# Assignment Summary

In this assignment, you will create a poster that models how the circulatory and respiratory systems work together to ensure homeostasis through gas exchange. The poster should highlight the roles of components in each system as well as the interaction between the two systems. You will also write two paragraphs describing the contents of your poster.

Background Information

The human body is organized in a hierarchy. At the smallest level, cells are the basic units of structure and function. Cells make up tissues, and tissues make up organs. Organs work together in an organ system to perform a common function and maintain homeostasis in the body.

The circulatory system delivers oxygen, sugars, amino acids, and other substances to cells and removes carbon dioxide from cells. The main structures of the circulatory system are the heart and the blood vessels. Blood is also an important component of the circulatory system.

The respiratory system allows oxygen to enter the body, delivers oxygen to the blood, and removes carbon dioxide from the blood. The main structures of the respiratory system are the nose, nasal cavity, pharynx, larynx, trachea, bronchi, and lungs.

Materials

* Poster board
* Construction paper
* Markers, colored pencils, etc.
* Scissors

# Assignment Instructions

**Step 1: Prepare for the project.**

1. Read the entire Student Guide before you begin this project.
2. If anything is not clear to you, ask your teacher for assistance before you begin.
3. Gather the materials you need to make your model.

**Step 2: Create a model.**

1. On your poster, create a model that shows the circulatory and respiratory systems.
   1. Keep in mind that the poster should show how the systems interact with each other for the purpose of gas exchange (i.e., delivering oxygen to the body’s tissues and removing carbon dioxide). This may influence how you choose to design your poster.
2. Label the main structures in each system that are involved in gas exchange.
   1. Use one color to label the structures of the circulatory system and another color to label the structures of the respiratory system.
3. Consider how the circulatory and respiratory systems work together to promote gas exchange.
   1. Use arrows to demonstrate the flow of oxygen-rich and oxygen-poor blood through the circulatory and respiratory systems. Use one color to illustrate oxygen-rich blood and another color to depict oxygen-poor blood.
4. Make sure that your name is on your poster. Your instructor will collect your poster.

**Step 3: Create a typewritten document.**

1. Type a paragraph describing how the circulatory and respiratory systems work together to deliver oxygen to the body’s tissues and remove carbon dioxide.
   1. Include the names of structures and other components that play a role in gas exchange.
   2. Explain how the interactions between the circulatory and respiratory systems contribute to maintaining homeostasis in the body.
2. Type a second paragraph comparing the accuracy of your model to actual organ systems and their functions.
   1. Consider how a model is different from an actual human body.
   2. Describe the limitations of a model.
3. Be sure to include your name on the document. The document will be submitted through the virtual classroom.

**Step 4: Evaluate your project using this checklist.**

If you can check each criterion below, you are ready to submit your project.

* Does your model show both the circulatory and respiratory systems?
* Did you label the main structures of each system that are involved in gas exchange?
* Does your model use arrows to demonstrate the flow of oxygen-rich and oxygen-poor blood through the circulatory and respiratory systems?
* Does your first typewritten paragraph describe how the circulatory and respiratory systems work together to deliver oxygen and remove carbon dioxide from the body?
* Does your second paragraph compare your model to the actual organ systems within the body?
* Is your name on your poster and your typed document?

**Step 5: Revise and submit your project.**

1. If you were unable to check off all of the requirements on the checklist, go back and make sure that your project is complete.
2. When you have completed your model, submit your model to your instructor for grading and upload your paragraph to the virtual classroom.

**Step 6: Clean up your work space.**

1. Clean up your work space and throw away any trash.
2. Congratulations! You have completed your project.