Report on Innovation Created by Class 10 Students of PM Shri Kendriya Vidyalaya Andrewsganj, New Delhi

Introduction

Innovation plays a key role in fostering creativity and critical thinking among students. In Kendriya Vidyalaya, class 10 students have consistently demonstrated their ingenuity by developing projects that address real-world problems. Their innovative ideas not only reflect their academic knowledge but also their passion for making a positive impact on society. This report highlights some of the remarkable innovations created by the students.

1. Solar-Powered Water Purification System

A group of class 10 students developed a cost-effective **solar-powered water purification system**. The system utilizes solar energy to power a filtration mechanism that removes impurities from contaminated water, making it safe for drinking. This project aims to provide an eco-friendly solution to clean water scarcity, especially in rural areas where access to clean water is limited.

Key Features:

- Solar panels to harness renewable energy
- Multi-layer filtration system for effective purification
- Low-cost and easy-to-maintain design

2. Smart Waste Segregation Bin

Another innovative project was the creation of a **smart waste segregation bin**. The bin uses sensors to automatically detect and separate different types of waste—organic, plastic, and metal. The students integrated a microcontroller that triggers the sorting mechanism based on the type of waste deposited. This innovation helps promote efficient recycling and waste management in schools and public areas.

Key Features:

- Sensors for waste detection and segregation
- Microcontroller-based automation
- Promotes eco-friendly waste disposal habits

3. Mobile App for Learning Support

A team of students created a mobile app called **"LearnEasy"** designed to offer personalized learning experiences for students. The app provides subject-wise study materials, video tutorials, quizzes, and performance analytics to help students understand their strengths and weaknesses. The app is especially helpful for students preparing for board exams, as it allows them to focus on areas needing improvement.

Key Features:

- Customizable study plans
- Interactive video tutorials and quizzes
- Real-time performance tracking and feedback

4. Biodegradable Plastic Alternative

Students concerned about environmental pollution developed an **eco-friendly plastic alternative** made from biodegradable materials like corn starch and vegetable oils. The project aims to reduce the use of non-biodegradable plastics, which contribute to environmental degradation. This innovation demonstrates a deep understanding of environmental issues and presents a sustainable solution to one of the world's major challenges.

Key Features:

- Completely biodegradable and non-toxic
- Can be used for packaging and other applications
- Low production cost and environmentally sustainable

5. Smart Traffic Management System

Addressing the issue of traffic congestion, a group of students designed a **smart traffic management system** using IoT (Internet of Things) technology. The system uses real-time data from traffic sensors and cameras to control traffic signals based on the current traffic flow. This ensures a smooth and efficient management of traffic in urban areas, reducing delays and accidents.

Key Features:

- Real-time monitoring of traffic conditions
- Adaptive traffic signal control
- Minimizes traffic jams and improves road safety