1. To test for \_\_\_\_\_\_\_\_\_\_, use a \_\_\_\_\_\_\_\_\_\_ detector or chemical analysis.

1. \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ can be detected by means of \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ detectors, multi-gas detectors, or by chemical analysis.

1. \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ is produced by burning and by the detonation of explosives.

1. A mixture of \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ in air reduces the explosive limit of methane.

1. \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ to two percent methane together with coal dust in air may be explosive.

1. Mines below the \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ tend to have more methane than those above the \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_.

1. After a \_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_ in a mine, rescue teams are usually needed to go into the mine to assess and re-establish ventilation.

1. The range of \_\_\_\_\_\_\_\_\_\_ within which a gas will \_\_\_\_\_\_\_\_\_\_ are known as its “explosive range”.

1. Any \_\_\_\_\_\_\_\_\_\_ gas can explode under certain \_\_\_\_\_\_\_\_\_\_ .

1. \_\_\_\_\_\_\_\_\_\_ firefighting methods allow \_\_\_\_\_\_\_\_\_\_ to remain a safe distance from the fire.
2. Temporary seals are \_\_\_\_\_\_\_\_\_\_ before permanent seals are \_\_\_\_\_\_\_\_\_\_ in order to seal off a fire area as quickly as possible.

1. In mines where \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ (roof coal) is left, a fire will spread more rapidly.

1. One hazard of heat during a fire is that it tends to weaken the roof, especially where \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ is left.

1. Fires can be attacked by the use of a \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ from a distance of 500-1,500 feet.

1. It is generally recommended that teams not travel through \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ areas.

1. One method of \_\_\_\_\_\_\_\_\_\_ firefighting is \_\_\_\_\_\_\_\_\_\_ the sealed fire area with water.

1. Once an \_\_\_\_\_\_\_\_\_\_ has occurred, there is always the possibility of further \_\_\_\_\_\_\_\_\_\_ .

1. Mine rescue teams may find it necessary to use \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ to sweep noxious or explosive gases from a face area.
2. Once ventilation has been re-established and fresh air advanced, non-apparatus crews can take over the \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ effort.

1. Rescue teams are responsible for assessing damage to the \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ .
2. Information the team relays to the fresh-air base as it proceeds is known as the “\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ ”.

1. It is the responsibility of \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ members to have all the information needed to do the work.

1. When a team locates a \_\_\_\_\_\_\_\_\_\_ , its location and position should be marked on a mine map and on the roof or rib close to the \_\_\_\_\_\_\_\_\_\_ .

1. The rescue team \_\_\_\_\_\_\_\_\_\_ should regulate the team’s \_\_\_\_\_\_\_\_\_\_ according to conditions encountered.

1. When a body is \_\_\_\_\_\_\_\_\_\_ located, every effort should be made not to \_\_\_\_\_\_\_\_\_\_ any possible evidence in the area.

1. In situations too \_\_\_\_\_\_\_\_\_\_ for teams to explore and \_\_\_\_\_\_\_\_\_\_ safely, teams may be instructed to seal the area.

1. \_\_\_\_\_\_\_\_\_\_ mine rescue team members must have at least \_\_\_\_\_\_\_\_\_\_ hours of instruction on the breathing apparatus used by the team.

1. Before the team leaves the fresh-air base to \_\_\_\_\_\_\_\_\_\_ inby, the captain should take note of the time of \_\_\_\_\_\_\_\_\_\_ .

1. It is recommended that team checks be conducted every \_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_ minutes.

1. It is \_\_\_\_\_\_\_\_\_\_ that the first stop for a team \_\_\_\_\_\_\_\_\_\_ be just inby the fresh-air base.

1. \_\_\_\_\_\_\_\_\_\_ should report the lowest \_\_\_\_\_\_\_\_\_\_ member’s oxygen reading at each team check.

1. “\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ ” is the process by which you systematically explore all crosscuts and adjacent areas as you advance.

1. As the team advances \_\_\_\_\_\_\_\_\_\_ , the captain takes the \_\_\_\_\_\_\_\_\_\_ .

1. It is important that the team \_\_\_\_\_\_\_\_\_\_ its \_\_\_\_\_\_\_\_\_\_ so that it can return to the fresh air base on time.

1. As the team advances, the map man \_\_\_\_\_\_\_\_\_\_ what the team \_\_\_\_\_\_\_\_\_\_ by marking the information on a mine map.

1. The team is responsible for choosing the exact \_\_\_\_\_\_\_\_\_\_ within \_\_\_\_\_\_\_\_\_\_ for building seals.

1. \_\_\_\_\_\_\_\_\_\_ causes a lack of orientation which may cause a team member to lose his/her sense of \_\_\_\_\_\_\_\_\_\_ .

1. Class B fires involve \_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_ liquids.

1. Class D fires involve \_\_\_\_\_\_\_\_\_\_ metals.

1. Before \_\_\_\_\_\_\_\_\_\_ a hand held extinguisher it must be \_\_\_\_\_\_\_\_\_\_ for the type of fire you are fighting.
2. \_\_\_\_\_\_\_\_\_\_ is the ability of a gas to be \_\_\_\_\_\_\_\_\_\_ in water.

1. Pools of \_\_\_\_\_\_\_\_\_\_ can release water soluble gases into the air when they are stirred up.

1. \_\_\_\_\_\_\_\_\_\_ expansion foam is light and resilient and can travel long distances to a fire without \_\_\_\_\_\_\_\_\_\_ down.

1. \_\_\_\_\_\_\_\_\_\_ expansion foam is very wet and heavy and can only be used when you’re close enough to a fire to \_\_\_\_\_\_\_\_\_\_ the foam directly onto the fire.

1. Carbon monoxide is \_\_\_\_\_\_\_\_\_\_ .

1. Oxygen is a \_\_\_\_\_\_\_\_\_\_ of combustion.

1. If smoke is so \_\_\_\_\_\_\_\_\_\_ as to make visibility poor, you may need to keep in constant physical contact with an object or a \_\_\_\_\_\_\_\_\_\_ in order to feel your way along.

1. Two types of fire cannot be fought directly, fuel rich and \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ ).

1. Team safety must not be \_\_\_\_\_\_\_\_\_\_ .

1. Monitoring \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ helps to determine the effectiveness of firefighting and the potential danger of an explosion.
2. Sulfur dioxide and hydrogen sulfide are \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ gases.

1. Color, odor, and taste are \_\_\_\_\_\_\_\_\_\_ properties that help to identify gases during \_\_\_\_\_\_\_\_\_\_ exploration.

1. Only detectors and chemical analysis can \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ a gas.

1. The effects of toxic gases depend on the \_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_ , and exposure time.

1. \_\_\_\_\_\_\_\_\_\_ are gases which cause \_\_\_\_\_\_\_\_\_\_ or choking.

1. Firedamp is a mixture of methane in air that will \_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_ when ignited.

1. If there is a sufficient amount of \_\_\_\_\_\_\_\_\_\_ in smoke, the smoke may be \_\_\_\_\_\_\_\_\_\_ .

1. Ventilation controls are used underground to properly \_\_\_\_\_\_\_\_\_\_ air to all \_\_\_\_\_\_\_\_\_\_ of the mine.

1. Gases with specific gravities less than 1.0 tend to seek \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ .

1. Gases with specific gravities greater than 1.0 tend to seek \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ .
2. In order to maintain an \_\_\_\_\_\_\_\_\_\_ , one door of the \_\_\_\_\_\_\_\_\_\_ must be kept closed while the other is opened.

1. Rescue teams should build an \_\_\_\_\_\_\_\_\_\_ so that the two \_\_\_\_\_\_\_\_\_\_ are erected as close together as possible yet with enough space to allow room for the team and their equipment to fit in between.

1. If the fresh air base is underground, it should be located where it’s assured a fresh air \_\_\_\_\_\_\_\_\_\_ to the \_\_\_\_\_\_\_\_\_\_ .

1. The fresh air base should be \_\_\_\_\_\_\_\_\_\_ where it’s assured \_\_\_\_\_\_\_\_\_\_ ventilation and fresh air.

1. Elevators should be \_\_\_\_\_\_\_\_\_\_ before use following a \_\_\_\_\_\_\_\_\_\_ .

1. As a team \_\_\_\_\_\_\_\_\_\_ , it is important to stay in close \_\_\_\_\_\_\_\_\_\_ with the fresh air base/command center.

1. Methane is \_\_\_\_\_\_\_\_\_\_ than air.

1. \_\_\_\_\_\_\_\_\_\_ air has a specific gravity of one.

1. Sufficient time should be allowed for a fire area to \_\_\_\_\_\_\_\_\_\_ before it is \_\_\_\_\_\_\_\_\_\_ .

1. Team captains should \_\_\_\_\_\_\_\_\_\_ roof and ribs before the team members \_\_\_\_\_\_\_\_\_\_ into the area.
2. The \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ should be tested before extinguishing a fire.

1. \_\_\_\_\_\_\_\_\_\_ areas should be marked to \_\_\_\_\_\_\_\_\_\_ other teams that may enter the area after yours.

1. \_\_\_\_\_\_\_\_\_\_ reports should include \_\_\_\_\_\_\_\_\_\_ on roof and rib conditions and gas conditions.

1. The time spent under oxygen by a rescue team is usually limited to \_\_\_\_\_\_\_\_\_\_ hours or \_\_\_\_\_\_\_\_\_\_ .

1. When looking for \_\_\_\_\_\_\_\_\_\_ , it is important to both look and listen for \_\_\_\_\_\_\_\_\_\_ .

1. For a Class C fire (\_\_\_\_\_\_\_\_\_\_ ), if power has been cut off to the burning \_\_\_\_\_\_\_\_\_\_ , it may be treated as a Class A or B fire.

1. When survivors are \_\_\_\_\_\_\_\_\_\_ , their location, identities, and condition should be \_\_\_\_\_\_\_\_\_\_ immediately to the command center.

1. When survivors are \_\_\_\_\_\_\_\_\_\_ , the location, time, and date should be marked on the team’s map and on the \_\_\_\_\_\_\_\_\_\_ where they are found.

1. When \_\_\_\_\_\_\_\_\_\_ are located, they should be \_\_\_\_\_\_\_\_\_\_ to safety and fresh air as quickly as possible.

1. The main objective of \_\_\_\_\_\_\_\_\_\_ work is to put the \_\_\_\_\_\_\_\_\_\_ area of the mine back in operation as soon as possible.
2. All \_\_\_\_\_\_\_\_\_\_ seals should be well hitched in the floor roof, and ribs to \_\_\_\_\_\_\_\_\_\_ their strength.

1. \_\_\_\_\_\_\_\_\_\_ foam is an effective sealant when used around the \_\_\_\_\_\_\_\_\_\_ of a seal.

1. High \_\_\_\_\_\_\_\_\_\_ coal burns much faster than low or medium \_\_\_\_\_\_\_\_\_\_ coal.

1. It may be necessary to double or triple the thickness of the material in order to improve the effectiveness of a \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ .

1. Seals should be built at locations with good \_\_\_\_\_\_\_\_\_\_ and even roof and \_\_\_\_\_\_\_\_\_\_ .

1. Rescue teams may encounter many \_\_\_\_\_\_\_\_\_\_ while fighting fires directly by \_\_\_\_\_\_\_\_\_\_ .

1. When fires are sealed in \_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_ mines, a thick coating of rock dust should be applied to the ribs, roof and floor for several hundred feet outby the seals.

1. The main objectives of \_\_\_\_\_\_\_\_\_\_ work during a mine fire are \_\_\_\_\_\_\_\_\_\_ the fire and assessing conditions in the fire area.

1. A self-contained breathing apparatus is a \_\_\_\_\_\_\_\_\_\_ portable unit that supplies oxygen or air \_\_\_\_\_\_\_\_\_\_ of the surrounding atmosphere.

1. A smoke tube is used to show the \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ of slow moving air.
2. If a team member must \_\_\_\_\_\_\_\_\_\_ to the fresh air base because of a \_\_\_\_\_\_\_\_\_\_ , it is standard practice among teams for the entire team to go back with that person.
3. \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ cameras should only be used in less than 1 percent of Methane.

1. Once rescued, survivors should never be left alone.

1. The lower explosive limit of hydrogen is 4.0 percent.

1. The IDLH of Nitrogen Dioxide is 20 ppm.

1. \_\_\_\_\_\_\_\_\_\_ , dry air at sea level is made up of \_\_\_\_\_\_\_\_\_\_ percent nitrogen and 21 percent oxygen.

1. After a fire has been \_\_\_\_\_\_\_\_\_\_ , it is recommended to wait 72 hours before making the initial visit to the \_\_\_\_\_\_\_\_\_\_ .

1. When \_\_\_\_\_\_\_\_\_\_ , a fire area is not un-sealed until the oxygen content is low enough to make explosions \_\_\_\_\_\_\_\_\_\_ and the carbon monoxide has disappeared.

1. Firefighters force \_\_\_\_\_\_\_\_\_\_ gases into areas where they are trying to remove the \_\_\_\_\_\_\_\_\_\_ leg of the fire triangle.

1. A team is a unit made up of \_\_\_\_\_\_\_\_\_\_ working toward a \_\_\_\_\_\_\_\_\_\_ goal.