

HOW ORGANISMS OBTAIN ENERGY – NOTES ORGANIZER

1. All organisms require _____ to live!
2. How do organisms obtain energy?

AUTOTROPHS	HETEROTROPHS

3. Define cellular **metabolism**.
4. Describe the **overall purpose and process** of photosynthesis (BIG PICTURE)?
5. Use the picture of the tree below to **illustrate** what is coming in and what is produced during photosynthesis.



6. Write the balanced **chemical equation** for photosynthesis.
7. Photosynthesis takes place in which **eukaryotic organelle**?
8. Photosynthesis is a process utilized by (autotrophs / heterotrophs).

9. **Chloroplasts** are mostly found in the cells of _____.

a. Why is this a good *location* for the photosynthetic organelle?

10. Draw and label the structure of a chloroplast in the box to the right.

11. Describe the **structure and function** of the parts of a chloroplast.

a. **Thylakoid**

i. What do you call a stack of thylakoids?

b. **Stroma**

12. What is the **major difference** between the light independent and light dependent reactions of photosynthesis?

13. What is **chlorophyll**?

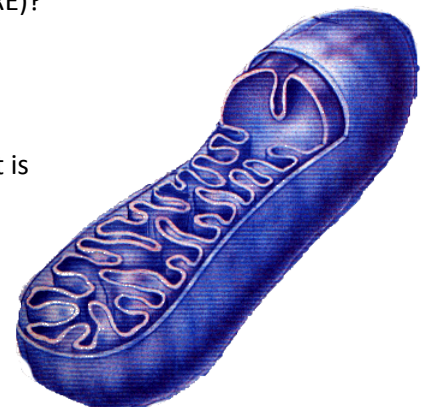
a. Chlorophyll is used to trap _____ energy.

14. Explain why deciduous leaves **change colors** in the fall.

15. What is the opposite process of photosynthesis?

16. Describe the **overall purpose and process** of cellular respiration (BIG PICTURE)?

17. Use the picture of the mitochondria to **illustrate** what is coming in and what is produced during respiration.



18. Write the balanced **chemical equation** for *cellular respiration*.

19. The process of cellular respiration begins with glycolysis, which takes place in the _____.

20. Cellular respiration produces energy. Which **eukaryotic organelle** is responsible for *producing energy*?



21. Draw and label the structure of a **mitochondria** in the box to the left.

22. The overall process of cellular respiration is **aerobic**. What does this mean?

23. If oxygen is *unavailable*, _____ takes place.

24. Describe the two types of **anaerobic fermentation**.

a. Lactic acid fermentation

b. Alcohol fermentation

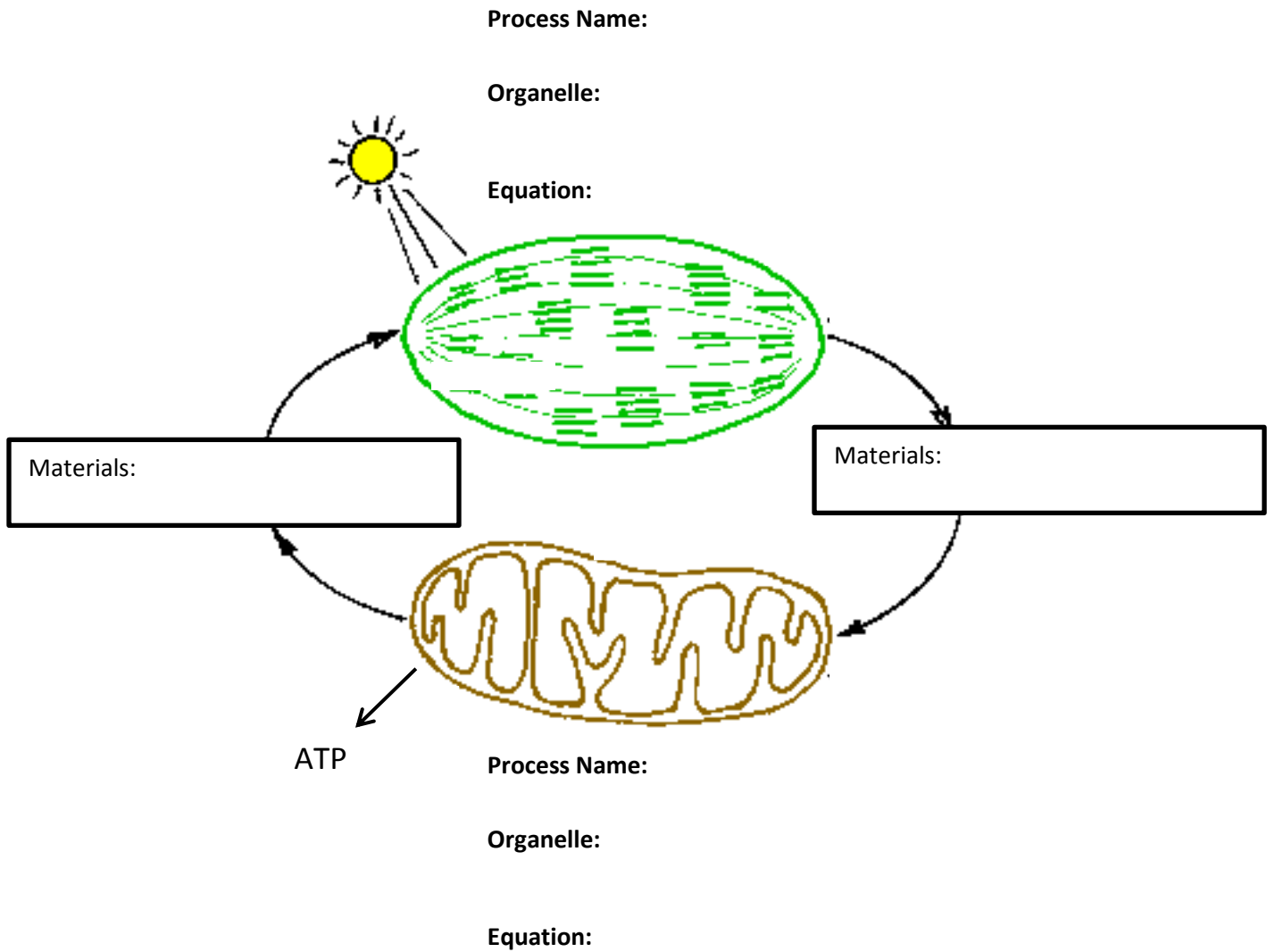
25. *Defend this statement with an explanation.* Organisms would rather utilize aerobic respiration when creating energy.

26. What does it mean to say that photosynthesis and cellular respiration are "opposite" processes?

27. Photosynthesis takes place in **plants only**. (True / False)

28. Cellular respiration takes place in **animals only**. (True / False)

29. Complete the diagram below, illustrating the connections between photosynthesis and cellular respiration.



30. In paragraph form, summarize the connections between photosynthesis and cellular respiration.