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The Next Generation Science Standards (NGSS) includes a learning standard about feedback loops and homeostasis. Specifically, students must plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis. In my anatomy class, carrying out investigations involves activities where students measure respiration and heart rate as a response to activity. We go into much greater detail on feedback loops within the endocrine system unit. For students to understand this topic, we spent a few days going over the glands and hormones in the system. The focus is on what each hormone does and their target organs. To practice feedback, loops, students complete this worksheet where they fill in the blanks on a map showing the action of hormones. Earlier in the year, students looked at the insulin glucagon feedback loop. Though in this earlier lesson, the loop is graphically shown and students interpret what it shows. The new exercise students actually complete the diagram. Insulin and glucagon in the pancreas Calcitonin in the thyroid and parathyroid Antidiuretic hormone in pituitary You can give students a paper copy of the worksheet or assign the digital version for completion on their devices. The answer key is available at TpT. In order to maintain homeostasis, the body must maintain a consistent supply of oxygen. The hormone erythropoietin, which is released from the kidneys, will stimulate the bone marrow to produce more red blood cells. This has the effect of raising blood oxygen levels. 1. What might cause oxygen levels to drop? 2. What is homeostasis? 3. Does this model represent positive or negative feedback? 4. What would happen if the kidneys could not produce EPO? This chapter focuses on blood cells, the genetics of blood types and disorders that affect the blood and concludes with an optional class activity that tests your blood type. Also OpenStax Chapter 18 Part 1: Blood Cells Guided Notes: Red Blood Cells, White Blood Cells, Platelets Slides: Red Blood Cells | White Blood Cells | Platelets Investigation: Hematocrit - practice calculating using simulated samples Bloodspatter Lab Blood Cell Concept Map | Blood Cell Crossword Blood Feedback Loop - graphic organizer Blood Case Studies (Hematology) Blood Disorder Genetic Problems - sickle cell, hemophilia Videos: Sickle Cell Anemia (Osmosis ~9 min) The Wonderful World of Blood (Vimeo, 55 min) Part 2: Blood Types Notes: Blood Typing | Guided Notes Blood Typing Problems - predict the outcome of crosses Blood Typing Lab - test your own blood! (permission form) Blood Typing Lab 2 with simulated blood (Article) Anti-D Donation | Article: Type A Conversion Study Guide: Blood (summarizing all topics) Review Kahoot 79%(14)79% found this document useful (14 votes)66K viewsThis is an answer key for positive and negative feedback loopsSaveSave 27 Feedback Mechanisms Pogil Key For Later79%79% found this document useful, undefined Question: Order of feedback loop?Answer: 1. Normal blood O2 levels2. Oxygen3. Kidney4. Erythropoietin5. Red bone marrow6. Red blood cells7. OxygeQuestion: What happens to oxygen levels in the blood?Answer: Declining of O2 levelsQuestion: After declining of O2 the kidneys are what?Answer: SignaledQuestion: Kidneys release erythropoietin which is a what?Answer: HormoneQuestion: Which acts upon the?Answer: Red bone marrowQuestion: The rbc production does what?Answer: IncreasesQuestion: What happens to O2?Answer: IncreaseeQuestion: What might cause O2 levels to drop?Answer: Decrease in erythropoietinQuestion: What is homeostasis?Answer: Maintaining equilibrium

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