

AP Biology

Name: _____ Score: _____

1. A **stimulus** is...

- ☐ a gene
- ☐ a type of cell
- ☐ a change that an organism can detect and react to
- ☐ a kind of food

2. Where does the energy in most ecosystems originally come from?

- ☐ the soil
- ☐ the Sun
- ☐ rocks
- ☐ the wind

3. When resources are unlimited, a population shows **exponential growth**, which means it...

- ☐ grows in a straight line
- ☐ shrinks steadily
- ☐ grows faster and faster
- ☐ stays exactly the same

4. **Population density** measures...

- ☐ how heavy each individual is
- ☐ how many individuals live in a given area
- ☐ the total sunlight
- ☐ the number of species

5. A **community** in ecology is...

- ☐ a type of cell
- ☐ a food molecule
- ☐ all the populations of different species living together in an area
- ☐ a single species

6. A species that has an especially large effect on its community is a _____ species.

7. The gradual recovery of a community after a disturbance is called _____.

8. Photosynthesis creates new carbon atoms that did not exist before.

☐ True ☐ False

9. An animal moving toward or away from a stimulus is showing a _____.

10. Assume transfer efficiency is 10% in this example. From 10,000 units, how many reach the next trophic level?

AP Biology

1. **a change that an organism can detect and react to**

A **stimulus** is a change in the environment (like light or heat) that triggers a **response**.

2. **the Sun**

Sunlight is captured by **producers** (plants) through photosynthesis, feeding the whole ecosystem.

3. **grows faster and faster**

Exponential growth speeds up as the population gets bigger – a J-shaped curve.

4. **how many individuals live in a given area**

Population density is the number of individuals per unit area or volume.

5. **all the populations of different species living together in an area**

A **community** is all the interacting populations of different species sharing an area.

6. **keystone**

A **keystone species** holds the community together; losing it can collapse the whole ecosystem.

7. **succession**

In **succession**, species return step by step, slowly rebuilding the community after a disturbance.

8. **False**

It incorporates existing carbon from CO₂ into organic molecules.

9. **taxis**

A **taxis** is a directed movement of an animal toward or away from a stimulus.

10. **1000**

Under the supplied 10% assumption, $10,000 \times 0.1 = 1,000$. Real transfer efficiencies vary.