

Name: _____ Date: _____

Macro to Micro: A 9th Grade Science Branches Breakdown

Evaluate how distinct scientific disciplines overlap when solving complex global issues like kinetic energy transfers and cellular pathology.

1. A forensic pathologist is examining tissue samples to determine a cause of death caused by a chemical toxin. This professional is operating at the intersection of which two branches?

- A. Astronomy and Physics
- B. Biology and Chemistry
- C. Earth Science and Geology
- D. Physics and Environmental Science

2. Geophysics is a cross-disciplinary field that uses the principles of Physics to study the internal structures and processes of the Earth.

- A. True
- B. False

3. If a researcher is analyzing the isotopes found within a meteorite to determine the age of the solar system, their work primarily falls under ____.

- A. Botany
- B. Meteorology
- C. Cosmochemistry
- D. Ecology

4. Which branch of science would be most concerned with the conversion of potential energy into kinetic energy within a hydroelectric dam?

- A. Physics
- B. Biology
- C. Cytology
- D. Paleontology

5. When an Earth scientist studies the 'Cryosphere,' what are they specifically investigating?

- A. The gases surrounding the planet
- B. The molten core of the Earth
- C. The frozen water parts of the Earth system
- D. The movement of tectonic plates

6. The study of the interactions between the atmosphere, the oceans, and the land to predict future climate trends is the primary focus of ____.

- A. Microbiology
- B. Climatology

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- C. Organic Chemistry
- D. Quantum Mechanics

7. A scientist studying the thermodynamics of a black hole's event horizon is working within the branch of Biology.

- A. True
- B. False

8. Developing a new synthetic polymer that can biodegrade more efficiently requires an advanced understanding of ____.

- A. Astrophysics
- B. Geology
- C. Materials Science
- D. Horticulture

9. Which of these scenarios best represents an Environmental Science approach to a problem?

- A. Calculating the trajectory of a SpaceX rocket
- B. Identifying the valence electrons of a Neon atom
- C. Evaluating the effect of urban runoff on nitrogen cycles in local wetlands
- D. Mapping the human genome to find a cure for a genetic disorder

10. The 'Scientific Method' is a rigid set of steps used only by chemists and is not applicable to Earth Science or Astronomy.

- A. True
- B. False