

LKPD

GLOBAL WARMING

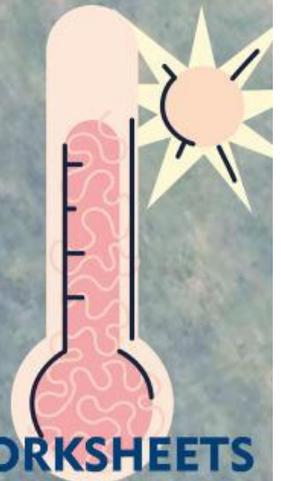
CLASS VII / EVEN SEMESTER



Name:

Class:

Attendance Number:



LEARNING OUTCOMES

Students identify interactions between living things and their environment, and can design efforts to prevent and overcome pollution and climate change. Students identify the inheritance of traits and the application of biotechnology in everyday life.

LEARNING OBJECTIVES

After following this lesson, students are expected to be able to:

1. Describe global warming and greenhouse effect and human activities that produce greenhouse gases through observing the video and phet simulation
2. Analyze the causes and impacts of global warming correctly through correct matching activities
3. Understand global warming and the greenhouse effect through answering questions correctly.

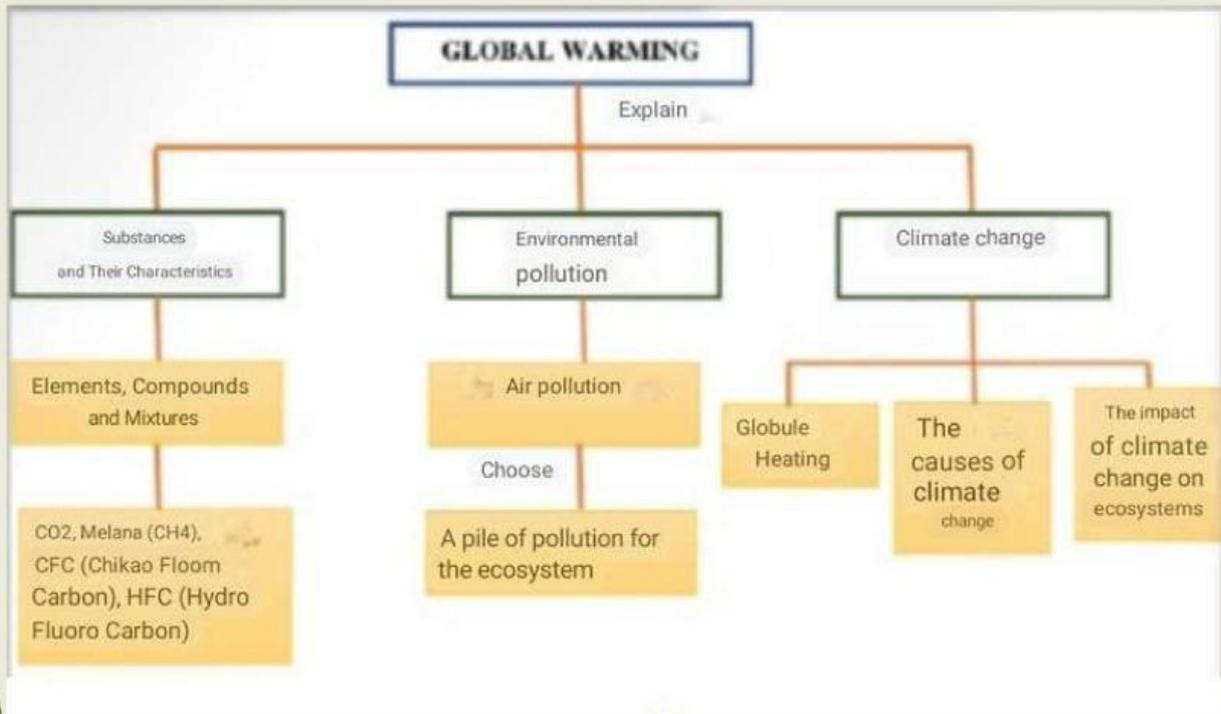
PANCASILA STUDENT PROFILE

1. Independent
2. Think Critically

UNDERSTANDING

1. Students can independently identify the topics that have been presented
2. Students work individually to strengthen the concept of personal understanding
3. Students can identify solutions to the problem of global warming and efforts to overcome global warming

MAP MATERIAL



WORKING INSTRUCTIONS

1. Read a prayer before starting learning activities
2. Work on the LKPD independently and honestly
3. Before reading the questions, pay close attention to the reading and video presented carefully
4. Read and understand well the objectives that will be achieved after studying the E-LKPD
5. Ask the teacher to clarify the instructions on the E-LKPD if necessary.
6. Work on the problems given properly and precisely. Each problem must be solved step by step.
7. Ask the teacher for help if you have difficulty understanding the LKPD instructions and activities

LKPD

Global Warming

Activity 1

What is global warming?

Watch the following learning video!



A. Place the word that matches the definition of “Global Warming” in the space provided below.

Global warming is the gradual increase in the average
of and as well as changes that are
believed to alter Earth's climate.

Earth's atmosphere

permanently

temperature

oceans

LKPD

Global Warming

B. Place the word that matches the definition of "Greenhouse Effect" in the space provided below.

The greenhouse effect is _____ that occurs when certain _____ in the Earth's _____ trap _____

warming process

gases

heat

atmosphere

C. Which gases cause the greenhouse effect?

CO₂

H₂O

NO

CFC

O₂

NH₄

CH₄

D. Answer the following questions! Write your answers in the box provided!

1. Increasing carbon dioxide, methane, nitrous oxide, ozone and CFC gases in the Earth's atmosphere is called.....
2. The process by which the global average temperature of the Earth's atmosphere and land rises, causing extreme weather and raising sea levels, is called.....

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Global Warming

E. Let's do some investigation!

Conduct an investigation to analyze the effect of greenhouse gas concentrations on earth's temperature through phet simulations

Work steps

1. Open the following link!

2. After accessing the link, there will be a display like the following.



Click "start sunlight" and start taking data according to table 1. and record the temperature observed in table 1.

3. After retrieving the data for table 1, then retrieve the data for table 2 by clicking as shown in the following display.



Change/click the button each year provided and observe the temperature and human activities that produce greenhouse gases. then record the results in table 2.

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Global Warming

Observation data

Investigation 1

Manipulated variable : Greenhouse gas concentration

Control variable : Clouds

Response variable : Temperature

| No. | Observed aspects | Greenhouse gas concentration | | |
|-----|------------------|------------------------------|--------|------|
| | | No greenhouse gases (None) | Medium | Lots |
| 1. | Temperature (°C) | | | |

Investigation 2

Manipulated variable : Human activities that produce greenhouse gases

Control variable : Clouds

Response variable : Temperature

| No. | Observed aspects | In the th year- | | | |
|-----|--|-----------------|------|------|------|
| | | Ice Age | 1750 | 1950 | 2020 |
| 1. | Temperature (°C) | | | | |
| 2. | Human activities that produce greenhouse gases | | | | |

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Global Warming

Data analysis

- From the data in table 1. analyze the effect of greenhouse gas concentrations on the increase in earth's surface temperature!

- From the data in table 1. analyze human activities that produce greenhouse gas concentrations and earth temperature from year to year

- From the experiments and investigations that have been carried out, what actions can be taken to reduce the impact of global warming

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Global Warming

Activity 2

Connect the arrows to the correct answers in the image below!

Global Warming
Process



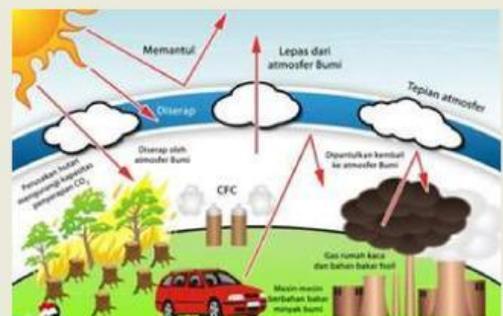
The Cause of
Global Warming



How to
Overcome Global
Warming



Impact of Global
Warming



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Global Warming

Activity 3

After completing activity 1 and 2, then answer the questions below.

- Global warming is....
 - greenhouse effect
 - the process of warming the earth
 - the process of increasing the average temperature of the Earth's atmosphere, oceans, and land masse
 - the process by which the earth becomes hotter
- Consider the following events!
 - Melting of polar ice caps
 - Climate change occurs
 - Cooler ambient temperature
 - Reduction of flora and fauna
 - The abundance of new plantsThe impact of global warming is indicated by the number....
 - 1, 2, and 4
 - 2, 3, and 5
 - 2, 3, and 4
 - 3, 4, and 5
- Forest destruction affects the ability to absorb gas....
 - O₂
 - H₂O
 - CO₂
 - CFC
- The substances released by livestock manure and decomposing garbage are....
 - Carbon dioxide
 - Methane
 - Water vapor
 - Oxygen

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Global Warming

5. Currently, the ozone layer in the stratosphere has been reduced because it has been contaminated by CFCs, also known as....
- A. Ether
 - B. Freon
 - C. Benzene
 - D. Aerosol

6. Consider the following activities!



The activity that produces CFC gas is shown in the picture....

- A. (1), (2), and (3)
 - B. (1) and (3)
 - C. (2) and (4)
 - D. (4) only
7. The most abundant greenhouse gas in Earth's atmosphere is....
- A. Water vapor
 - B. Carbon dioxide
 - C. Carbon monoxide
 - D. Methane
8. The following natural events can contribute the most carbon dioxide gas to the atmosphere....
- A. Tsunami
 - B. Earthquake
 - C. Volcanic eruptions
 - D. Hurricanes

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9. Take a look at the process of the greenhouse effect below!



1. Some of the radiation rays from the sun are reflected by clouds
2. Heat from the sun's radiation is partially absorbed by the earth
3. The greenhouse effect where some of the sun's heat that reaches the earth's surface is absorbed but some is reflected back into the atmosphere but is blocked by greenhouse gases and returned to the earth so that the earth is getting hotter
4. Some of the sun's radiation absorbed by the earth is reflected back into the atmosphere
5. The sun as a heat source emits radiation that is transmitted to the earth which is beneficial for life on the earth's surface 5.

The sequence of the greenhouse effect based on the picture is....

- A. 1-2-3-4-5
- B. 3-2-4-4-5
- C. 5-1-2-4-3
- D. 4-2-1-3-5

10. Pay attention to the following statements!

- 1) Save money on paper
- 2) Planting trees at home and school
- 3) Using a bicycle to school
- 4) Using motorcycle to school

The statement that represents students' efforts to reduce global warming is....

- A. 1, 2, and 3
- B. 2, 3, and 4
- C. 1, 3, and 4
- D. 1, 2, and 4

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Conclusion

- Make learning conclusions regarding the causes, impacts and alternative solutions to the problem of global warming



- thank you -