

## C 1.2 Cellular Respiration SL

1. Cellular respiration is a system for producing \_\_\_\_\_ within a cell, by using \_\_\_\_\_ released from \_\_\_\_\_ containing molecules such as \_\_\_\_\_ and \_\_\_\_\_. These two are the \_\_\_\_\_ substrates for respiration, but others exist.
2. Cellular respiration occurs because cells need energy in the form of \_\_\_\_\_. The full name for this molecule is \_\_\_\_\_. It is important to note that it is a \_\_\_\_\_, just like \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ found in DNA. It can \_\_\_\_\_ and \_\_\_\_\_ energy, making it an ideal energy \_\_\_\_\_ within cells. Energy is \_\_\_\_\_ when \_\_\_\_\_ is converted by a(n) \_\_\_\_\_ reaction to \_\_\_\_\_. This means that \_\_\_\_\_ is \_\_\_\_\_ by the reaction. Logically, this also means that energy is \_\_\_\_\_ to add a \_\_\_\_\_ group back onto an \_\_\_\_\_ molecule in order to restore \_\_\_\_\_.
3. \_\_\_\_\_ is important for many \_\_\_\_\_ processes. For example, it is required for \_\_\_\_\_ transport of molecules across a membrane by a \_\_\_\_\_ protein, for \_\_\_\_\_, which is the type of metabolism that \_\_\_\_\_ larger molecules from smaller ones, and because it can be used to \_\_\_\_\_ full cells, or cell components such as \_\_\_\_\_ around.
4. It is crucial to not confuse respiration with \_\_\_\_\_. Respiration is the process of making \_\_\_\_\_, whereas the latter is needed to transfer molecules such as \_\_\_\_\_ and \_\_\_\_\_ between tissues.
5. There are two types of respiration. The first step in both forms is \_\_\_\_\_ which takes place in the \_\_\_\_\_ of a cell. Essentially, it is the process of converting \_\_\_\_\_ to \_\_\_\_\_. It only produces \_\_\_\_\_ molecules of \_\_\_\_\_. \_\_\_\_\_ either remains in the \_\_\_\_\_ and undergoes \_\_\_\_\_ respiration or enters the \_\_\_\_\_ to undergo \_\_\_\_\_ respiration which requires \_\_\_\_\_.
6. The word equation for \_\_\_\_\_ respiration is:
7. The word equation for \_\_\_\_\_ respiration is:

8. Complete the table comparing the two types:

|                                  |  |  |
|----------------------------------|--|--|
| Type of Respiration:             |  |  |
| Substrates                       |  |  |
| Name of first chemical reaction: |  |  |
| Oxygen required?                 |  |  |
| Amount of ATP produced           |  |  |
| Site                             |  |  |
| End-products                     |  |  |

9. In aerobic respiration experiments, the \_\_\_\_\_ of respiration can be measured using an apparatus called a \_\_\_\_\_. The volume of \_\_\_\_\_ produced is simply \_\_\_\_\_ by the \_\_\_\_\_ to determine the \_\_\_\_\_. The units could be \_\_\_\_\_.

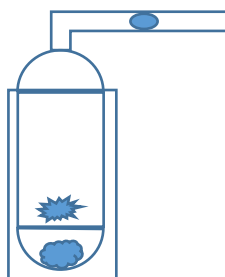
10. This type of apparatus is shown in the schematic below.

An \_\_\_\_\_ such as \_\_\_\_\_, absorbs the \_\_\_\_\_ gas which is produced by the sample, which could be a \_\_\_\_\_ seed or an \_\_\_\_\_. The change in volume of \_\_\_\_\_ gas \_\_\_\_\_ the pressure in the vessel. This moves the bubble. Draw an arrow showing the direction the bubble will move. Several factors should be controlled, including \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. Complete the annotations and draw a ruled line to the correct structure.

Glass tube:  
measures the \_\_\_\_\_ in the \_\_\_\_\_ (cm<sup>3</sup>)

Sample: The organism being tested, such as a \_\_\_\_\_ or \_\_\_\_\_

Wire mesh: prevents \_\_\_\_\_ from \_\_\_\_\_ the \_\_\_\_\_.



Airtight seal:

Water jacket: controls the \_\_\_\_\_

\_\_\_\_\_ substance: