

Sustainability in Mathematics Practice Quiz

1. How can sustainability be integrated into mathematics courses? (Select all that apply).

- a. By only teaching mathematical concepts
- b. By using the 'micro-insertion' method and incorporating real-world examples to the current curriculum
- c. By only teaching sustainability content
- d. By integrating UN SDGs to the mathematical problems

2. Which of the following best describes the main challenge universities face when embedding sustainability into mathematics?

- a. Students lack interest in environment issues.
- b. Sustainability topics are irrelevant for higher education.
- c. Mathematics is often perceived as abstract and disconnected from real world problems.
- d. The UN SDGs do not include mathematical applications.

3. Which event in 1970 significantly increased public awareness of environmental issues?

- a. The first Earth Day
- b. The Kyoto Protocol
- c. The Earth Summit in Rio de Janeiro
- d. The UN Stockholm Conference

4. Which of the following is not one of the 17 UN Sustainable Development Goals?

- a. Clean Water and Sanitation
- b. Gender Equality
- c. Affordable and Clean Energy
- d. Global Cyber Security

5. How is the Mercury Contamination problem related to sustainability?

- a. It measures greenhouse gas (e.g. CO₂) emissions
- b. It predicts water safety
- c. It highlights gender disparities
- d. It estimates oil spillage

6. Which SDGs are linked to the Mercury Contamination problem?

- a. Industry, Innovation and Infrastructure (SDG 9) and Life Below Water (SDG 14)
- b. Good Health and Well-Being (SDG 3) and Sustainable Cities and Communities (SDG 11)
- c. Clean Water and Sanitation (SDG 6) and Responsible Consumption and Production (SDG 12)
- d. Climate Action (SDG 13) and Life on Land (SDG 15)

7. Simpson's paradox demonstrates that

- a. Averages of data are always misleading
- b. Trends that appear in different groups disappeared when the groups are combined
- c. Smaller sample sizes always produce unreliable results
- d. Bigger sample sizes always produce unreliable results

8. Which SDGs are linked to the Simpson's Paradox problem?

- a. Affordable and Clean Energy (SDG 7) and Industry, Innovation and Infrastructure (SDG 9)
- b. Clean Water and Sanitation (SDG 6) and Life on Land (SDG 15)
- c. Decent Work and Economic Growth (SDG 8) and No Poverty (SDG 1)
- d. Reduced Inequalities (SDG 10) and Gender Equality (SDG 5)

**9. Which SDGs are associated with preventing environmental harm from industrial projects?
(Select all that apply)**

- a. Life Below Water (SDG 14)
- b. Gender Equality (SDG 5)
- c. Climate Action (SDG 13)
- d. Life on Land (SDG 15)

10. Which of these mathematical topics is most relevant to modelling the spread of a pollutant over time?

- a. Number theory
- b. Probability
- c. Differential equations
- d. Trigonometry