provide meaningful information, and create a self-directed learning process.
- Focus on the experiences of the child.
- Involve all students.

Sample EVS Activities

- **Encouraging children to bring in and share their personal context and experience.**
    - **Class III (The Story of Food):** Creating a table of who does what work in their house.
    - **Class IV (Going to School):** Asking questions like "Can you ride a bicycle? If yes, who taught you to ride?"
    - **Class V (Like Father Like Daughter):** Asking "Is your hair like that of anyone else in your family?"
- **Encourage children to talk to parents, and elders and community members to find out and collect information.**
    - **Class III (Games We Play):** Finding out from elders what games they played as children.
    - **Class IV (Changing Times):** Talking to grandparents about where they lived and if they had a toilet in their house when they were young.
    - **Class V (What If It Finishes?):** Finding out from elders what was cooked at home when they were young.
- **Encouraging children to go to different sites in the neighbourhood to observe, record, interview and investigate and submitting a report.**
    - **Class III (Flying High):** Bird watching and recording observations.
    - **Class IV (Changing Times):** Visiting a construction site and interviewing personnel.
    - **Class V (A Treat for Mosquitoes):** Checking and investigating the school campus for mosquitoes.

Four Steps to Organizing Activity-Based Learning

Mastering the sequence of these four stages is essential for both classroom execution and exam purposes.

1. **Planning:** This foundational stage involves identifying the specific EVS learning objectives, arranging all necessary materials and learning resources, and developing a plan for post-activity discussion (debriefing).
2. **Conducting the Activity:** The teacher acts as a facilitator, initiating the activity by clarifying its purpose, proceeding by ensuring all children are meaningfully engaged, and ending the activity in a way that consolidates the key learnings and connects them to the curriculum.
3. **Evaluating the performance:** This step focuses on assessing student learning. The teacher evaluates whether the learners achieved the intended EVS objectives through the activity and whether their understanding has deepened.
4. **Reflecting on the process:** This is a crucial step for the teacher's professional development. The teacher reflects on what worked well, what could be improved, and

why. These reflections are invaluable for improving the design and execution of the activity for future use.

Advantages of Activity-Based Learning

- Helps to clarify abstract concepts through practical experience or demonstration.
- Fosters better understanding and contextualization by applying principles to familiar situations.
- Provides an opportunity to use multiple senses (seeing, hearing, touching, etc.), which increases retention.
- Integrates multiple teaching methods, maximizing creativity and flexibility.
- Focuses on learning from the child's perspective rather than an adult's.
- Facilitates the process of 'discovery' and builds self-esteem.
- Teaches a variety of life skills in addition to the subject content.

2.2. Cooperative Learning (CL)

Cooperative Learning (CL) is a pedagogical approach that organizes students to work in groups towards a common goal or shared task. As defined by experts like Brody, Davidson, and Jacobs, it emphasizes learning through teamwork, where success is achieved through interdependence and individual contributions are held accountable.

CL is particularly well-suited for EVS because they share common values. EVS and CL both encourage teachers to:

- Appreciate the social context of learners.
- Value diversity as critical for a democratic society.
- Help children value cooperation.
- Go beyond the boundaries of a single subject.
- Empower young learners.

Academic and Social Benefits of Cooperative Learning

When implemented responsibly, CL supports academic progress and improves the social skills of young learners. It creates an environment where success belongs to the whole class, not just an individual. For example, in the lesson on 'Travel,' the teacher Kiran uses a 'pair-share' technique. Students first gather information individually about a recent trip taken by a family member, then pair up with a partner to share and complete a team task. This sharing encourages joint responsibility and builds a collaborative learning atmosphere.

Three Core Principles of Cooperative Learning

- **Positive Interdependence:** This is achieved when group members share a common goal, common resources, and a common identity (e.g., a group name). The focus is on helping and encouraging one another.

- **Individual Accountability:** Each member must have a specific task to contribute, while the group as a whole is responsible for the final outcome. This ensures that every student participates and is accountable for their part of the work.
- **Equal Status Interactions:** The teacher, as a facilitator, must ensure that all students treat each other with respect. This requires sensitivity and skillful management to create an environment where every child's contribution is valued.

Advantages of Using Cooperative Learning for EVS

- It provides learners the opportunity to explore multiple viewpoints on an issue.
- It enhances analytical thinking and problem-solving skills.
- It helps students develop interpersonal skills, conflict management, and decision-making abilities.
- It enables learners to react differently yet appropriately in various situations, reflecting the local context that is central to EVS.

Challenges in Cooperative Learning

Effective CL requires detailed planning by the teacher to define objectives and establish clear curriculum links. The teacher's role shifts to that of a facilitator who must constantly probe, ask questions, and guide the groups to ensure they remain engaged in meaningful work. This demands a strong understanding of the subject matter and the real-life issues connected to it.

3.0 Unit 6: Effective Methods for Teaching and Learning EVS

This unit details several methods for transacting the EVS curriculum. For exam purposes and effective teaching, it is critical to understand the specific steps, advantages, and limitations of each method.

Synthesizing Methods for a Dynamic Classroom

It is crucial to recognize that these methods are not mutually exclusive. An effective EVS lesson often blends several methods into a cohesive learning experience. For example, a **Visit for Learning (Field Trip)** naturally incorporates the **Observation Method**. The post-trip activities could then involve **Creative Expressions** (drawing what was seen) and **Small Group Discussions** to share findings, culminating in a **Project** to solve a problem identified during the visit. This integrated approach creates a richer, more dynamic, and more impactful learning environment.

3.1. The Observation Method

Observation is a fundamental method of learning and understanding in EVS. The title of the NCERT textbook series, 'Looking Around,' underscores this principle, highlighting that EVS is about observing, exploring, and discovering the world.

Four Steps for Using the Observation Method

1. **Planning and preparation:** The teacher must decide what settings, activities, or environmental traits will be observed and prepare necessary tools like worksheets or checklists.

2. **Actual Observation:** The teacher and students carry out the observation using the planned techniques, depending on the purpose and available resources.
3. **Analysis and Interpretation:** The information and data recorded during observation are closely analyzed to derive necessary interpretations and learnings.
4. **Generalisation of the Results:** The interpretations are used to establish generalized facts, opinions, or principles related to the EVS topic.

Advantages of the Observation Method

- Encourages children to explore their immediate environment.
- Develops critical observation skills.
- Encourages students to see, think, and establish connections.
- Helps students infer similarities and differences.
- Provides knowledge acquired from real and concrete situations.
- Satisfies and develops the natural curiosity of students.

Example: My Bird Book

This activity guides students through a structured observation process:

1. Students go out to observe different birds, noting variations in color, size, and other features.
2. They identify basic features like beak, wings, tail, and feet.
3. The teacher shows them how to draw these features using simple diagrams.
4. Students draw the birds they observed.
5. They color the diagrams to be as accurate as possible.
6. Finally, they stick all the drawings in a scrapbook to create "My Bird Book."

3.2. Creative Expressions

Creative expression is any expression by children that contains an element of novelty. It is a powerful tool for engaging students and can take various forms:

- **Writing:** Poetry, songs, stories, or essays.
- **Graphic Arts:** Drawing, painting, collages, sculptures, or posters.
- **Music:** Creating or responding to songs with environmental messages.
- **Movement and Dance:** Non-verbal expression of thoughts and feelings.
- **Puppetry:** Transforming environmental messages into engaging performances.

Importance of Creative Expression in EVS

- **Creativity Stimulates Learning:** It encourages divergent thinking, where students think independently, become more open to new ideas, and are keen to explore concepts for themselves.
- **Creativity in response to social, cultural and environmental issues:** It helps develop problem-solving and critical thinking skills, preparing younger citizens to generate new ideas and act together to transform society.
- **Creativity enhances ability to manage change:** In an increasingly complex world, creativity helps children learn to take risks, exercise choices, and respond positively to challenges and responsibilities.

Tips for Facilitating Creative Expressions

- Promote creative expression in small groups to help children overcome inhibitions.
- Provide choices of creative mediums (visual arts, drama, music) based on student interests.
- Encourage teamwork while giving individual attention.
- Create a non-stressed, non-competitive atmosphere.
- Build self-confidence and creative thinking skills.
- Create a fun-filled learning environment.

3.3. Small Group Discussions

Small group discussions are a technique where learners discuss an environmental issue in peer groups. This method is effective for developing analytical and communication skills, as students share ideas, consider different viewpoints, and reflect on solutions.

Technique Example: Buzz Groups A buzz group is a small group (3-6 people) given a specific issue to discuss and a task to complete in a short time, reporting their output back to the larger group. This is a highly efficient way to generate ideas quickly from the entire class.

Steps to Organising Small Group Discussions

1. The teacher organizes the class into small groups of 4-6 members.
2. A problem, statement, or question is announced to the groups.
3. Groups are given 10-15 minutes for discussion, where each member shares their view.
4. Each group spends a few minutes consolidating and recording the key points and ideas generated.
5. A representative from each group reports the findings to the entire class.

Appropriateness for EVS

- **Breaks Subject Boundaries:** A discussion on a topic like pollution can naturally bring in social, economic, and political aspects, reflecting the multidisciplinary nature of EVS.
- **Respects Diversity:** It allows different viewpoints based on varied beliefs, cultures, and contexts to be shared, teaching children to appreciate diversity.

- **Develops Divergent Thinking:** The process encourages reflective thinking, listening skills, and the ability to generate multiple possibilities and "out-of-the-box" solutions.

Key Limitation

Group discussions are not spontaneous; they require careful planning by the teacher. They can be time-consuming and demand a high level of concentration from students to be successful.

3.4. Projects for EVS

The project method is a team-based activity centered on solving a real-life problem. W. H. Kilpatrick defined it as, "A project is a whole-hearted purposeful activity proceeding in a social environment." It involves a series of activities executed in a real-world context. For exam purposes, it is crucial to know these three stages and the specific activities within each, as questions often test the ability to sequence project-based learning correctly.

Steps of Project Method

- **Pre-activity stage:** This includes stating the problem and objectives, planning for resources and tasks, and initiating the project team by defining roles.
- **Activity stage:** This involves identifying sources of information, preparing tools for data collection (like questionnaires or checklists), and executing the various tasks in the right sequence.
- **Post-activity stage:** This final stage involves compiling and analyzing the data, formulating an action plan to resolve the problem, and reflecting on the entire experience to document learnings.

Merits and Limitations of the Project Method

- **Merits:** It provides real-life based experience, develops cooperative feeling and teamwork, is democratic and scientific in nature, and fosters a "discovery attitude."
- **Limitations:** It can be time-consuming and requires a high degree of preparation from the teacher. There is also a risk that children may focus too much on the "doing" part and fail to consolidate the learnings without proper guidance.

Role of the Teacher

The teacher acts as a guide and facilitator. Key responsibilities include:

- Ensuring the project has clear links to the curriculum.
- Acting as a guide, mentor, and co-learner.
- Monitoring the progress of the project and providing timely guidance.
- Arousing interest among learners and maintaining a positive, democratic environment.

3.5. Visits for Learning (Field Trips)

A field trip is a journey to a place away from the normal school environment. With proper planning, a "picnic" can be transformed into a joyful learning outing that provides rich opportunities for first-hand exposure and experience.

Steps to a Successful Visit for Learning

1. **Setting Goals for the visit:** The teacher must set explicit educational goals linked to the EVS curriculum. A preliminary visit to the site is highly recommended to assess facilities and plan activities.
2. **Planning the Programme:** The teacher should plan specific activities for the visit. Worksheets can be designed to guide students' observations and keep them engaged.
3. **Briefing the Students:** Before the trip, students should be briefed on where they are going, the objectives, and the 'Do's and Don'ts' (including safety rules).
4. **After the Visit:** Learning should be consolidated back in the classroom through discussions, report writing, quizzes, or drawings about the trip.
5. **Evaluating the performance:** The teacher needs to evaluate whether the educational goals of the visit were met and reflect on what could be improved for future trips.

3.6. Experiments for Teaching-Learning of EVS

An experiment is a method used to establish a cause-effect relationship. It involves inquiry, observation, inferring, and testing a hypothesis.

Appropriateness and Challenges

- **Appropriateness for EVS:**
    - Helps in understanding abstract concepts.
    - Develops a scientific temper and skills of hypothesizing and exploring.
    - Provides practical, hands-on knowledge.
    - Enhances skills of observation and analytical thinking.
- **Challenges:**
    - Requires advance preparation by the teacher.
    - Some experiments may require laboratory facilities or special equipment.
    - May require constant adult supervision to ensure safety procedures are followed.

Example Experiment: Soil Conservation (Protective cover)

This experiment demonstrates how plant roots protect topsoil.

- **Setup:** Two boxes are filled with soil. One box (Box 1) has plants (like mustard seeds) grown in it, while the other (Box 2) is left with bare soil. Both boxes are tilted at a slope. (Refer to the source diagram, which visually contrasts a vegetated box with a bare soil box, both positioned to show runoff into collection jars.)
- **Process:** Equal amounts of water are gently poured over both boxes. The runoff water from each box is collected in a jar.
- **Observation:** The water collected from the vegetated box is less in quantity and clearer. The water from the bare soil box is muddier and greater in quantity.

- **Learning Outcome:** This visually demonstrates that vegetation helps water percolate into the ground (reducing runoff) and protects topsoil from being washed away.

3.7. Problem Solving

Problem-solving, or problem-based learning, is a method aimed at helping students arrive at a solution for a given problem, specifically designed to prepare them to participate in democratic, group processes for solving complex, open-ended environmental issues.

Steps to Problem Solving

- **Identify the problem:** Understand and describe the issue.
- **Define the problem:** Gather information related to the identified problem.
- **Fact finding:** Undertake necessary fieldwork, surveys, or experiments.
- **Analyse the Problem:** Gather and interpret data to arrive at a solution.
- **Discuss possible strategy for action:** Develop an action plan to solve the problem.
- **Evaluate the Results:** Determine if the solution was effective in solving the problem.

Appropriateness for EVS

- Develops an insight into environmental problems.
- Facilitates divergent thinking and helps children appreciate multiple views.
- Brings real-life, complex issues into the classroom for analysis.
- Enables children to participate actively in group processes.

4.0 Unit 7: Planning Teaching and Learning of EVS

4.1. The Need for and Steps in Planning

Effective planning is the basis of any successful process. A plan is like a map; it shows you how far you have progressed toward your goal and helps you make good decisions about what to do next. The case of Samir, who nearly missed his assignment deadline due to poor planning, illustrates how effective planning can reduce time and effort and help avoid a crisis.

Planning provides clarity in three key areas:

1. **Path clarity:** It helps you visualize the entire work schedule and its logical steps.
2. **Assumptions:** It provides an opportunity to review assumptions about the teaching-learning process.
3. **Futuristic assurance:** It prepares you to anticipate and address various environmental and social concerns.

The story of the teacher Laxmiram from the book 'Divaswapna' highlights the challenges of planning without knowing the learners. His pre-planned activities failed on the first day because they were not suited to the students' background and interests. The key lessons he learned were:

- One must know the learners and the learning environment before planning.

- Planning should be according to students' age and interests.
- A good plan must have alternatives.

Eight Minimum Steps for an Effective Lesson Plan

- **Outline Learning Objectives:** Identify what students should be able to do after the lesson.
- **Teaching Points:** Identify the key concepts from the topic to be covered.
- **Plan the Introduction and Learning Activities:** Decide how to introduce the topic and select the most appropriate teaching methods.
- **Plan to Check for Understanding:** Determine how you will assess if students are learning during the lesson.
- **Develop a Conclusion and a Preview:** Plan how to recapitulate the main points and link them to future lessons.
- **Create a Realistic Timeline:** Allocate an appropriate amount of time for each segment of the lesson.
- **Presenting the Lesson Plan:** Let students know what they will be learning to keep them engaged.
- **Reflecting on Your Lesson Plan:** After class, reflect on what worked well and what could be done differently.

4.2. Planning EVS Lessons and Annual Plans

When planning EVS lessons, it is crucial to keep the unique nature of the subject in mind. The following general aspects should be considered:

- Prioritize objectives related to values, attitudes, and skills over just knowledge.
- Design plans based on real-life experiences that encourage critical thinking.
- Choose participatory methods that allow children to discover and explore their immediate environment.
- Focus assessment on learners' abilities and their social contexts.

Sample EVS Lesson Plan (Class III)

- **Topic:** Human-made and Natural things, Living & non-living things
- **Teaching Points:** Definitions and characteristics of human-made, natural, living, and non-living things.
- **Learning Objectives:** Students will be able to define, differentiate, and give examples of these categories; collect items from their environment; and draw diagrams.
- **Teaching Aids:** Flannel board, various objects (stone, flower, chalk).
- **Previous Knowledge:** Students can name different things around them.

- **Introduction:** The teacher asks questions to elicit examples of things made by nature and by humans, leading to the topic.
- **Content:** The teacher guides students to classify objects. A flannel board is used to display the characteristics of living and non-living things.

Living things	Non-Living Things
Breathe	Do not Breathe
Move	Do not Move
Grow in Size	Do not Grow in Size
Reproduce	Do not reproduce

Note: *While the source uses the phrase 'Give Birth to Child,' the more scientifically accurate term is 'Reproduce,' which encompasses the diverse ways living things create offspring. Student-teachers should use precise terminology in their own classrooms.*

- **Recapitulation:** Students encircle living and non-living things on a prepared chart.
- **Home Work:** Students list and draw examples of each category from their environment.

Instructor's Analysis Note how the teacher in this plan moves from broad questions ("things you see at home") to specific classifications, embodying the inductive approach to learning. The use of a Flannel Board is a classic, low-cost visual aid ideal for primary classrooms, demonstrating effective resource use. The plan clearly links previous knowledge to new concepts, a hallmark of constructivist pedagogy.

Annual Lesson Plans and Correlation

Annual lesson plans provide a year-long roadmap for teaching. A key aspect of effective annual planning in EVS is **Correlation**, which involves making connections across different areas. This practice of Correlation is a direct application of the NCF 2005's emphasis on breaking down subject boundaries and connecting learning to the child's real-world context.

- **Correlation with nature/festivals:** Linking lessons to seasons, local festivals, or natural events (e.g., teaching about specific foods during a harvest festival).
- **Correlation with other subjects:** Finding connections between an EVS lesson (e.g., 'water') and lessons in language or math.
- **Correlation with the same theme in other grades:** Understanding the vertical progression of themes (like 'food' or 'shelter') across Classes III, IV, and V.
- **Correlation with other themes:** Connecting a lesson in one theme (e.g., 'Shelter') with a related theme (e.g., 'Things We Make and Do').

4.3. Planning for Progress, Participation, and Resource Use

Besides the curriculum, effective planning must consider three other crucial aspects: students' progress, students' participation, and available resources.

The story of Leena and Tad demonstrates the critical importance of maintaining and referring to a **Student's Learning Profile**. Initially, Leena saw Tad as an uninterested student with poor performance. However, upon reading his profile, she discovered his past brilliance and the tragic family circumstances that led to his decline. This understanding allowed her to connect with him, and his performance dramatically improved. A learning profile tracks a child's abilities, context, and progress over time, providing invaluable insight for teachers.

Involving students in the planning process helps accommodate different learning styles and ensures greater engagement. Finally, good resource planning is essential for a successful lesson plan, ensuring that all necessary materials are identified and available when needed.

5.0 Unit 8: Resources and Materials for Teaching-Learning EVS

5.1. Significance and Types of Learning Resources

A learning resource is anything that can be used to help achieve an educational aim. This could be a map, a school garden, a pond, or a community member.

Learning resources are significant in EVS for both educational and social reasons:

- **Educational Benefits:** They facilitate real-life, outdoor-based learning and help students construct their own knowledge through direct experiences.
- **Social Advantages:** They help build strong relationships with the community and make students more aware and sensitive toward their immediate environment.

Types of Learning Resources

- **Community Resources:** People with practical skills and knowledge are invaluable resources. This includes gardeners, carpenters, farmers, grandparents who can share stories, and even peer teachers.
- **Institutional Resources:** Public facilities and other establishments offer real-world learning opportunities. Examples include hospitals, post offices, museums, factories, local fairs, plant nurseries, and banks.
- **Elements of Nature as Learning Resources:** The natural environment is a primary resource for EVS. Hills, ponds, forests, grasslands, and even the school campus itself can serve as outdoor classrooms.
- **Media Resources:** Newspapers, magazines (like *National Geographic*), television channels (like *Discovery*), and environment-related websites provide current information and diverse viewpoints on environmental issues.
- **Technology Resources:** Modern gadgets can be used creatively. Mobile phones can record natural sounds, computers can be used for research and creating presentations, and cameras are essential tools for documenting field visits.
- **Human Made Resources:** Everyday objects like a pen, pencil, chair, or materials developed from waste can be used to create learning activities that encourage comparison, modeling, and concept formation.

5.2. Creative Use of Local Materials and School Resources

Locally available, low-cost or no-cost materials can be creatively used to create rich learning experiences.

Available Material	Learning Purpose	Learning Activity
Pebbles	Recognize shapes, classification skills	Arrange pebbles by shape, size, or color.
Leaves	Learn plant diversity, observation skills	Classify a collection of fallen leaves by texture, shape, etc.
Chair	Learn about materials, life cycle of objects	Research what material a chair is made of, its cost, and if it's biodegradable.

Schools as Resource Centres

A school can create a "Treasure House" of learning materials by organizing different resource corners.

- **Collection Corners:** These can be dedicated to specific collections like seeds, leaves, pictures, stamps, or coins.
- **Other Corners:** Dedicated spaces like a storybook corner, project corner, map corner, or experiment corner can be established to house relevant materials.

The role of children and the community is vital in developing and maintaining these resource pools. The story of teacher Ramesh illustrates this perfectly. He involved students, parents, the village Sarpanch, and a landowner to convert a wasteland plot into a school playground. This collaboration transformed the school environment and created a valuable community-supported resource. This case demonstrates that community engagement is a powerful multiplier for school resources, creating sustainable, stakeholder-driven educational assets.

6.0 Conclusion

In summary, these notes codify the principles of exemplary EVS pedagogy: a shift from rote memorization to a constructivist paradigm. The effective EVS facilitator employs activity-based and cooperative learning approaches, supported by meticulous planning that incorporates annual goals, daily lessons, and continuous assessment through tools like student learning profiles. This approach is grounded in the strategic use of correlation to break down subject barriers and connect learning to the real world. Ultimately, exemplary EVS teaching transforms the classroom by leveraging the community as a resource, utilizing low-cost local materials, and empowering students to become active constructors of their own knowledge, skills, and environmental values.