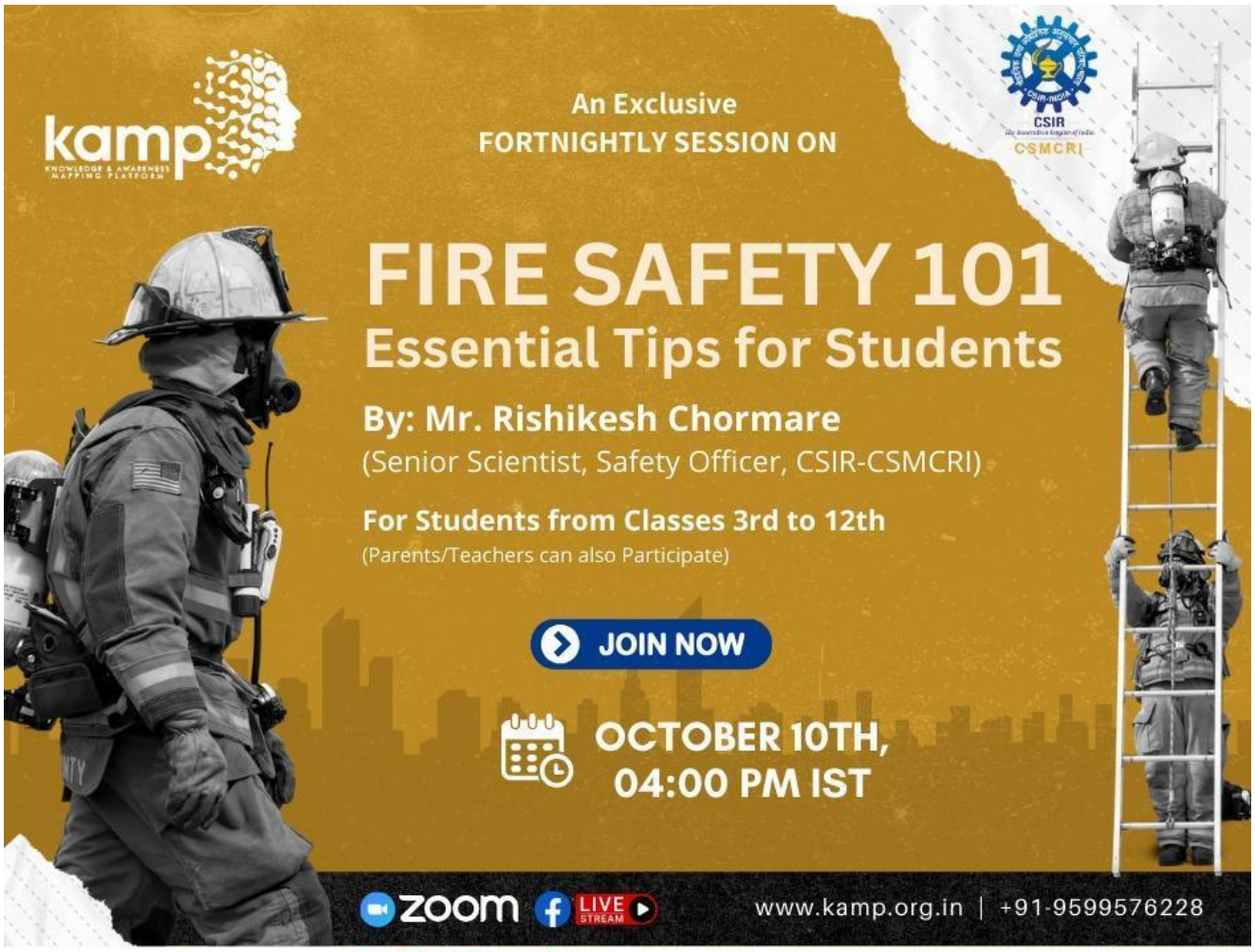


In Association With

IAIR Institute of Artificial Intelligence and Research
आर्टिफिशियल इंटेलिजेंस अनुसंधान संस्थान

KNOWLEDGE AND AWARENESS MAPPING PLATFORM

KNOWLEDGE SESSION 2024: EPISODE 61

Organized By: Knowledge & Awareness Mapping Platform (KAMP)
In Knowledge Alliance with CSIR -NIScPR and M/s NCPL

Topic: Fire Safety 101: Essential Tips for Students

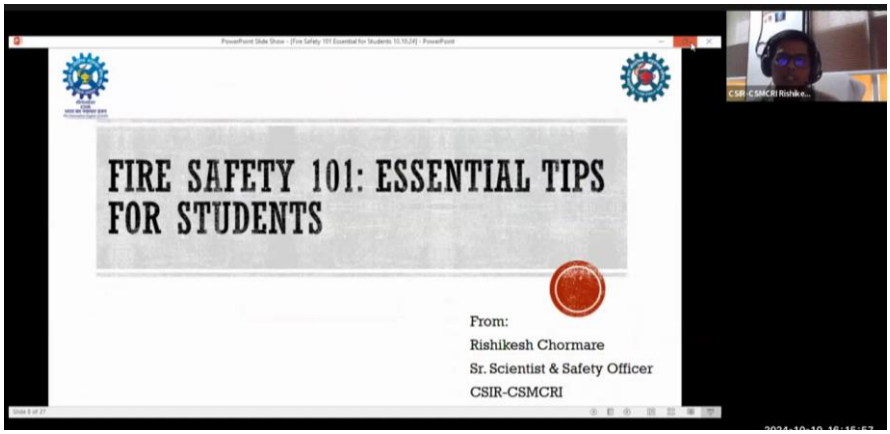
Category: Scientific and Life Skills **Organized for:** Students

Speakers/Presenters: Dr. Rishikesh Chormare **Date:** October, 10th, 2024

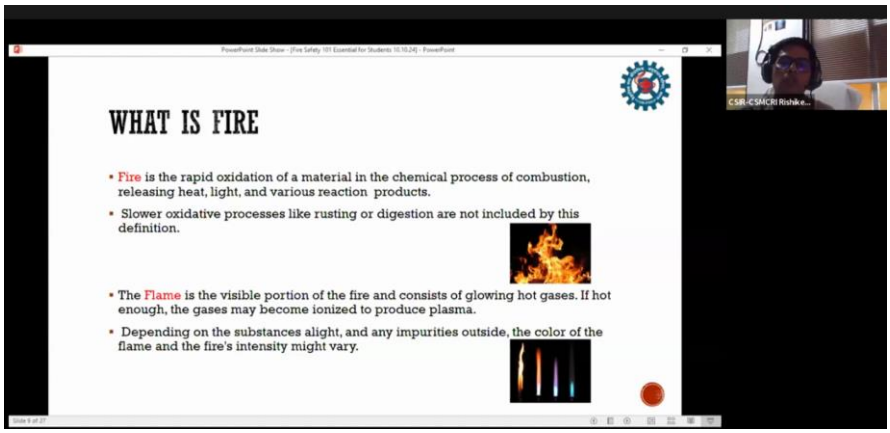
No. of Participants: 500+ Students from different schools across India

Overview:

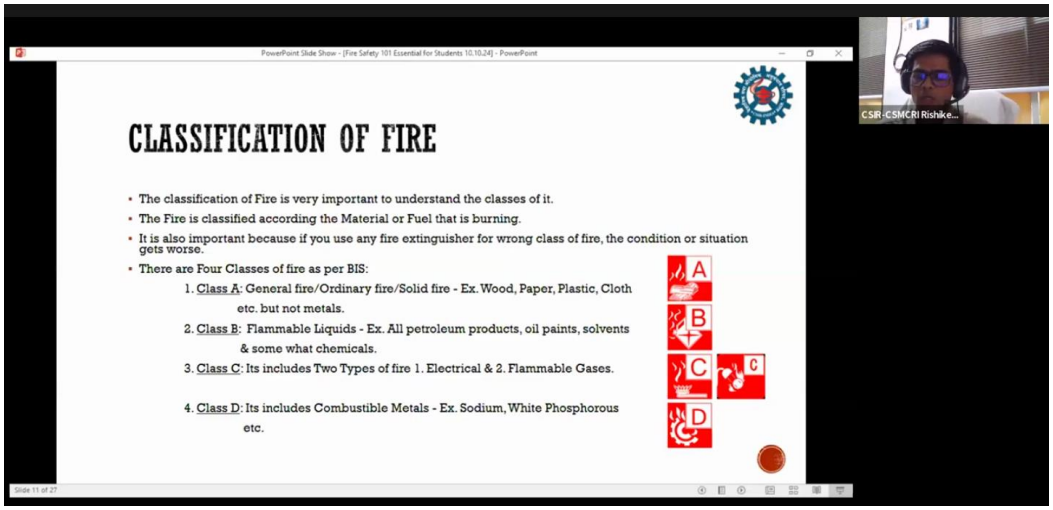
On 10th October 2024, KAMP conducted an exclusive Fortnightly Session titled "Fire Safety 101: Essential Tips for Students". This workshop, tailored for students from grades 3rd to 12th, was led by Dr. Rishikesh Chormare, a Senior Scientist and Safety Officer at CSIR-CSMCRI. The session aimed to empower students with fundamental fire safety knowledge and practical skills, emphasizing the importance of preparedness and safety in everyday life while fostering a connection to science and technology.



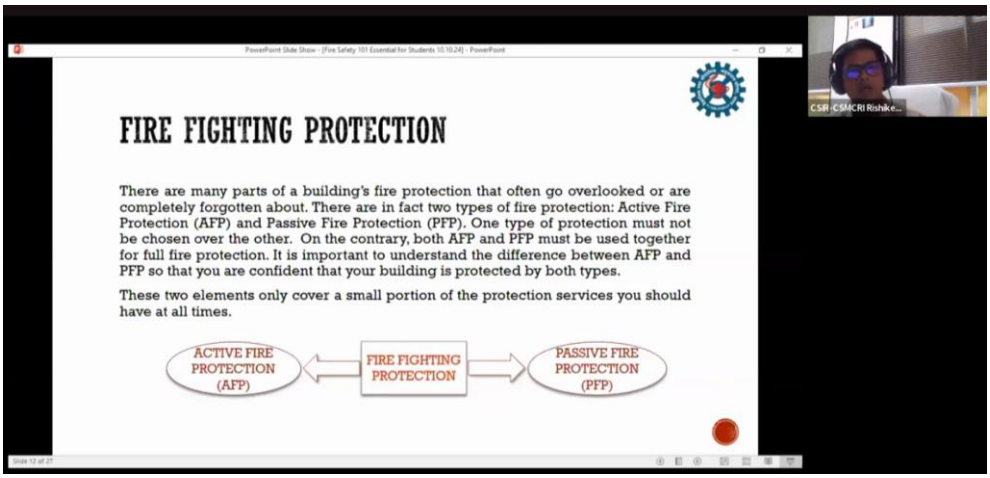
The session began by delving into the foundational concepts of fire, emphasizing its essential elements—heat, fuel, and oxygen. These three components, collectively forming the fire triangle, were explained as the critical conditions for fire ignition and sustenance. Dr. Rishikesh Chormare provided a detailed explanation of how the absence of any one of these elements would disrupt the process and extinguish the fire. For example, removing heat by cooling with water or depriving the fire of oxygen by smothering can effectively stop combustion. Building on this basic concept, Dr. Chormare introduced the fire tetrahedron, an expanded model that includes the role of chemical reactions in fire. He explained that these reactions sustain the chain process of combustion, making it an essential aspect of understanding how fire behaves and spreads.



This theoretical framework set the stage for a classification of fire types, each with distinct characteristics and risks. Class A fires, caused by ordinary combustibles such as wood, paper, and cloth, are the most common and often seen in households and schools. Class B fires involve flammable liquids, such as gasoline, kerosene, and oils, and pose unique challenges due to the difficulty of containing liquid fuel. Class C fires were explained as those arising from electrical equipment or flammable gases, requiring special techniques to avoid electrical hazards. Lastly, Class D fires involve combustible metals like magnesium, titanium, and sodium, often occurring in industrial settings and requiring specialized extinguishing agents.

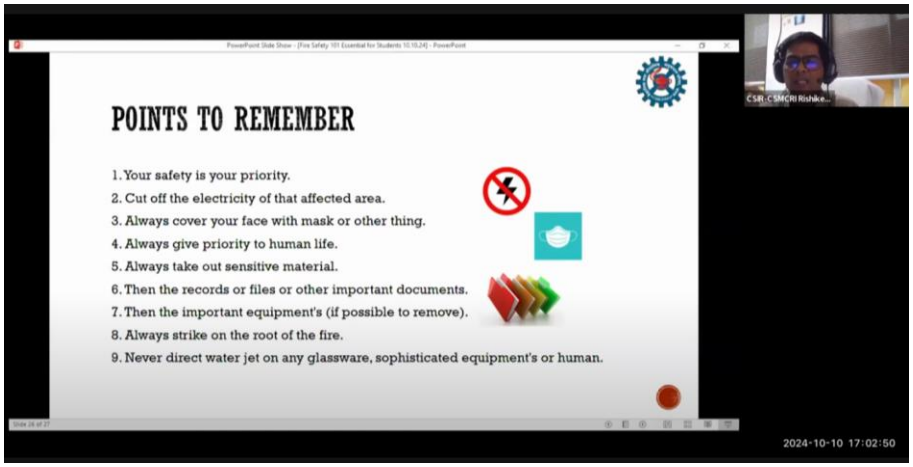


The workshop then shifted to firefighting and protection measures, which play a crucial role in preventing and managing fires. Dr. Chormare emphasized the distinction between active systems and passive systems. Active systems, such as fire extinguishers, sprinklers, and alarms, are directly involved in detecting and suppressing fires. The session provided a thorough overview of the types of fire extinguishers, including water, foam, CO_2, dry powder, and wet chemical extinguishers, highlighting their specific uses for different fire classes. For instance, water extinguishers are effective for Class A fires but can worsen Class B or C fires. Dr. Chormare also discussed their limitations, emphasizing the importance of choosing the correct extinguisher for the situation.



Passive systems, on the other hand, are designed to contain and slow the spread of fire. Examples include fire-resistant walls, doors, and coatings that act as barriers to protect

buildings and occupants. The workshop also provided students with a comprehensive understanding of the fire hydrant system, detailing its types (wet and dry risers), components such as pumps, hoses, and valves, and their operation. Students learned how fire hydrants serve as critical infrastructure in combating large-scale fires and how they integrate into broader fire safety strategies.



Through these detailed explanations and practical insights, students not only gained theoretical knowledge of fire safety but also practical skills to apply in real-life scenarios. This comprehensive approach aimed to foster a deeper understanding of fire behavior and the importance of preparedness, enabling students to contribute meaningfully to safety measures in their surroundings.

KAMP's fortnightly workshops aim to help students develop creativity, meaningful learning, and critical reading and thinking skills, bringing out their inherent abilities. The vision of KAMP is to identify and capture the Scientific and Technological temperament in students, contributing to making India a Global Leader in the fields of science, technology, and the humanities.

These workshops, conducted by KAMP, cover various topics falling under the categories of science, technology, and innovation, Scientific and Life Skills, Career and Professional Development, Academic development, and training trainers and teachers.

KAMP believes that exposure to such topics from experts within specific fields helps students become aware of real-life situations and challenges, develop a problem-solving nature, understand their core values and personal interests, evaluate their skills within the given area, and achieve their best in their most desirable way.

Organized By:
Knowledge and Awareness Mapping Platform
(KAMP Operations and Coordination Office)

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