

# Centralized Exam 3

## Study Guide

### Grade 6



## Chapter 12:

### Environmental Impacts

## **Focus:**

### **Chapter 12:**

- 12.1 People and the Environment
- 12.2 Impacts on Land

#### **12.1 People and the Environment**

1. Clarifies the relationship between resources availability and population growth
2. Shows the effect of daily activities on the environment

#### **12.2 Impacts on Land**

1. Explain the consequences of land use as a resource
2. Develops mechanisms that help sound waste management to prevent pollution
3. What measures help protect the Earth?

## **Key Study Points:**

1. Clarifies the relationship between resources availability and population growth

### **Population Growth**

Until about the 1800s, the human population on Earth was lower than one billion. Presently, there are about 7.8 billion people.

1. The human population increased at a steady pace until the 1800s. After the 1800s, there was a **population explosion and the number of people on the planet increased sharply.**
2. **A population explosion** is a sharp increase in the population of a species.

### **The human population is increasing because of improvements in:**

1. health care
2. technology
3. access to clean water and other resources
4. money




→ Do you think Earth has enough resources to support everyone?

A; Earth has limited resources that are being used by **over 7 billion people**. Earth has a specific carrying capacity. This limits how long the available resources can support a species in a certain area.

**Carrying capacity is the maximum population size that can be supported by an area's resources over time.**

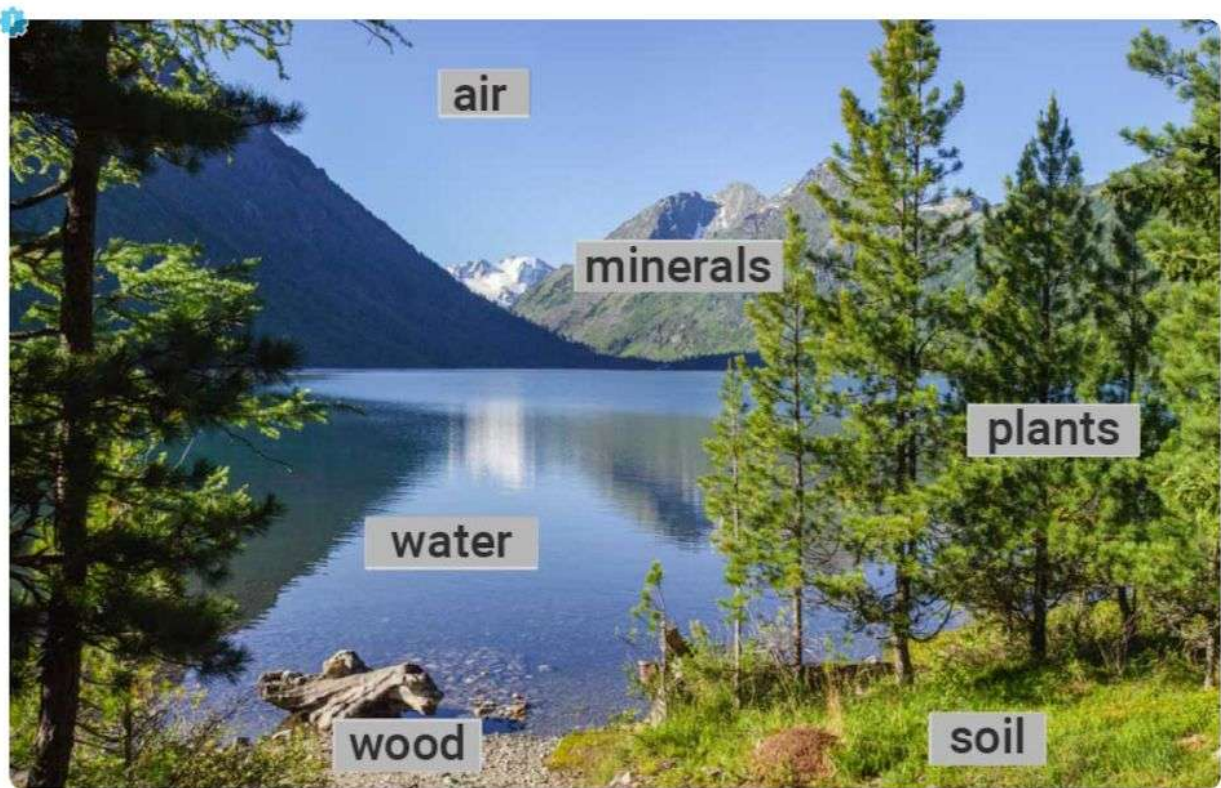
2. Shows the effect of daily activities on the environment

### Daily activities that Impacts the environment:

 <p><b>Metal</b></p> <p>The kitchen faucet and pipes are made from metal.</p> <p>Metals ores are mined from the ground. Mining causes habitat disruption and pollution.</p>	 <p><b>Cotton</b></p> <p>Dish towels are often made from cotton. Cotton comes from plants.</p> <p>Chemicals, such as fertilizers, are used in farming. If used incorrectly, they pollute the soil and water.</p>	 <p><b>Water</b></p> <p>Water used in your home is freshwater.</p> <p>Only about 0.9% of all the water on Earth is suitable for use. The rest is either salt water or trapped in ice.</p>
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1. Minerals are mined
2. towels/clothing come from cotton plants
3. Fresh water is used in our homes

## Managing our resources:



### 3. Explain the consequences of land use as a resource

1. **Deforestation:** Deforestation occurs when large areas of forest land are cleared away for land development or other human activities.

Impacts:

- Soil erosion
- Loss of habitats
- Climate Change

2. **Agriculture and the Nitrogen Cycle:** The nitrogen cycle describes how nitrogen moves between bacteria, plants, animals, the atmosphere and soil

3. **Desertification:** Desertification occurs when soil erosion happens at a high rate. Soil erosion is a result of deforestation, over-farming and overgrazing

4. **Mining:** Rocks and minerals are taken from the ground through mining. They are sold for profit and used in different products.

4. Develops mechanisms that help sound waste management to prevent pollution

### Waste management:

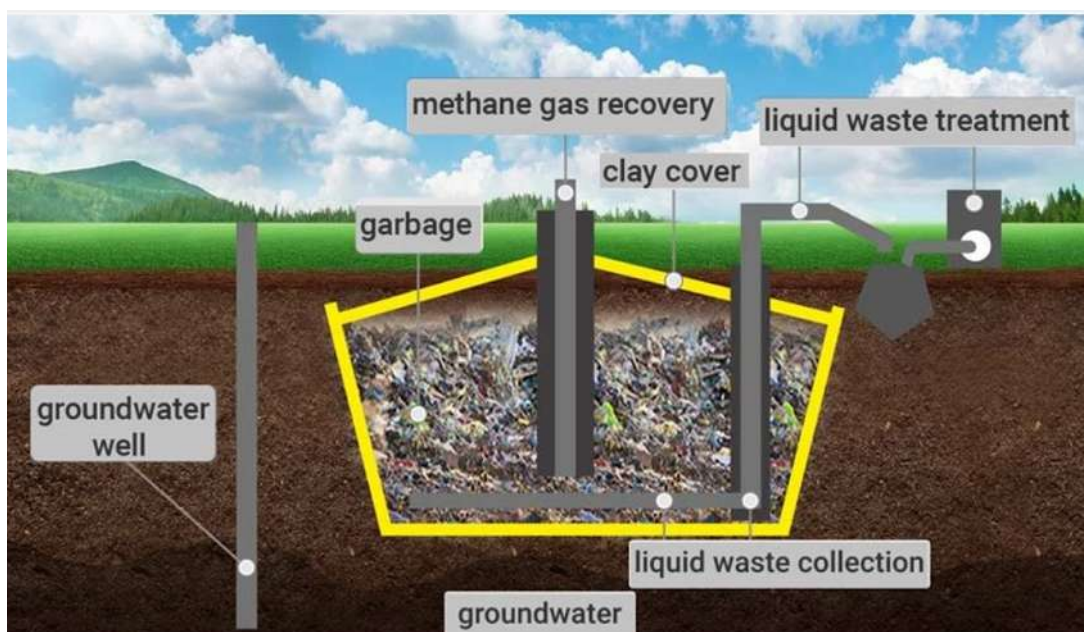
How do we get rid of the waste in our homes, offices, shops etc.





## 1. LandFills

1. Methane gas produced in landfill is collected and sometimes burned to produce electricity
2. Liquid waste is treated so its not hazardous
3. Bottom and sides of landfills are lined with clay or plastic line
4. Liquid waste is collected and pumped to the surface
5. Underground water source used for drinking water
6. A well is used to monitor the quality of groundwater
7. Clay and dirt cover



## Hazardous Waste

- **Chemical waste** that is harmful to animals, the environment and humans is called hazardous waste.
- **Medical hazardous waste** includes needles and bandages.
- **Household hazardous waste** includes used batteries and oil from engines.

→ Government agencies such as the U.S. Environmental Protection Agency work with different agencies to dispose of hazardous waste.

5. What measures help protect the Earth?

## **Positive actions:**

1. **Protect the land:** preserve land where you cannot just remove resources without permission
2. **Green spaces:** allow land to be in its natural state like parks etc.
3. **Reforestation and Reclamation:**
  - a. Reforestation: planting trees to replace trees that have been cut or burned down.
  - b. Reclamation: restoring land that has been disturbed by mining.



## 12 Review

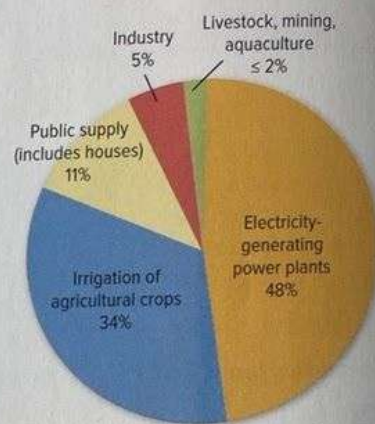
## Understand Key Concepts

- Which is a population?
  - all the animals in a zoo
  - all the living things in a forest
  - all the people in a park
  - all the plants in a meadow
- Which caused the greatest increase of the growth of the human population?
  - higher death rates
  - increased marriage rates
  - medical advances
  - widespread disease
- What percentage of species on Earth live in tropical rain forests?
  - 10 percent
  - 25 percent
  - 50 percent
  - 75 percent
- What process is illustrated in the diagram below?

Newly planted trees



- desertification
  - recycling
  - reforestation
  - waste management
- Which could harm human health?
    - compost
    - hazardous waste
    - nitrogen
    - reclamation
  - Which source of pollution would be hardest to trace and control?
    - runoff from a city
    - runoff from a mine
    - an oil leak from an ocean tanker
    - water from a factory discharge pipe
  - According to the diagram below, which is the correct ranking of water use in the United States, in order from most to least?



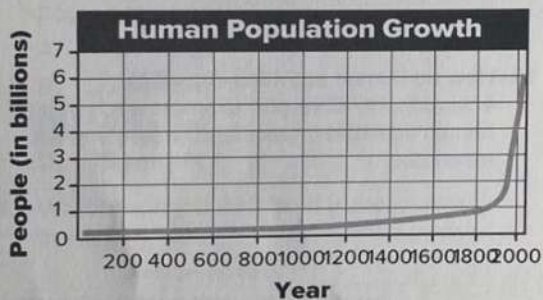
- industrial, public supply, irrigation, power plants
  - irrigation, industrial, public supply, power plants
  - power plants, irrigation, public supply, industrial
  - public supply, power plants, industrial, irrigation
- What is the main purpose of the Safe Drinking Water Act?
    - to ban point-source pollution
    - to clean up the Great Lakes
    - to protect drinking-water supplies
    - to regulate landfills
  - Why has the use of CFCs been phased out?
    - They cause acid rain.
    - They produce smog.
    - They destroy ozone molecules.
    - They impact the nitrogen cycle.

# Standardized Test Practice

## Multiple Choice aligned with TIMSS

- 1 Which action can help restore land that has been disturbed by mining?
  - A deforestation
  - B desertification
  - C preservation
  - ☒ D reclamation
- 2 Which is a consequence of deforestation?
  - ☒ A Animal habitats are destroyed.
  - B Carbon in the atmosphere is reduced.
  - C Soil erosion is prevented.
  - D The rate of extinction is slowed.

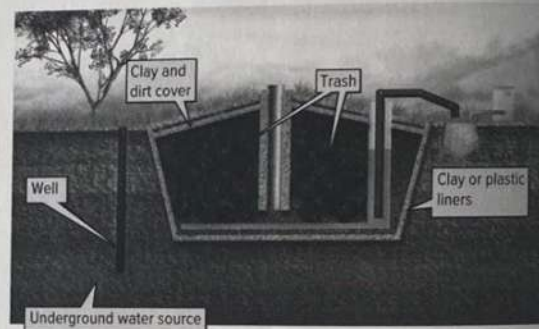
Use the graph below to answer question 3.



- 3 During which time span did the human population increase most?
  - A 1400–1600
  - B 1600–1800
  - C 1800–1900
  - ☒ D 1900–2000
- 4 Which accounts for the least water use in the United States?
  - A electricity-generating power plants
  - B irrigation of agricultural crops
  - ☒ C mines, livestock, and aquaculture
  - D public supply, including houses

- 5 Which is a point source of water pollution?
  - ☒ A discharge pipes
  - B runoff from farms
  - C runoff from construction sites
  - D runoff from urban areas
- 6 Which air pollutant contains ozone?
  - A acid precipitation
  - B carbon monoxide
  - C CFCs
  - ☒ D smog

Use the figure below to answer question 7.



- 7 What is the function of the well in the figure above?
  - A to generate electricity
  - ☒ B to monitor quality of groundwater
  - C to prevent pollution of nearby land
  - D to treat hazardous water
- 8 Which action helps prevent water pollution?
  - A pouring motor oil on the ground
  - B putting hazardous wastes in the trash
  - C using fertilizers when gardening
  - ☒ D using vinegar when cleaning



## Standardized Test Practice

- 9 What effect does ozone near Earth's surface have on the human body?
- A It increases lung function.
  - B It increases throat irritation.**
  - C It reduces breathing problems.
  - D It reduces skin cancer.

Use the figure below to answer question 10.



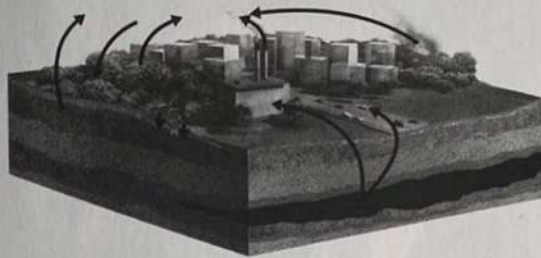
- 10 Which term describes what is shown in the figure above?
- A acid precipitation
  - B global warming
  - C greenhouse effect**
  - D urban sprawl
- 11 Which results in habitat destruction?
- A reclamation
  - B reforestation
  - C urban sprawl**
  - D water conservation
- 12 Explain how taking a hot shower can impact the environment.

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### Constructed Response aligned with TIMSS



Use the figure below to answer questions 13 and 14.

- 13 Which events shown in the figure remove carbon dioxide from the atmosphere?
- 
- 
- 
- 14 Relate the carbon cycle shown in the figure to global warming and the greenhouse effect.
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- 
- 15 List two actions that help prevent air pollution. Then explain the pros and the cons of taking each action.
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Need Extra Help?															
If You Missed Question...	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Go to Lesson...	2	2	1	3	3	4	2	3	4	2	2	1	4	4	4