Safety Matters @ Science

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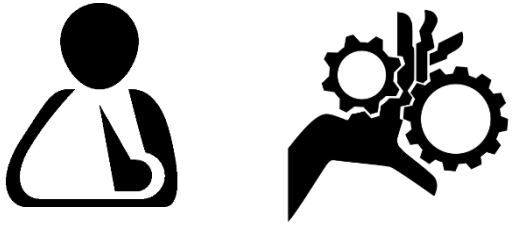
Safety and Health at NUS

Why is safety and health important?

1. You would expect to return home safely, as healthy as when you first step foot on campus.



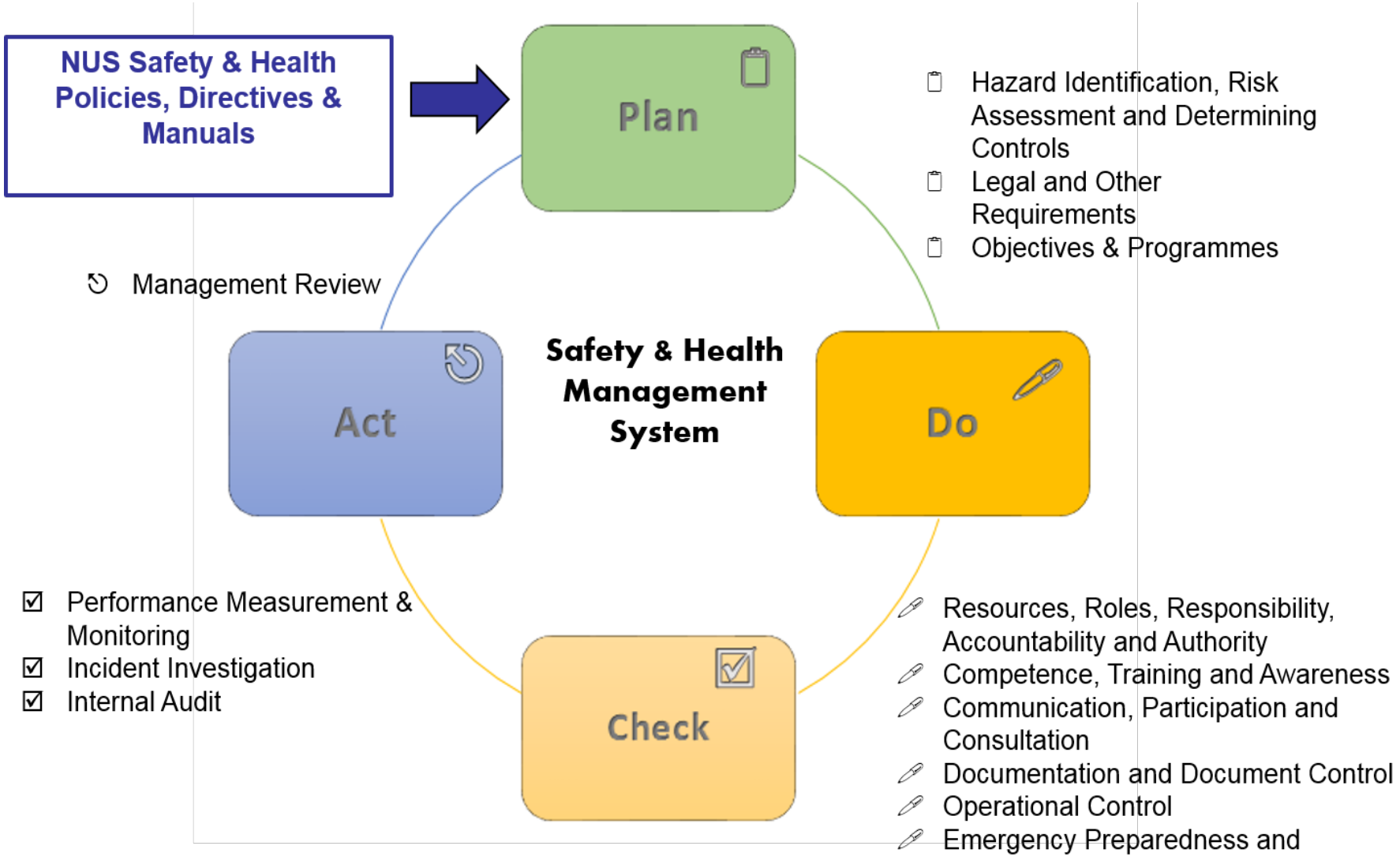
2. Avoid disruption to research activities and projects

3. Be in compliance with legal requirements

Applicable Safety Regulations

1. **Workplace Safety and Health Act (WSHA)**
2. Fire Safety (Petroleum & Flammable Materials) regulations
3. Chemical Weapons Convention
4. Poisons Act
5. Environmental Protection And Management Act (EPMA)
6. Environmental Public Health Act
7. Sewerage and Drainage Act
8. Misuse of Drug Act
9. Radiation Protection Act
10. SPF, Arms & Explosive Act – Explosive Precursors Regulations
11. Biological Agents and Toxins Act (BATA)
12. WHO Guidelines of Biosafety
13. Guidelines for Research on Genetically Modified Organisms (GMOs) by GMAC

Safety & Health Management in NUS



NUS Student's Responsibilities

Extracted from the NUS Safety and Health Policy.

Policy specifies management, supervisors, staff and students responsibilities concerning safety and health.

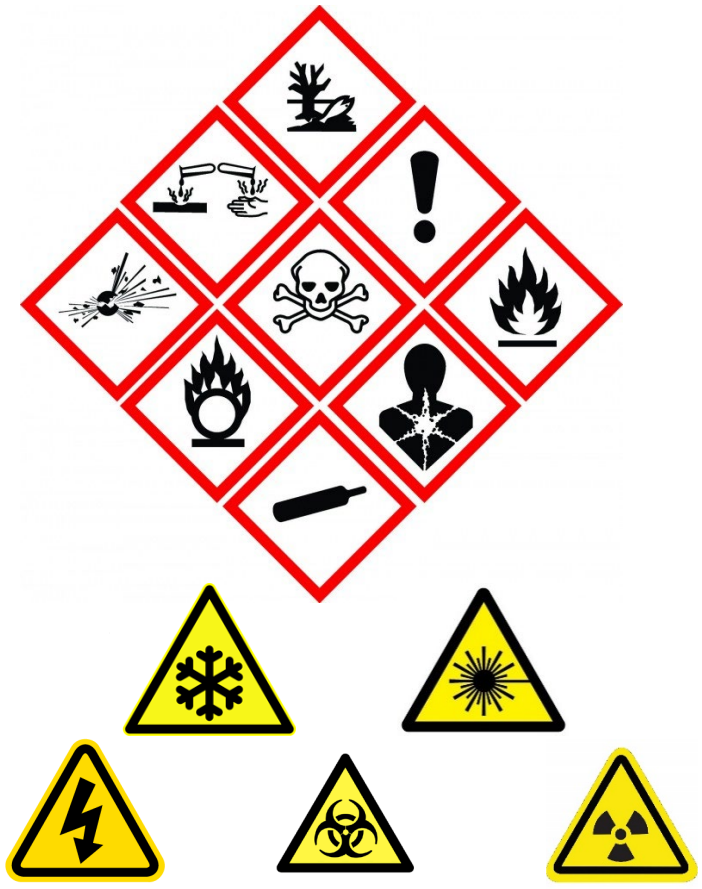
5. *NUS Staff and Students' Responsibilities*

Staff and students are responsible for:

a. Keeping themselves informed of situations and conditions that could affect their safety and health;
b. Participating in risk assessments and training programmes provided by their supervisors, instructors and OSHE (if applicable);
c. Adhering to S&H regulations, NUS requirements and practices in their workplace, classroom, laboratory and student residences;
d. Reporting to their supervisors or instructors on hazards, near misses, incidents or accidents in the workplace, classroom, laboratory or on campus;
e. Communicating to contractors and visitors any relevant information that they might require to minimise S&H risks while performing their activities.

Risk Assessment

1. All activities are required to be assessed for their risk.
2. Academic Supervisors or Lab ICs will be brief you on the potential hazards and safety precautions



Identify hazards that can cause harm

Identify and implement control measures to keep you and your co-workers safe

Risk Assessment

How a risk assessment may look like:

Experiment-Based Risk Assessment Form

Name of Department		Location of Lab	
Name of Laboratory		Name of PI	
Name of Researcher/LO		Name of Activity/Experiment	

	1. Hazard Identification			2. Risk Evalution				3. Risk Control		
No	Step 1: Description/Details of Steps in Activity	Step 2: Hazards	Step 3. Possible Accident / Ill Health & Persons-at-Risk	Step 4. Existing Risk Control (Mitigation)	Step 5. Risk Evaluation			Step 6: Additional Risk Control	Step 7: Person Responsible	Step 8:By (Date)
					Severity	Likelihood (Probability)	Risk Level			
1	1				1	1	1			
2					1	3	3			
3					2	3	6			
4							1			
5					1	1	1			

Description /details of steps

Hazards

Possible accident/Ill health & person at Risk

Existing control measures

Risk Evaluation

Risk Management/ Control

Conducted By _____

_____

_____

_____

Approved By

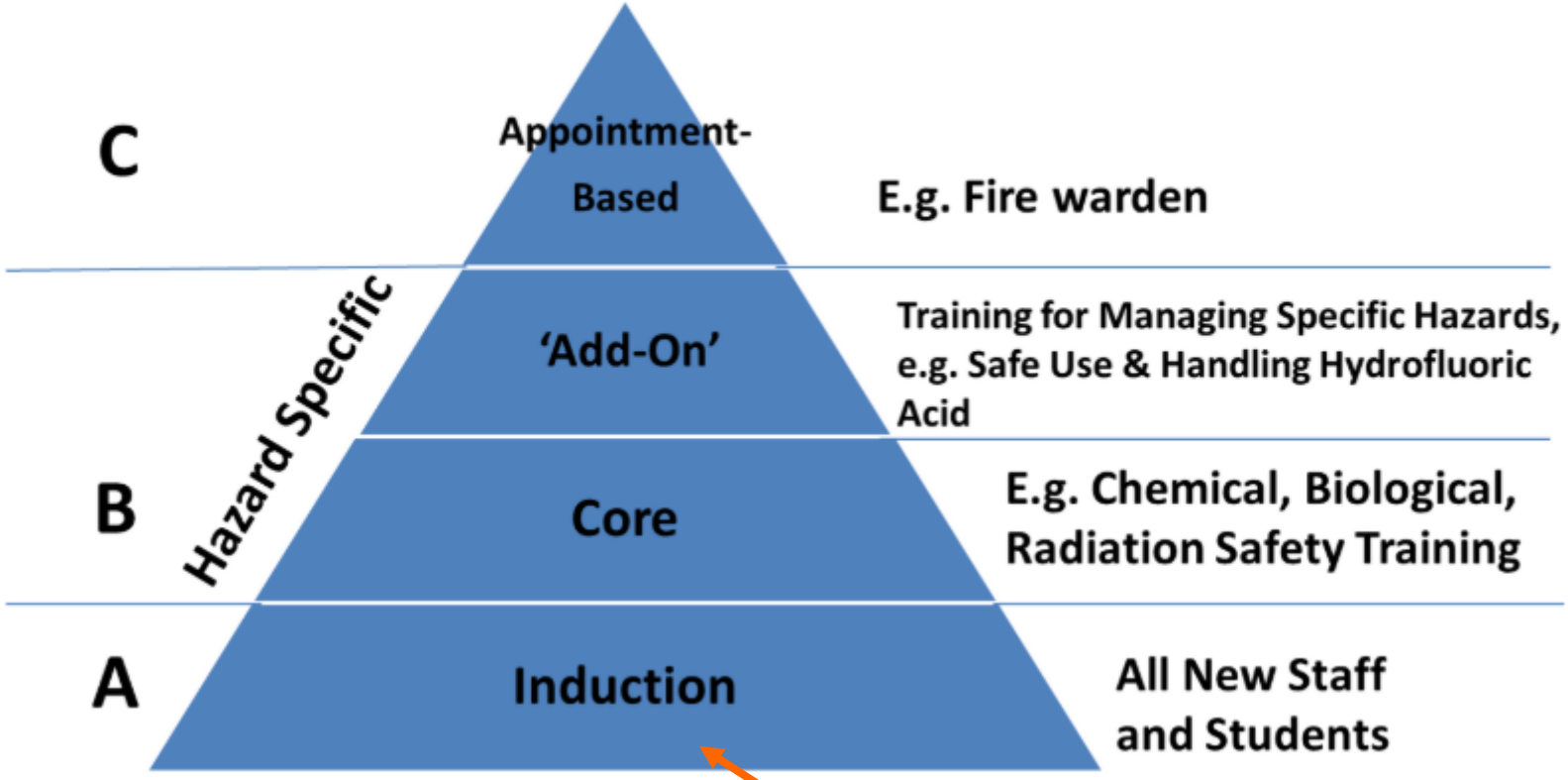
Name _____

Signature _____

Approval date _____ Next Revision date _____ (Maximum 3 years)

Safety Trainings

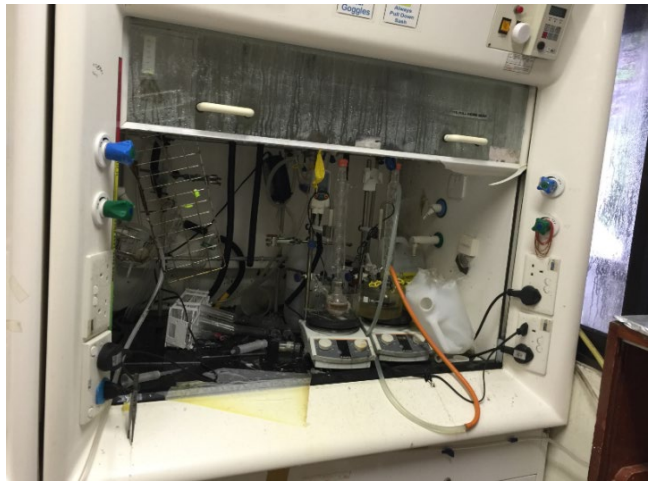
Office of Safety, Health & Environment (OSHE)
Progressive Structured Safety Training System
(https://inetapps.nus.edu.sg/osh/portal/training/ssts.html)



i. University e-Orientation Safety Training
ii. Faculty & Department Orientation Training
iii. Lab-specific Induction

Being prepared … …

Flash Fire from Lithium-Ethanol Mixture



Chemical Bottle Burst and Splash due to mixture of Incompatible Chemicals

Over pressurization and Splutter of 50ml Lab Bottle

Oven fire

Fire Safety – An Introduction

https://www.youtube.com/watch?v=7z6AY15GnmQ

Fire Safety – An Introduction

Fire at NUS LT 7a – Engineering Auditorium

Underestimating risk of fire

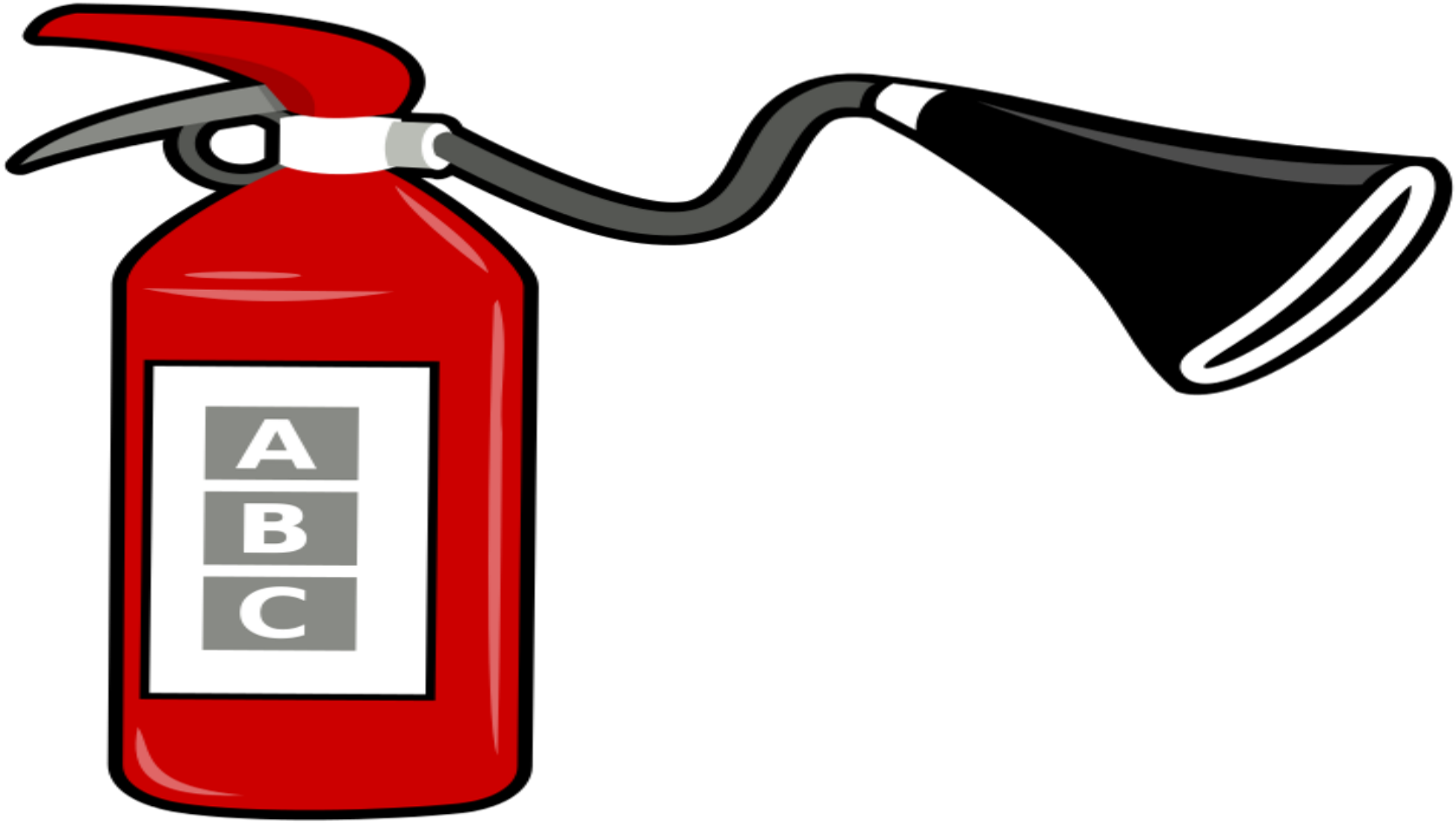
General issues:

- Underestimating speed of fire spread ➡ Delayed evacuation
- Not sure of required action ➡ Leading to injuries / loss
- Not trained to put out fires at incipient stage ➡ Spread of fire

Fire Development

https://www.youtube.com/watch?v=u1WRTQaQnFs&t=322s

Use of dry powder extinguisher



https://www.youtube.com/watch?v=58naKHqpCWo

Operating a Fire Extinguisher

Be familiar of the locations of extinguishers around you. There should be one extinguisher within 15 metres from where you are.

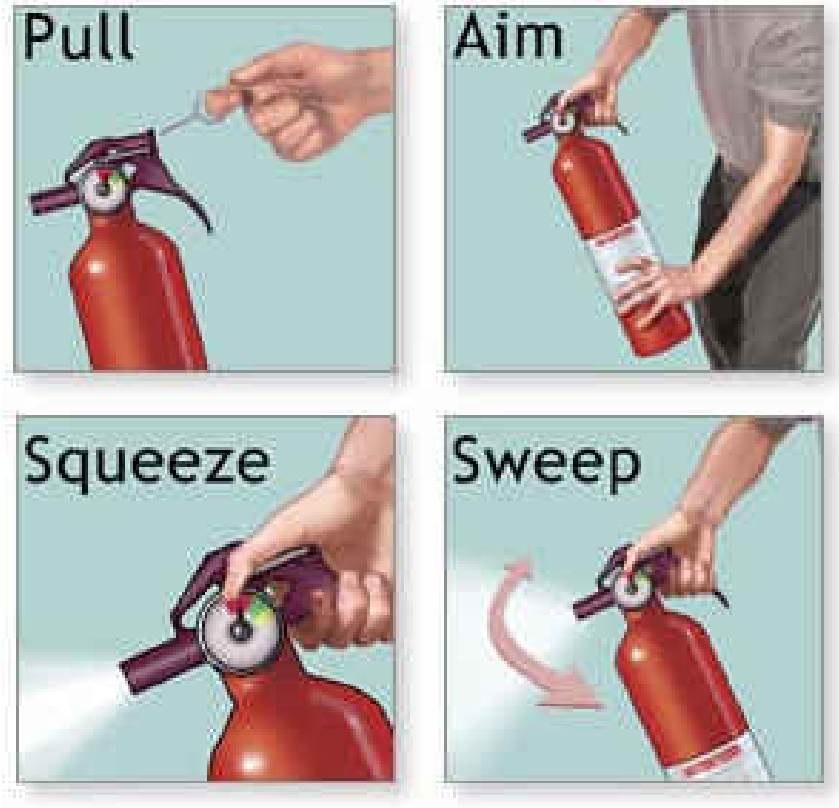
When a fire just started, this is known as the incipient stage. It can be put out using a dry powder extinguisher.

P - Pull the safety pin

A - Aim at the base of fire

S - Squeeze the handle

S - Sweep from side to side



Activate nearest Manual Call Point to alert others of the fire.

To ensure safety of the masses, when a fire is spotted a general evacuation of the area should be done. Activate the fire alarm system manually.

1. Lift the plastic protective cover (where applicable).
2. Break the glass inside with a blunt object.
3. Fire alarm will sound for the building.

Single Stage fire alarm

Ringing of Bell or/and P.A system activated prompting people to evacuate.

P.A. message: “There is an emergency situation in the building, please evacuate using the nearest safe exit.”

2-Stage fire alarm

1. 1st Stage:

Ringing of Bell follow by P.A system alerting people to stand-by while fire wardens investigate the cause of the alarm.

2. 2nd Stage:

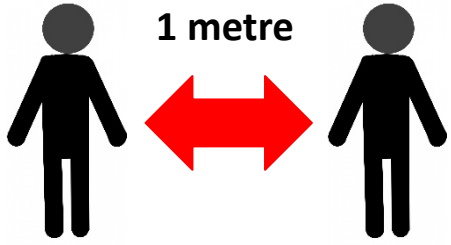
Following the confirmation of an emergency situation, a second ringing o bell followed by P.A. system continuously prompting people to evacuate the building.

Incident Reporting and Emergency Numbers

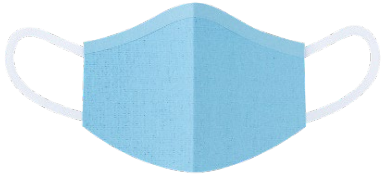
1. SCDF (Ambulance/Fire-fighting Services): **995**
2. NUS Office of Campus Security (OCS): **6874 1616**

   OCS will dispatch the nearest OCS personnel to provide initial assistance and also lead emergency responders to your location.
3. Report all accidents, incidents, near-misses, safety concerns in the NUS Accident & Incident Management System (AIMS) online via **NUS Student Portal**.

NUS COVID-19 MEASURES FOR STUDENTS

1. 

Maintain Safe Distancing

2. 

Wearing of Masks

3. 

Temperature Declaration (twice daily via uNivUS app)

4. 

Use of SafeEntry

5. 

No Cross Zoning

6. 

Practice Good Personal Hygiene

Science E- Safety Week 2020

21st - 25th September 2019 via Facebook Page

Theme: Towards Innovation in Science, Through the path of Safety

- **Register your participation** to be eligible for **an attractive door gift**
- Online safety videos and invited online talks by our Sponsors and Safety and Health Experts.
- **Attractive prizes to be won** for our online quizzes and safety competitions as well!

MARK YOUR CALENDAR!

Thank you

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National University
of Singapore