



Chapter 39 Project

Welcome Aboard the Endocrine System!

Project Goal + Timeline

In this project, we will be reviewing your knowledge of the endocrine system by writing a set of instructions for three different hormones for their first day on the job. This project should be completed by yourself or with a partner within two to four hours.

Directions

You're in charge of training three hormones—ADH, FSH, and insulin—for their first day on the job. Write a set of instructions for each of these hormones to follow. Imagine these instructions serve as a helpful guide for a hormone, instructing it on what to do, where to go, and what to watch out for. Create these instructions to be given to each hormone immediately after it is synthesized.

For each set of instructions, include five parts: Role Overview, Finding Your Way Around, Meet Your Team, On the Job, and Be Aware. Following are detailed instructions for each part.

Note: The hormone FSH works differently in males and females. You need only describe the role in one sex.

Part 1: Role Overview

This part describes the “big picture” role to which this hormone contributes. After a quick welcome message, you should mention and define homeostasis. Then explain the hormone’s overall role in maintaining homeostasis. This includes specifying which aspect of bodily function this hormone will help manage (excretory, reproduction, or metabolism). For example, this part may use phrases such as, “As a member of the _____ system, you manage _____.”

Feel free to use the italicized text to get started if you like, but you are encouraged to customize the welcome message! After this italicized part, you should describe the big-picture contribution of this hormone. The suggested word count for this part is 150 to 200 words.

“Welcome to your new position, hormone _____! The first day on the job can be an exciting but sometimes stressful time! You must learn new systems and meet your coworkers.

You have an essential job. We pride ourselves on our rapid response and fluid communication as an endocrine system. This short guide will help you breeze through your first day and establish your place as a superstar team member! As a member of the....”

Part 2: Finding Your Way Around

This part shows all body parts and structures that are essential to the hormone. No text is required here except for the map labels. Develop a map of a human body. The map can be a simple outline. Do not try to depict all human body organs and structures. Only show those parts that are essential for that hormone’s primary function. Maps can be computer generated or hand drawn. Your map must include two things:

1. Include a “You Are Here” marker. This shows where in the body that hormone was synthesized. Assume that is the hormone’s starting location. For example, the starting location for the hormone glucagon would be the pancreas.
2. Include all the major locations where this hormone will operate. Where is the hormone stored? Where must it travel to operate? Include these body locations and label them. For example, if glucagon’s route were described, the liver would be marked as a major location.

Part 3: Meet Your Team

This part introduces an important “coworker,” or another hormone that interacts directly with the primary hormone. Include an image of the coworker hormone. Internet images and computer-generated images are fine.

Then, describe the coworker hormone’s role in three to four sentences. You don’t need to go into too much detail here because more detailed interactions will be described in Part 4. The suggested word count for this part is about 50 to 70 words per “coworker.”

For example, glucagon works closely with the hormone insulin. So, insulin would need to be introduced.

Part 4: On the Job

This part describes the hormone’s specific job duties. Keep in mind that Part 1 already explained the “big picture;” this part explains the specific details. A majority of this part should cover the various stimuli to which this hormone responds.

Identify which stimuli activate this hormone; be sure to use the word “stimulus.” Then clearly state how the hormone should respond to each stimulus. For this part, you may choose between two formats: either (a) a written explanation or (b) a flow chart. If you go with the written explanation, the suggested word count is 150 to 200 words.

For example, glucagon would be described as responding to blood glucose concentration. When blood glucose drops (that’s the stimulus), glucagon should respond by leaving the pancreas. Explain where the hormone goes next. What will the hormone encounter?

Part 5: Be Aware

This part explains the consequences of failure. Emphasize this hormone’s importance by explaining, generally and specifically, what happens to the body if this hormone doesn’t work correctly. Emphasize homeostasis and explain how this hormone’s failure could disrupt homeostasis. Then explain why that failure would hurt the body.

Conclude this part with one specific example of a disease or disorder in which this system (excretory, metabolic, or reproductive) has failed and discuss the hormone’s role in that disease or disorder. The suggested word count is 125 to 150 words.

To finish your project, compile each set of instructions into an appealing brochure or booklet. Make sure to make a separate brochure for each: ADH, FSH, and insulin.

Project Materials

- Computer with a word processor
- Printer
- Paper
- 1 pen or pencil
- *Optional: Markers or other art supplies for drawing maps*

Student Checklist

- ☐ Complete instructions for ADH
- ☐ Complete instructions for FSH
- ☐ Complete instructions for insulin