

UNIT 5 – Technology for Humanity

Reading 1

C-THRU HELMET

Though their name suggests they battle only flames, firefighters have another, more dangerous **foe**, in the form of smoke. When dense smoke fills enclosed spaces, visibility is zero, and firefighters have to find their way around by touch and hearing. Nobody inside a burning building



can survive beyond a few minutes in the choking atmosphere, including those trying to rescue people. Using a combination of incredible technologies, a concept helmet called the C-Thru has been designed to give firefighters some crucial advantages over current gear when they're trying to save people's lives.

Firefighters usually need to be ready for action in 90 seconds after a call, so the C-Thru Helmet is designed to be put on quickly and easily, even at night in a fire engine going at full speed. The C-Thru Smoke Diving Helmet **aims** to provide firefighters with all of the information they need to find people in burning buildings, without the need to carry extra equipment. Furthermore, it helps communicate firefighters during an incident, which will allow "smoke divers" (firefighters who primarily work inside burning buildings) to work faster, safely, and more effectively.

The C-Thru Helmet includes image processing, communication, and audio systems. An optical thermal camera on the anterior part of the helmet captures image data from the situation. The data is transmitted to a device held by the firefighters' team leader outside the building. This device processes the data and transmits it back to the firefighters' helmets, which project **it** on the visor. To improve hearing as well as vision, the helmet's audio system cancels the sound of the wearer's breathing and unimportant noise.

Like firefighters, people who venture into other extreme environments have to wear protective clothing and life-support systems. One of the most dangerous places on Earth is at the bottom of an ocean. The pressure of the water will crush divers to death unless they are protected by an atmospheric diving suit. Resembling a suit of armor, this suit enables a diver to breathe and work at depths of 2,000 ft (600 m). At this level, pressure is 60 atmospheres, or 60 times the atmospheric pressure at the surface of the ocean.

*Adapted from *How Super Cool Tech Works*. DK Publishing.

Answer the following questions:

1. According to paragraph 1, what is a very risky element firefighters must face when there's a fire?
 - a. Not being able to see very well.
 - b. Hot spaces
 - c. Burning helmets
 - d. Not having some technological equipment.
2. The word **foe** in paragraph 1 is closest in meaning to
 - a. job
 - b. flame
 - c. enemy
 - d. place

3. What is stated about the C-Thru Helmet in paragraph 1?
 - a. It helps to extinguish fire more quickly.
 - b. It won't let firefighters die from choking.
 - c. It brings some benefits some existing equipment doesn't have.
 - d. It combines some technology that has never been used before.
4. What is NOT stated about the C-Thru Helmet in paragraph 2?
 - a. Putting the helmet on can be done instantly.
 - b. It gives firemen some important data to rescue a person during a fire.
 - c. The technology included in the helmet allows firemen to talk while on a rescue mission.
 - d. Apart from the C-Thru Helmet, Firemen must carry some extra equipment to detect people.
5. The word **aims** in paragraph 2 is closest in meaning to
 - a. points a gun
 - b. influences
 - c. films
 - d. serves the purpose of
6. Who can be called a "smoke diver"?
 - a. A fireman who rescues a person from a stuck elevator.
 - b. A fireman who helps people during a car crash.
 - c. A fireman who helps rescue cats from trees.
 - d. A fireman who gets inside an office in fire.
7. According to paragraph 3, where is the helmet's optical thermal camera located?
 - a. at the top
 - b. On the front
 - c. At the back
 - d. On the side
8. The word **it** in paragraph 3 is closest refers to
 - a. building
 - b. device
 - c. data
 - d. visor
9. Which words represent the analogy **smoke-C-thru helmet** in the last paragraph?
 - a. Pressure / Atmospheric diving suit
 - b. Diver / System
 - c. Environment / Ocean
 - d. Surface of the ocean / Dangerous places