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MODULE
19

Indoor Environment: Smart Cleaning and Integrative Pest Management

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The indoor environment of school buildings is crucial for the health, comfort, and productivity of students and staff. To maintain this environment, schools must adopt a strategic approach to cleaning and pest management. Smart cleaning and integrative pest management are two interrelated strategies that contribute to maintaining a safe and conducive learning atmosphere.

Learning Objectives

- Green school buildings are dynamic learning environments.
- Operations and Maintenance for Whole School Sustainability
- Meaningful, purposeful, and engaging learning
- Sustainable Spaces and Smart Transportation
- Energy Efficiency - Lighting
- Energy Efficiency - Plug Loads & HVAC Systems
- Water Efficiency and Quality
- Indoor Environment: Air Quality and Acoustics
- **Smart Cleaning & Integrative Pest Management**
- Materials and Resources
- Emerging Design and Technology
- Summary and Resources
- SCS Quiz: Test Your Knowledge!

INTRODUCTION

Smart Cleaning and Integrative Pest Management Overview

- Utilizes IoT, AI, and robotics for efficient, effective, and sustainable cleaning.
- Data-driven decision making through facilities management systems.
- Sustainability considerations include eco-friendly cleaning products, water consumption reduction, and waste minimization.

Integrated Pest Management (IPM)

- Combines multiple strategies to minimize pest populations.
- Understands pest biology and uses regular inspections and traps.
- Includes cultural, physical, biological, and chemical methods.
- Crucial in hospital settings.



SMART CLEANING



- Utilizes advanced technologies to enhance efficiency and effectiveness of cleaning processes in indoor environments.
- Principles include data-driven approaches, sustainable practices, and training and technology.
- Uses occupancy sensors to identify high-traffic areas requiring more frequent cleaning.
- Incorporates green cleaning products and methods to reduce harmful chemical exposure.
- Training staff in modern cleaning techniques, including automated equipment like robotic vacuums and UV-C light disinfectors.
- Demonstrates improved Indoor Air Quality (IAQ) by reducing allergens, dust, and harmful pathogens.
- Cost-Effectiveness by reducing waste and optimizing cleaning schedules.
- Enhances learning environment by improving student performance and reducing absenteeism.

INTEGRATIVE PEST MANAGEMENT (IPM)

- Combines multiple strategies to prevent and manage pest populations with minimal environmental impact.
- Principles include prevention, monitoring and identification, and control strategies.
- Implemented by a high school experiencing an increase in rodent sightings.
- Benefits include health and safety, cost efficiency, and sustainability.
- As educational institutions evolve, the integration of these practices will be pivotal in addressing challenges associated with indoor environmental quality.



GREEN CLEANING PRINCIPLES AND PRACTICES

- Green cleaning involves using environmentally friendly products and practices.
- Strategies include regular cleaning schedules, effective floor maintenance, air filtering systems, and entryway matting.
- Traditional cleaning products often contain harmful substances that can cause respiratory problems, skin irritations, and long-term health issues.



ENVIRONMENTALLY FRIENDLY CLEANING PRODUCTS, EQUIPMENT, AND PRACTICES

- Adopting environmentally friendly cleaning products is essential for promoting a healthy classroom environment.
- Examples include vinegar and baking soda, plant-based cleaners, and microfiber cloths.



INTEGRATED PEST MANAGEMENT: A GREEN APPROACH

- IPM is a holistic approach to pest control focusing on prevention, monitoring, and non-toxic methods.
- Common classroom pests include Ants, cockroaches, dents, and termites.
- Sources of infestation include food sources, moisture, and entry points.
- Preventative measures include regular inspections, education on proper sanitation practices, and landscaping.



NON-TOXIC BASIC PEST MANAGEMENT METHODS

Non-toxic pest management methods include traps, natural repellents, and diatomaceous earth.

Conclusion

- The integration of green cleaning and IPM strategies enhances Indoor Environmental Quality in educational settings.



THANK YOU

