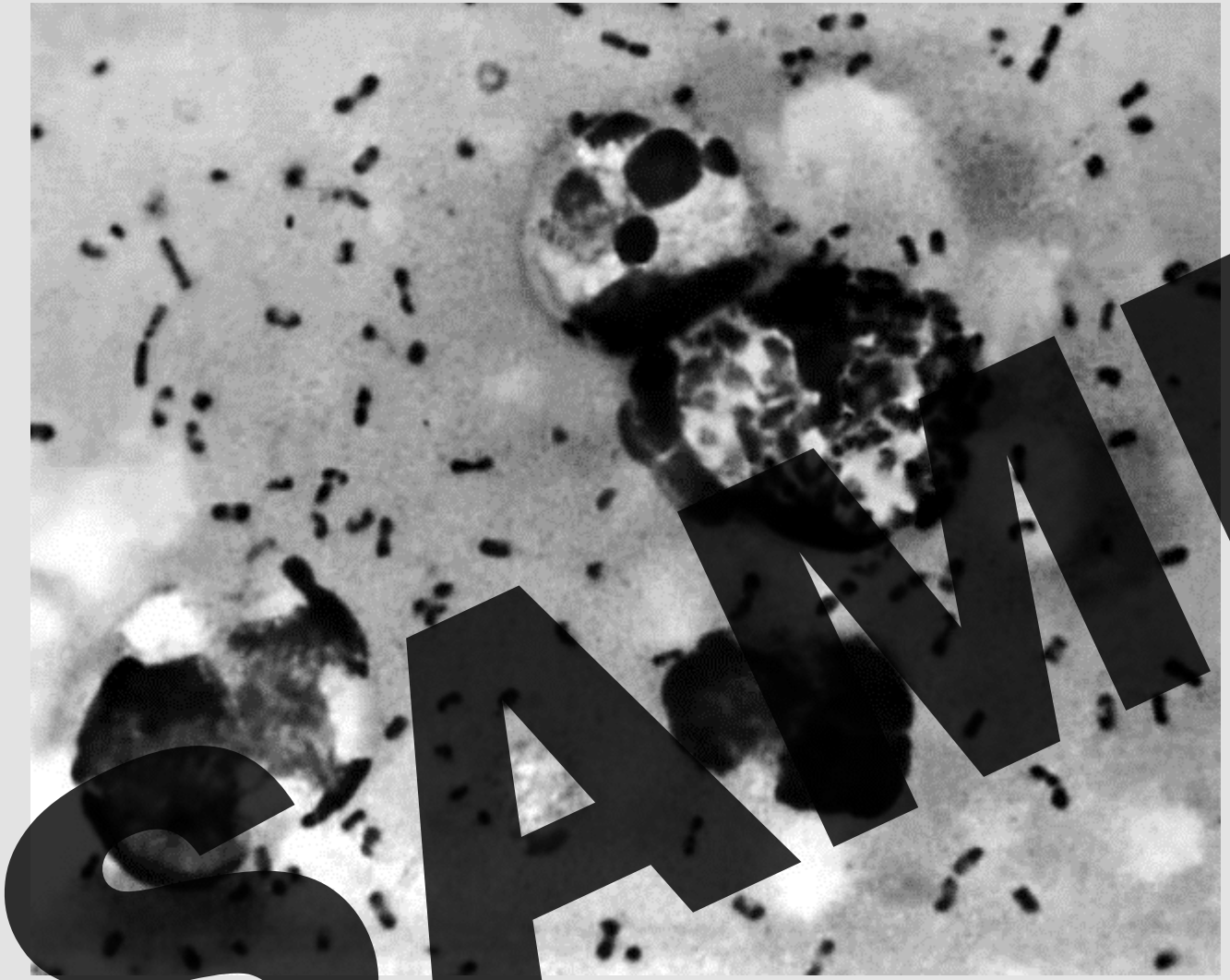
# Welcome to the Hard Hat Training Series!

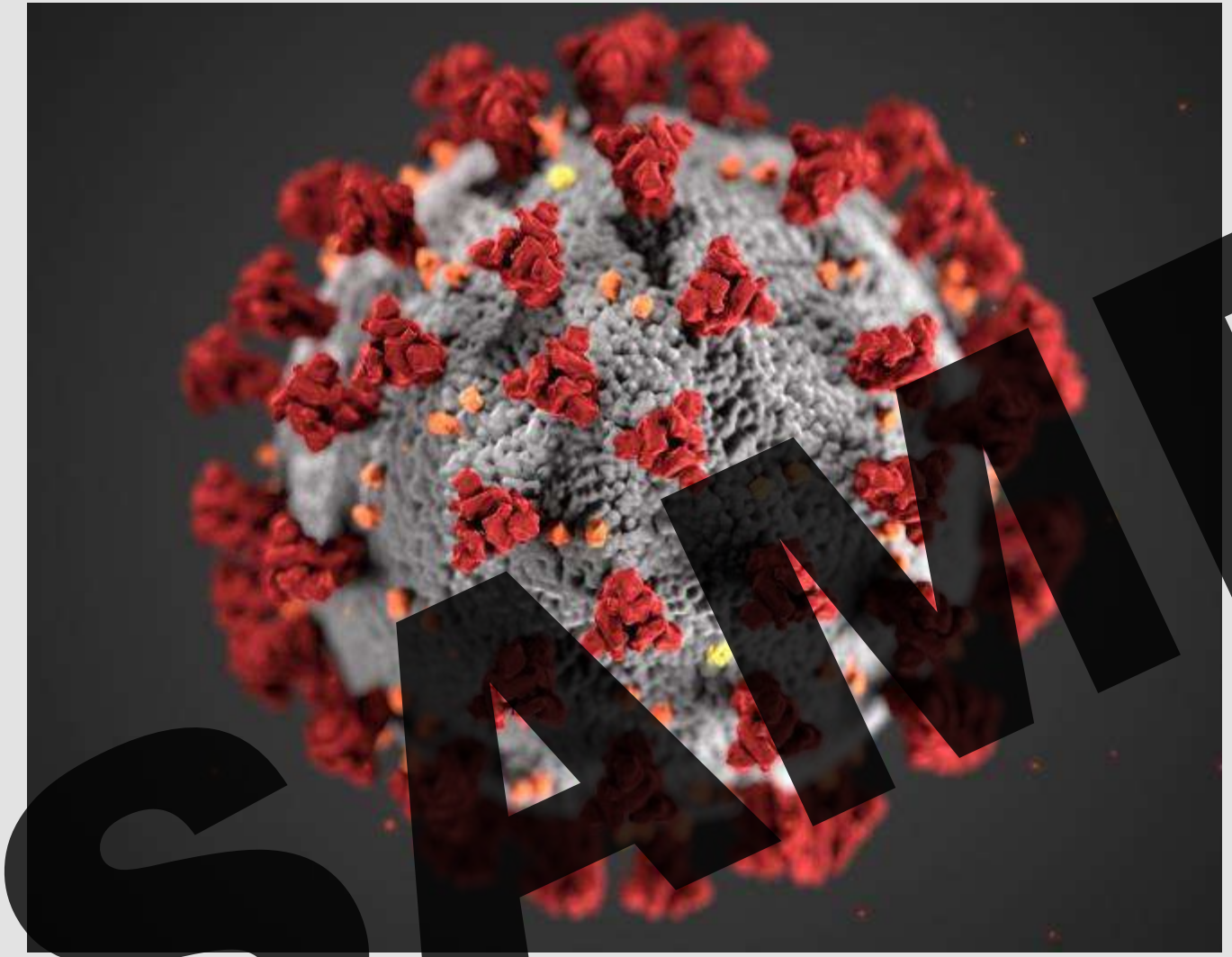


Welcome to the Hard Hat Training Series. Today we will talk about biological hazards. We will discuss how to identify and navigate the biological hazards you may encounter in your worksites. By the end of the training, you will be prepared to recognize the potential dangers of the microorganisms, fungi, plants, insects, and animals that surround you.

You may think that biological hazards do not affect your daily life, or that you will never encounter them. However, they have been the cause of some of the most troubling times in history.



For example, the Black Death of 1347 that took the lives of an estimated 50 million people began as a biological hazard. It was transmitted from fleas to human beings, eventually resulting in the eradication of over 30% of the European population.

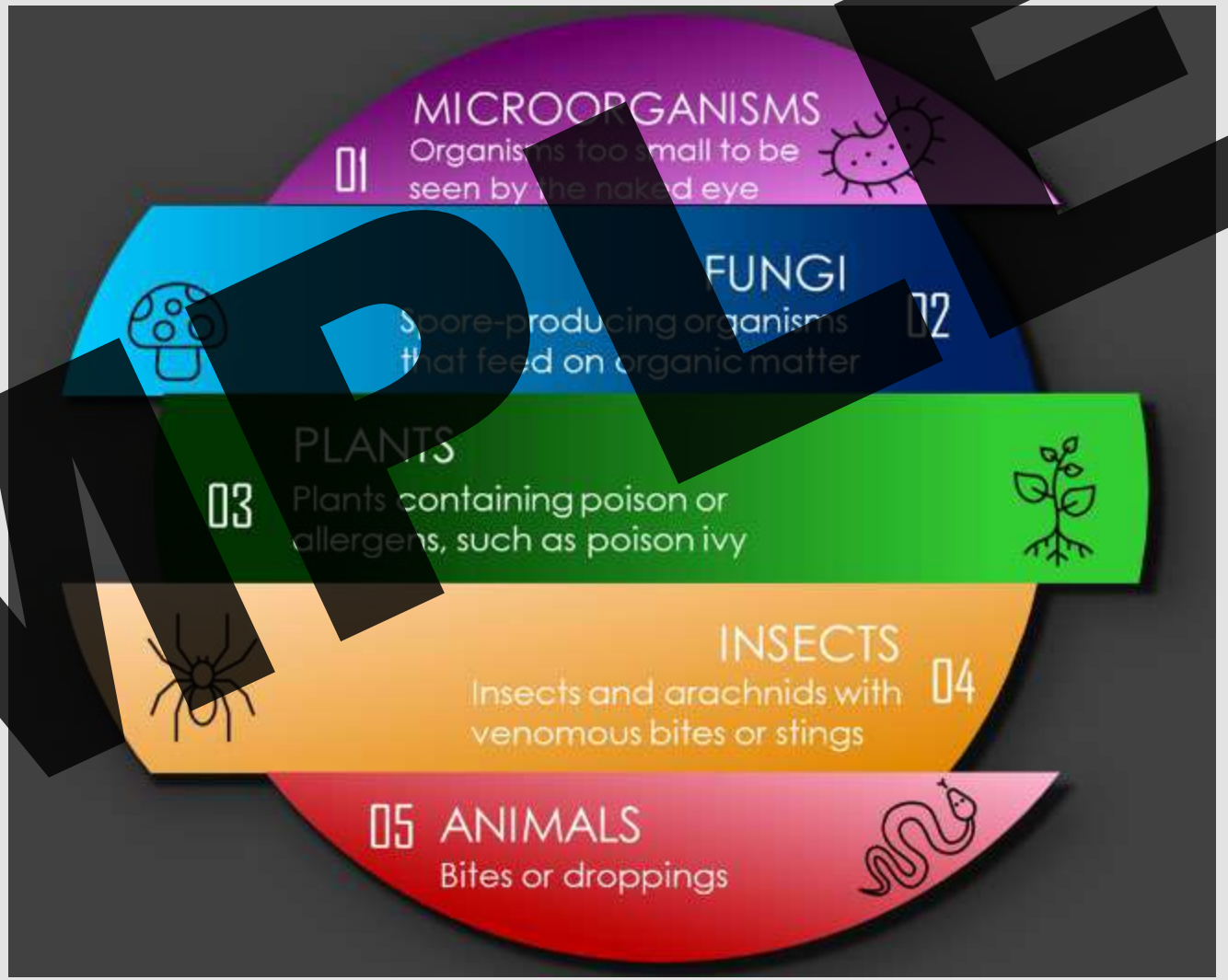


In recent times, the COVID-19 pandemic spread throughout the entire world after a human contracted a new strain of the SARS virus from an animal. The pandemic took the lives of millions, and millions more suffered life-long physical and mental health effects.

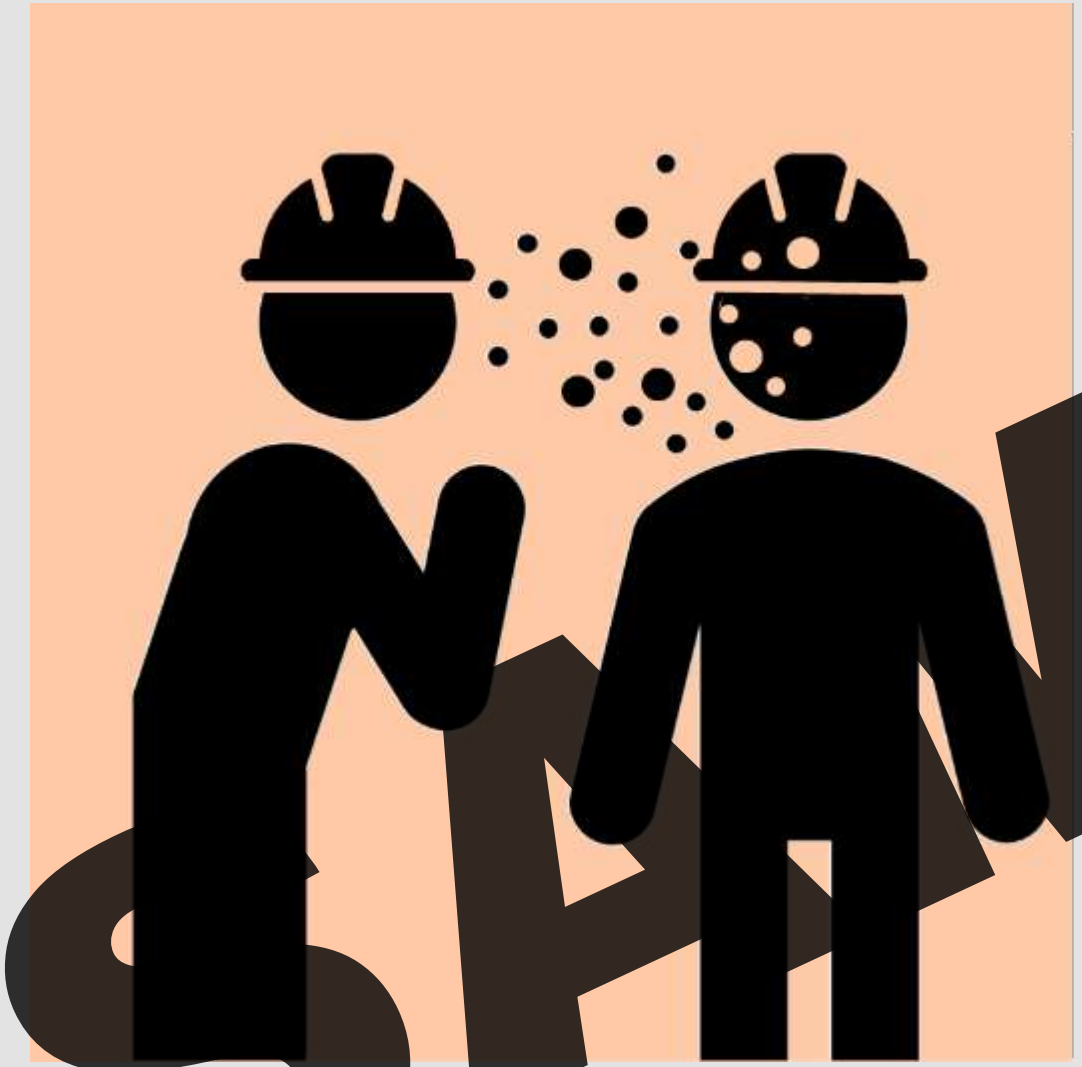
This is not an isolated event. Though not all biological hazards result in worldwide pandemics, contact with them can result in lifelong injuries and even death.


**Biological hazards** are any organic substances that can cause harm to humans or other living organisms. Examples of biological hazards are insect stings and animal droppings. Many occupations encounter biological hazards daily.

There are five main sources of biological hazards: microorganisms, fungi, plants, insects, and animals. We will discuss each of these categories in depth, detailing how to mitigate risks, as well as how to respond if an incident occurs.



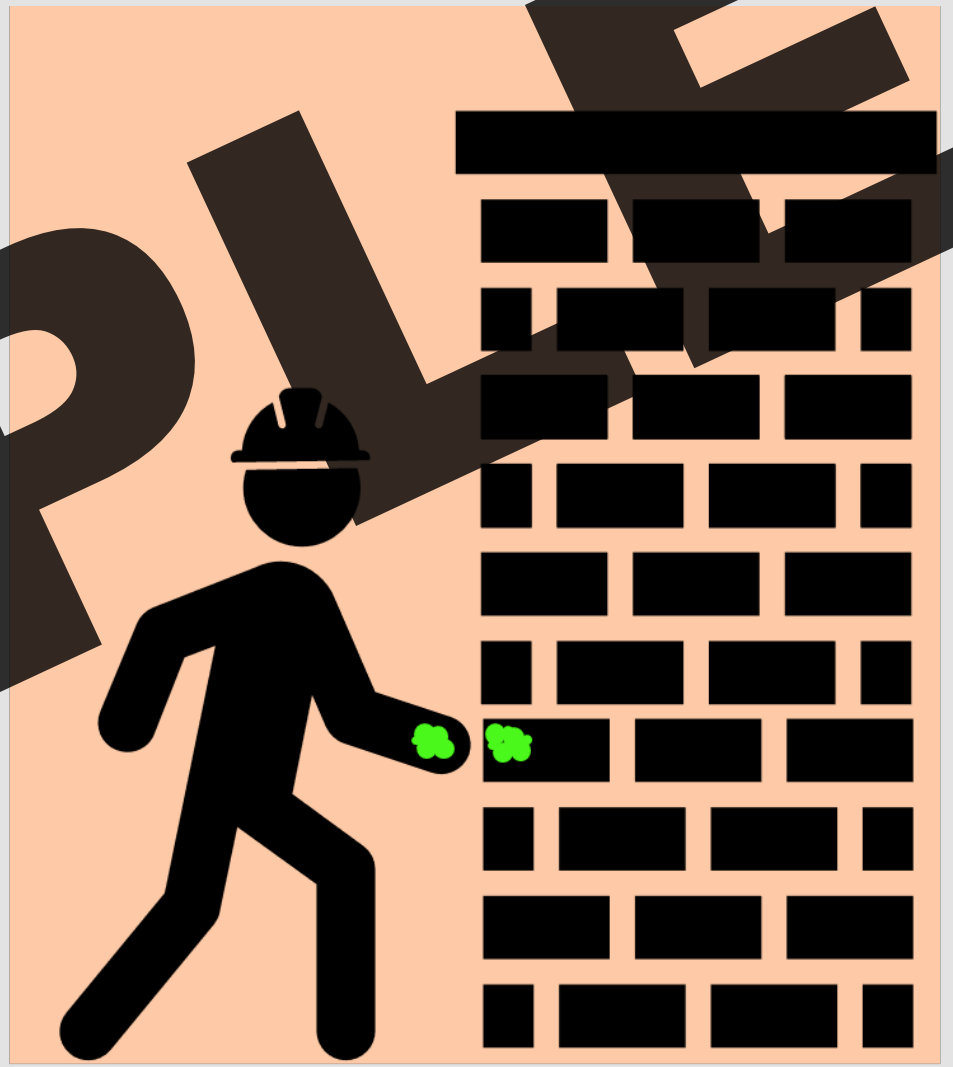
There are three major routes of entry for biological matter. These are inhalation, ingestion, and absorption. We will take a moment to discuss these in the next few slides.



Inhalation is, as the name implies, when bacteria is spread in the air and then inhaled by another individual. If someone around you is coughing or sneezing, try to stay a distance of at least six feet from them. This should put enough space between you so that you don't breathe in the particles.

Ingestion is when bacteria or contaminants are accidentally swallowed. If you were to touch a contaminated surface and then touch your mouth, the bacteria would most likely be ingested and could potentially cause an illness. Additionally, if you were to use the restroom and neglect handwashing, you could accidentally transfer fecal matter to the mouth.

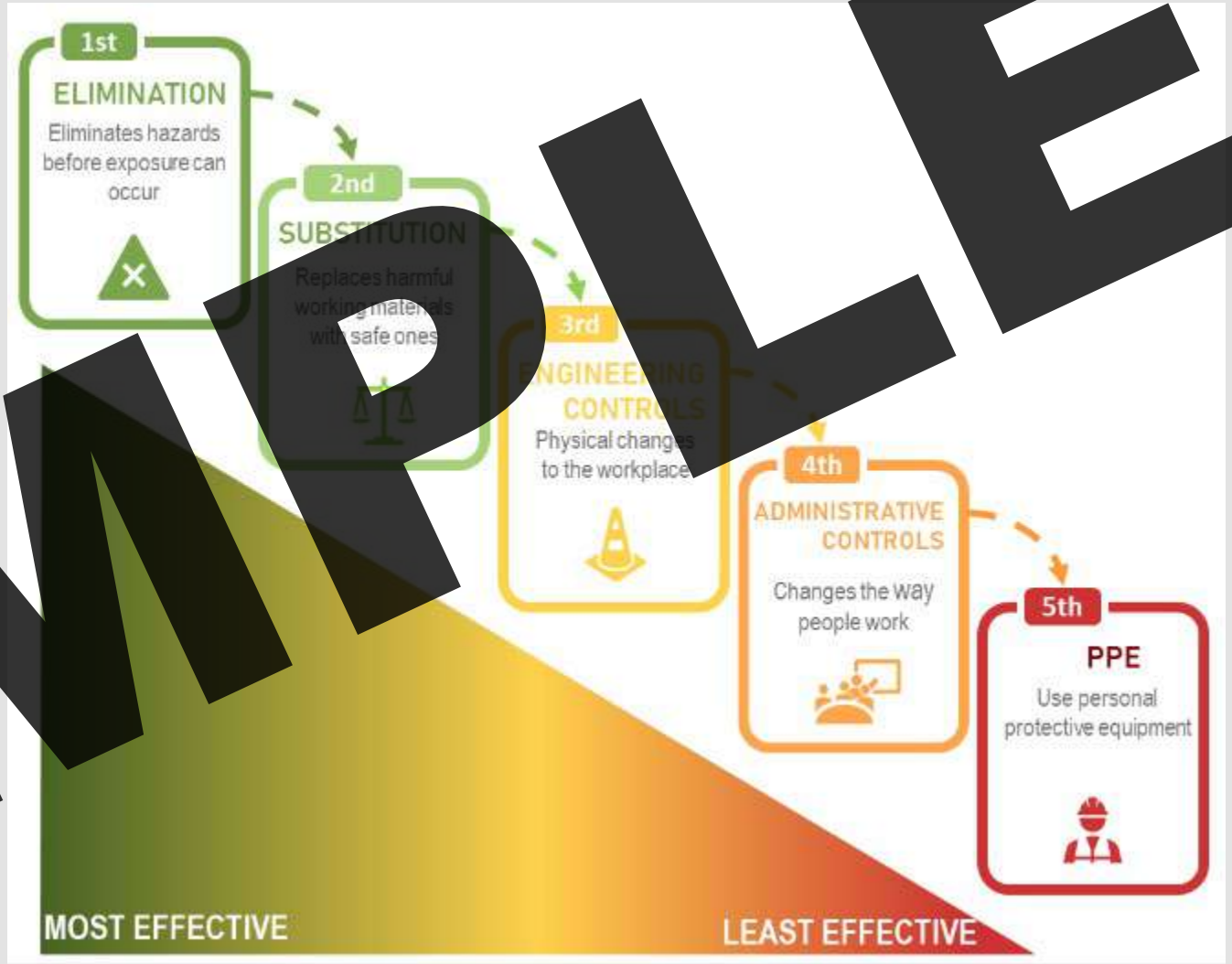
Absorption is when bacteria enters the body through either the eyes or skin. If an employee were to acquire bacteria on their hands and then touch their eyes, the bacteria could easily be absorbed into the body. For bacteria to enter the skin, there typically needs to be an entry point. Entry points are any areas with broken skin, such as a cut or scrape.




Because there are so many ways for hazardous materials to enter the body, it is important to eliminate hazards on the worksite. A good way to do this is by following the Hierarchy of Controls.

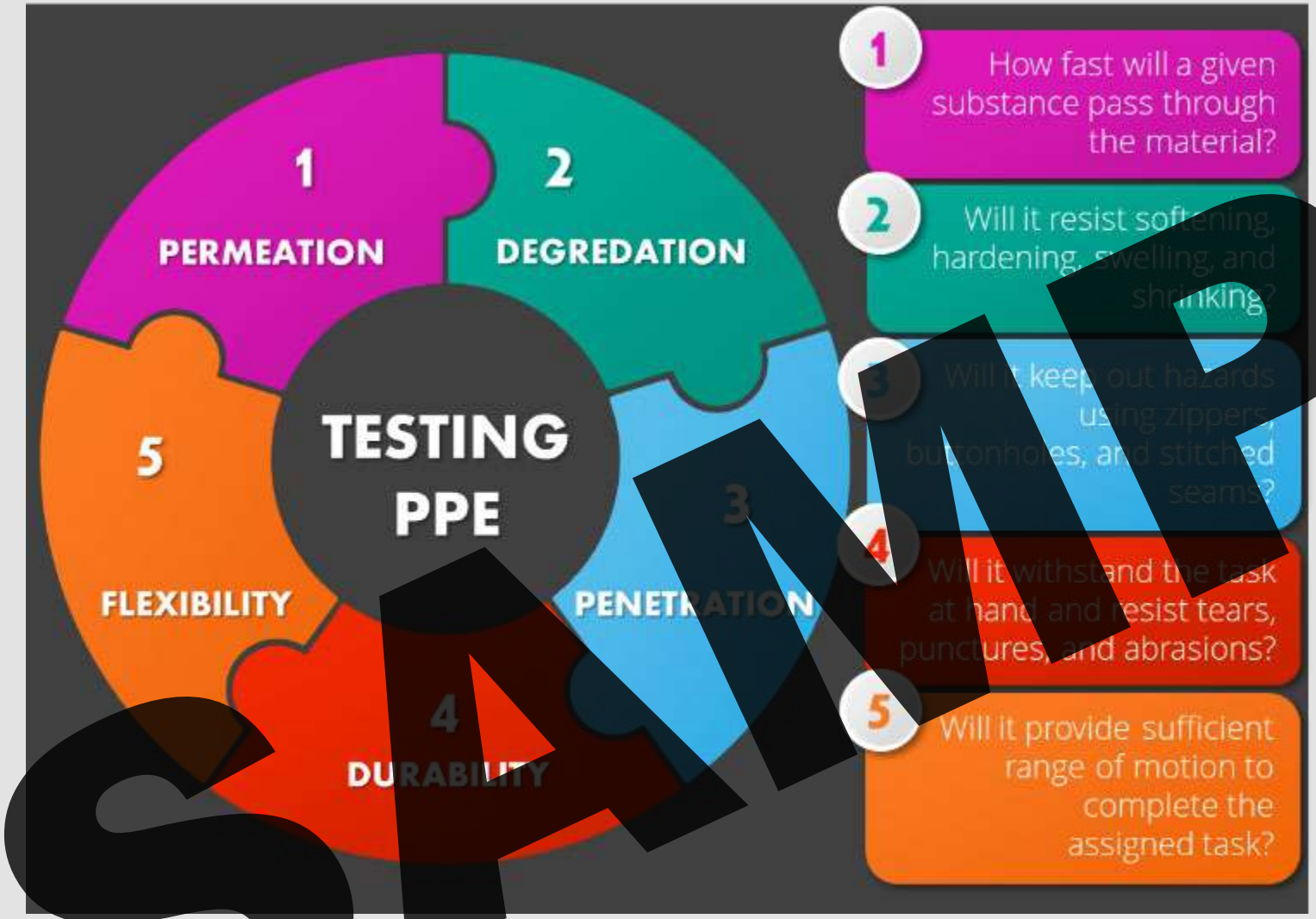
# Hierarchy of Controls

The Hierarchy of Controls details five methods of controlling hazards, from most to least effective. These control methods require that management and employees alike are involved. Ideally, employers should try to remove hazards from the worksite to eliminate employee exposure; however, in some cases that isn't possible.



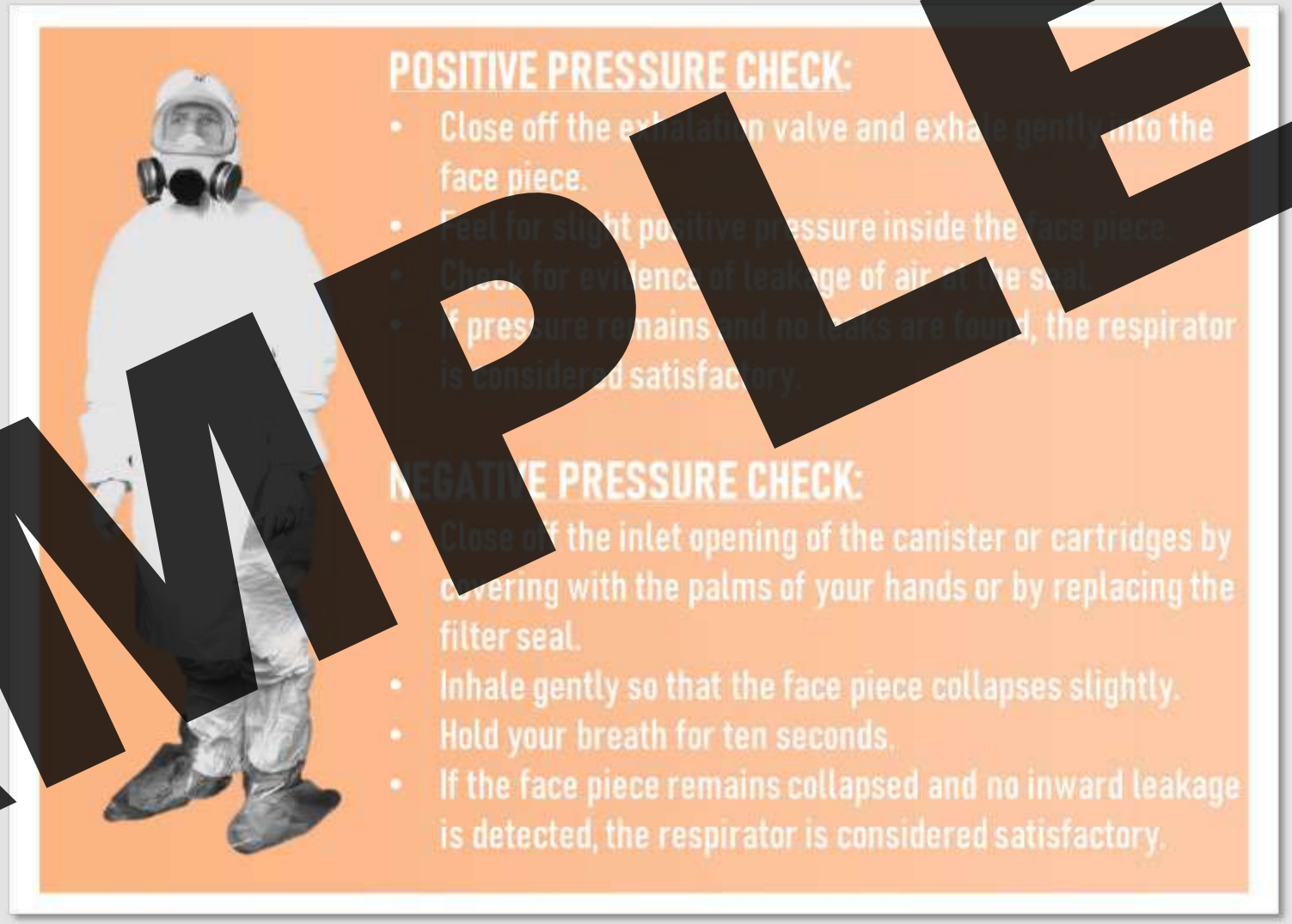
# Personal Protective Equipment (PPE)

Though it is considered the least effective in the hierarchy of controls, chances are you won't be able to completely avoid contact with the hazards we will discuss today. As such, PPE may be your best form of protection in these cases. PPE is the type of clothing and equipment provided to you as an employee to ensure your protection from hazardous materials. Though specifics may change based on the environment, PPE will typically include gloves, safety glasses, safety toe shoes, hard hats, and respirators.




PPE is only effective when it is in good condition and properly equipped. Employees should always check their PPE before beginning their assigned duties to ensure there is no wear and tear.

Many occupations require the use of respirators to prevent employees from inhaling toxic substances. It is important to inspect and fit respirators to ensure they will protect you from harmful toxins. This is done by performing a User Seal Check *before each use*. There are two main types of user seal checks: Positive Pressure Check and Negative Pressure Check.



The Life & Times

Monday, September 18, 2019 Safety in the Workplace- A3

Investigators looking into recent worker fatality

Federal Way – Early in the morning last Saturday, local construction workers hired to install several utility poles were involved in an accident that killed two and injured four. The horrific chain of events started with a relatively simple accident at 7 am during rush hour when a

Throughout this training, we will look at real, investigated accident profiles. In some cases, two or three similar accidents have been combined for the purpose of illustrating key safety principles. They will show just how quickly things can go wrong when safety procedures are ignored, resulting in injuries or fatalities.

# STANDARDS

**29 CFR 1910**

**Subsection J:** General Environmental Controls
**Subsection Z:** Toxic and Hazardous Substances

**1910.1200** - Hazard Communication
**1910.134** – Fit Testing Procedures
**1910.141** – Sanitation
**1910.151** – Medical and First Aid

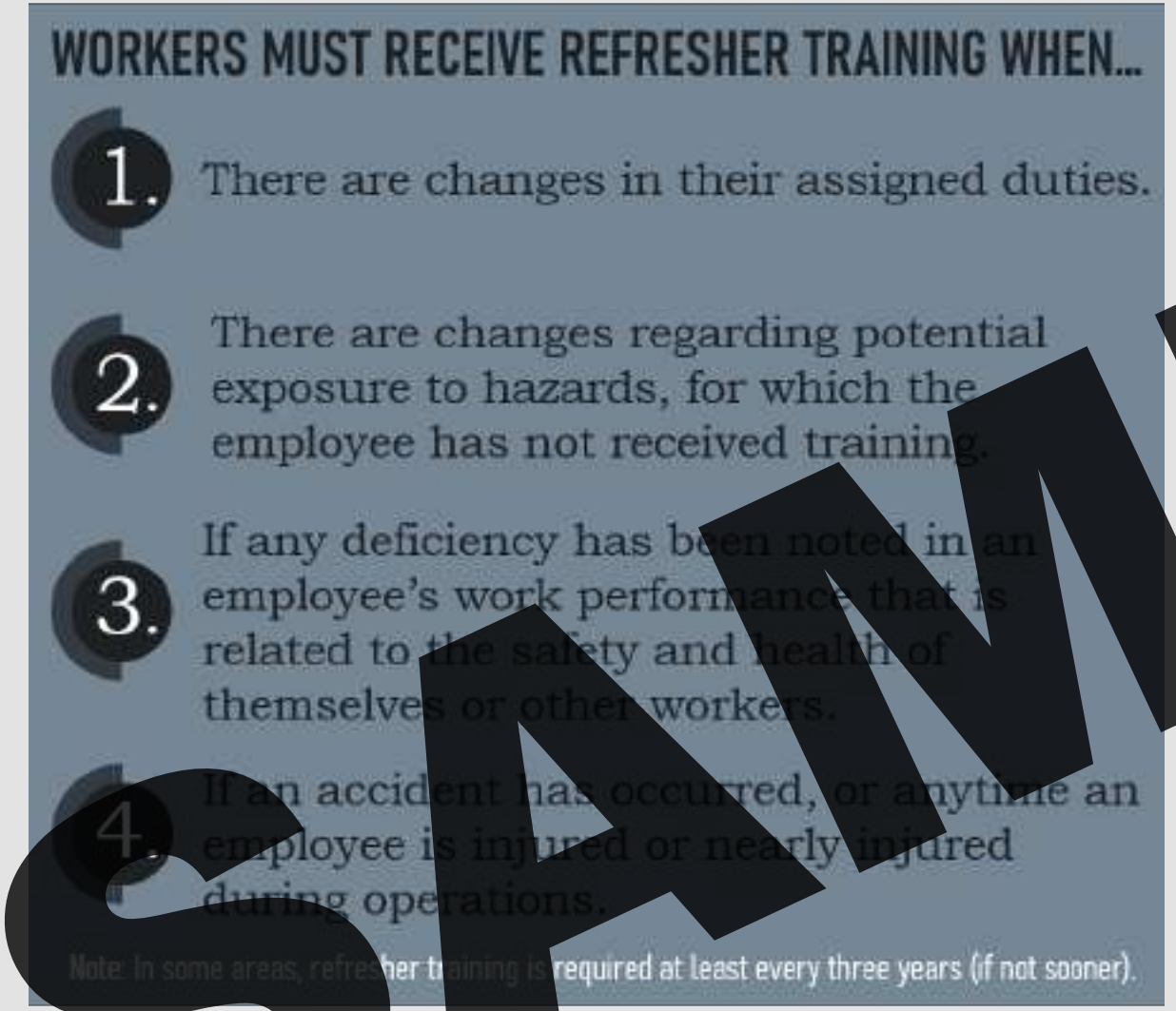


These are some of the main standards concerning biological hazards. Many states or provinces have additional standards, as do some industries. We have provided these as a guide, but it's your responsibility to know all federal, local, and company rules that apply to your job site.

# Why Training?

No matter the situation, it is common to hear workers and even employers ask, “Where does it state we need to be trained?” Can’t a worker also be deemed “qualified” based on experience? The answer is “no.” Experience helps, yes, but regulations are very clear that employees must be trained (no matter how long they’ve been on the job) and that it is the employer who is responsible for overseeing that safety training, ensuring employees have the understanding, knowledge, and skills needed to operate safely.


Initial training and refresher training, as well as any written and practical evaluations, must be documented and filed. At the very least, employers need to show proof of proper and consistent training (in the way of training outlines, class lists, training goals, tests, certificates, and so on.) These documents should include the name of the person who taught the class or conducted the evaluation.




Training is not just a one-and-done occurrence; it is on-going. In fact, training should take place whenever there is a demonstrated need for it. We have listed several instances when refresher training would be required. Can you think of any others?

The extent of training will be determined by the employer, but at the very least it should include classroom instruction followed by a written and practical examination that prove continued competency.

The following sections will address the most common biological hazards encountered by employees, including microorganisms, fungi, plants, insects, and animals. For each hazard, we will discuss how to recognize the hazard, evaluate the situation, and respond properly.

# Microorganisms