Name :

Class :

No. :

STUDENT WORKSHEET

STIMULATION

Based on the video that has been shown, what can you conclude from the video?

PROBLEM STATEMENT

Pay attention to the following phenomenon!

Figure 1. Lapindo Mud

Bisnis.com, JAKARTA - The Lapindo mudflow in Sidoarjo, East Java, has not stopped since the first burst in 2006. Seventeen years ago a burst emerged due to the activities of PT. Lapindo Brantas which has a gas drilling well about 200 meters from the mudflow location.

The mudflow made dozens of villages around the Lapindo mudflow uninhabitable, so many residents had to move houses. The government's efforts to stop the Lapindo mudflow have been in vain, although there is a glimmer of hope, recently researchers succeeded in finding suspected metal content that the world is hunting for.

The Metal Content of Lampindo Mud is Hunted by the World

The Geological Agency of the Ministry of Energy and Mineral Resources (ESDM) conducted research on the metal content of the Lapindo mud. It turns out that after researching it contains rare earth metals which are being hunted by the world. This metal is very unique and hard to find. Lecturer in Chemistry, Faculty of Science and Technology, Airlangga University (UNAIR) Dr. rer. Nat. Ganden Supriyanto, M.Sc explained that rare earth metals have significant benefits for technological development. Ganden explained that rare earth metals in the chemical formula of the periodic system fall into the lanthanide and actanide groups, these metals are also referred to as transition metals.

Meanwhile, rare earth metals are used as mixed materials in technological fields related to meterology, such as spacecraft materials, high energy lamps, and semi-conductors. Not only that, according to Ganden, the rare earth metals in the Lapindo mud are very valuable, even more expensive than gold and platinum. "The discovery of rare earth metals in the Lapindo Mud of Sidoarjo has enormous utilization potential because it has high value and is very important for future high technology," he concluded..

Sources: https://ekonomi.bisnis.com/read/20230526/44/1659722/lebih-mahal-dari-emas-lumpur-lapindo-mengandung-logam-diburu-dunia-apa-itu

After reading the article, develop your curiosity in the form of questions by writing at least 2 questions!

COLLECTION AND PROCESSING DATA

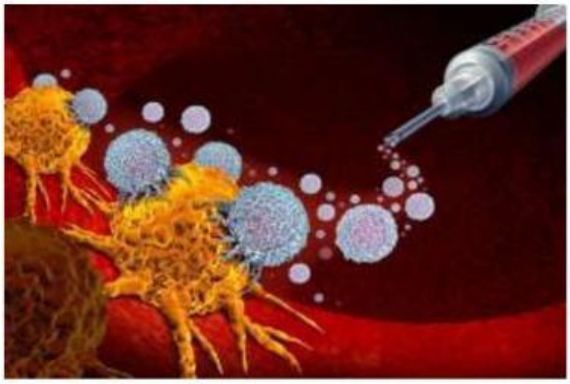

Figure 2. Nanotechnology in Medicine

Nanotechnology is a science that continues to be developed. The concept of nanoscience originally emerged in the 1950s. Nano technology is an effort to manage objects with a very small nano size to produce desired properties. This means that nanotechnology is used to control an object from its smallest core. The types of objects controlled are very diverse. This is what makes nano technology even more useful, namely because it can be used for all needs. Nanotechnology is important because of its advantages in understanding, using, and controlling small amounts of matter, similar to the atomic level, used to create new materials, instruments, and frameworks.

One of the biggest benefits that can be felt from nanotechnology is the benefits of nanotechnology in the world of health. Nanotechnology is a technology that is very useful in the world of health. One of the nanotechnology discoveries that has helped the most in the world of health is the discovery of nanotechnology for the treatment of cancer and tumors. In the world of health today, nanotechnology can be found in the form of nanotubes. This nanotechnology is a technology used by the medical field to attack cancer cells and tumor cells in the body and paralyze them. This treatment has been carried out by injecting cancer and tumor cells with these nanotubes. In the body, nanotubes will form a device to laser cancer cells and tumors so that they will die from the inside. This is what can help cure cancer and tumors without surgery.

1. Based on the article above, what can you understand about nanotechnology?

2. What are the advantages of nanotechnology in the treatment of cancer and tumors?

3. Try to explain how important nanotechnology is using your own language!