

## Introduction to Environmental Engineering Worksheet

# ANSWERS

### Vocabulary Definitions

1. environmental engineering:

The application of science and engineering knowledge and concepts to care for and/or restore our natural environment and/or solve environmental problems.

2. air pollutant:

A known substance in the air that can cause harm to humans and the environment.

3. global warming:

A measured increase in the average air temperature of the Earth.

4. greenhouse effect:

Heat from the sun is trapped inside the glass of a greenhouse and heats its air.

5. renewable resource:

A natural resource that can be replaced by a natural process.

6. non-renewable resource:

A natural resource that cannot be produced, re-grown or reused.

## General Question

1. List the three aspects of our natural world that environmental engineers are work to care for or restore:

- air quality
- land quality
- water quality

## Air Quality Questions

2. List three effects of poor air quality:

- global warming
- smog
- acid rain (another answer: respiratory and other illnesses)

3. From where do most air pollutants come?

Exhaust from trucks and cars, and exhaust from industrial plants.

4. List four major air pollutants and their chemical symbols:

- nitrogen oxides  $\text{NO}_x$
- sulfur oxides  $\text{SO}_x$
- carbon monoxide  $\text{CO}$
- carbon dioxide  $\text{CO}_2$

5. Complete the analogy below:

Carbon dioxide (a greenhouse gas) in the atmosphere is described as acting like glass in a greenhouse because they both trap heat.

6. List three ways people can help reduce the amount of air pollutants being released into the atmosphere: (other possible answers: ways governmental agencies are helping reduce air pollution)

- carpool
- hybrid cars
- walk, bike or use public transportation

## Land Quality Questions

7. List two examples of renewable resources :

- trees/wood
- water (another possible answer: solar energy)

8. List two examples of non-renewable resources:

- oil
- coal

9. What determines whether or not something is a renewable or non-renewable resource?

Whether or not it can be re-grown or replenished faster than it is being consumed.

10. List three problems that arise from land pollution:

- ruined crops from pesticides
- soil pollution from landfills
- acid mine drainage

11. List three easy ways that people can reduce the amount of land pollution:

- buy organic food
- use paper instead of plastic bags (or no bag, or a recycled/reusable bag)
- recycle