

ESCI 1 Study Guide

The Quizzes and Final are an **individual** assessment: Open journal

Quiz 1 topics: Highlighted in Yellow. Questions can relate to the Lecture, Video or in-class Activities.

Quiz 2 topics: Highlighted in Green. Questions can relate to Lecture, Video, Presentations, in-class activities.

List of Key Concepts and Terms:

1. The Kirsch Building: Passive Solar features
2. Hypothesis, Scientific Theory, Scientific Law, Correlation vs Cause-and-effect relationships
3. Environmental Science, Sustainability vs Consumptive economy
4. Three Unifying Themes of Environmental Science: Science, Stewardship, Sustainability
5. Mitigation, Adaptation
6. Conservation, Preservation
7. Precautionary Principle
8. Tragedy of the Commons, Public Trust Doctrine
9. Polluter Pays
10. Environmental Justice

11. Ecology and ecological hierarchy
12. Food Web (how energy and nutrients move in an ecosystem)
13. Trophic pyramid or trophic hierarchy (how much energy is transferred to next level?)
14. Trophic categories (learn to identify trophic category of an organism in a food web)
15. Limits of tolerance, optimal range and zones of stress relating to abiotic factors and conditions
16. Bio-accumulation (why is this a problem?)

17. What are terrestrial biomes? What two reasons determine which biome occurs where? Give 5 examples of terrestrial biomes and what kind of climate they occur in.
18. List the different types of aquatic systems (include all fresh water and salt water ecosystems).
19. What are some threats faced by terrestrial biomes and aquatic systems? What are some solutions?

20. Evolution – what are the two main processes (Variation and Natural Selection)?
21. How do new species form?
22. What is biodiversity? What are the different types of biodiversity?
23. Why is biodiversity important?
24. Why are “wild species” important? (Do not confuse this with wild life!)
25. What is intrinsic and instrumental value?

26. What are the ecosystem services provided by forests?
27. What are the ecosystem services provided by coastal oceans?
28. Ecosystem resilience (ecological succession after disturbances)
29. How are biodiversity hotspots defined? Some info on one hotspot you researched.

30. What is the field of Conservation Biology?
31. What does "citizen scientist" mean? Who do they help and Why are they important?
32. Which activity that you did in class helped you to learn what a "citizen scientist" does?

33. Water Cycle (diagram) Meaning of each term in the water cycle
34. Difference between evaporation & transpiration?
35. Which one of these occurs in a forest? What happens if forests are cleared?
36. What is a watershed? Which watershed do you live in? How can you protect it?

37. Importance of Soil and Soil Conservation

38. Difference between Weather and Climate
39. Green House Gases, how do they impact Earth's temperature?
40. Examples of green house gases
41. Green House Effect (diagram)
42. Impacts of increasing CO₂ in atmosphere, oceans
43. Impacts of global warming

44. What is air pollution? Difference between primary pollutants and secondary pollutants.
45. Health impacts of air pollution.

46. What is Urban Sprawl?
47. Sustainable City – what does it mean? How can we design sustainable cities (list 5 things to consider)

48. Renewable energy – meaning and examples
49. Pick one type of renewable energy and learn about its pros and cons.

50. What was your favorite topic in the course? Why?