CHASING EQUILIBRIUM

STUDENT WORKBOOK

LAUNCH

ACTIVITY 2

WATCHING THE SPREAD

Materials spread throughout organisms just like the food coloring spread throughout the cup of water.
In this activity, you will determine what factors cause materials to travel through the body faster or slower.

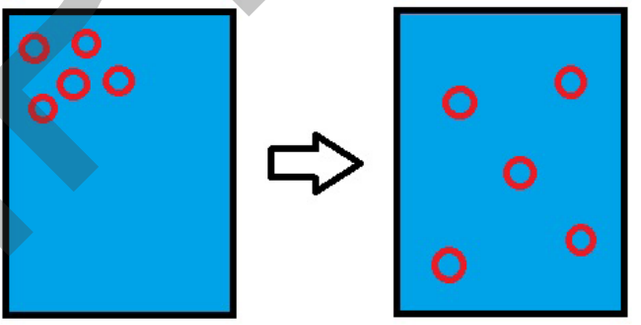
LEARNING GOALS:

I can show that diffusion and osmosis are predictable and can affect the structure and function of cells.

2 DISCOVERING DIFFUSION

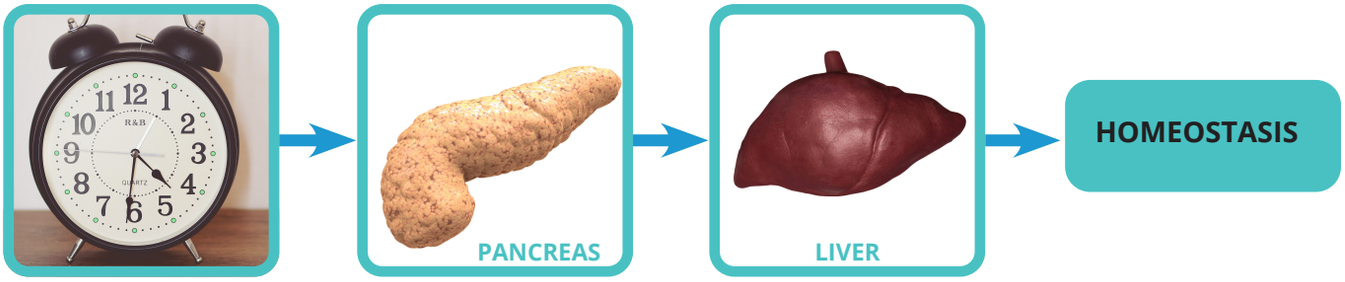
In Activity 1, you saw the food coloring leave the dialysis tubing and spread out in the water in the cup. This occurs through a process known as **diffusion,** the movement of molecules from an area of high concentration to an area of low concentration.

Concentration is the amount of a component there is in a **solution**. When one thing dissolves in another, the resulting mixture is a solution. A solution has two main parts: solvent and solute. The **solvent** is the substance that acts on the solute to dissolve it and is usually present in a greater quantity than the solute. The **solute** is the substance that is being dissolved and is usually in a lesser quantity than the solvent.



Examples from Activity 1				
Solvent	+	Solute	=	Solution
Water	+	Salt	=	Saltwater
Water	+	Food Coloring	=	Food Coloring Water

In this diagram, label the solvent, solute, and solution.



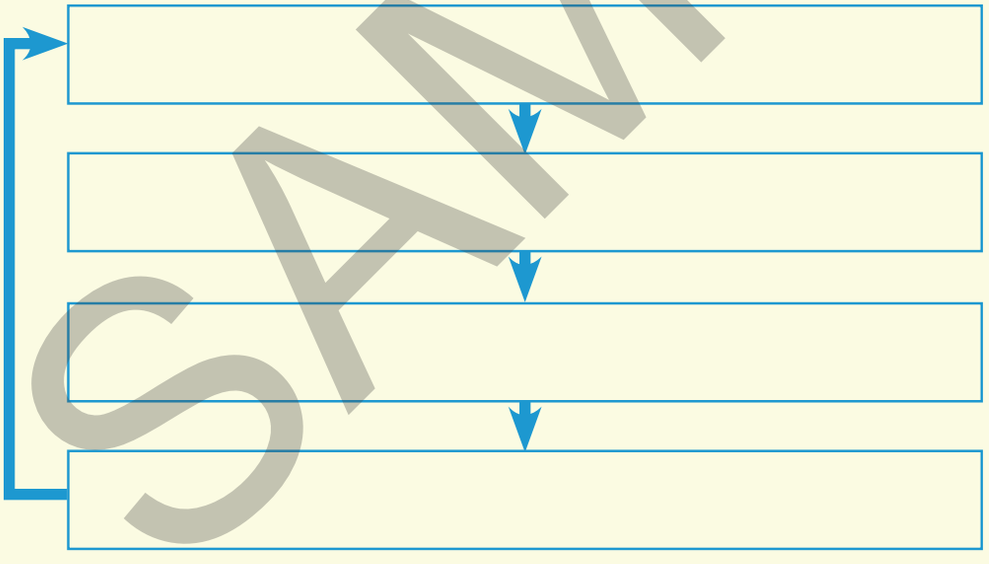
THINK LIKE A DOCTOR

II

If you like helping people and being in a caring role, being a doctor is a career you should consider. For this next exercise, imagine you are the doctor! What would you do in these situations?

1. Your patient is a 12-year-old with increased urination even though their water intake has remained the same. You do a urine test and find that the patient's pH level is dangerously low.

a. Fill in the negative feedback loop diagram for how the body would normally handle low blood pH.



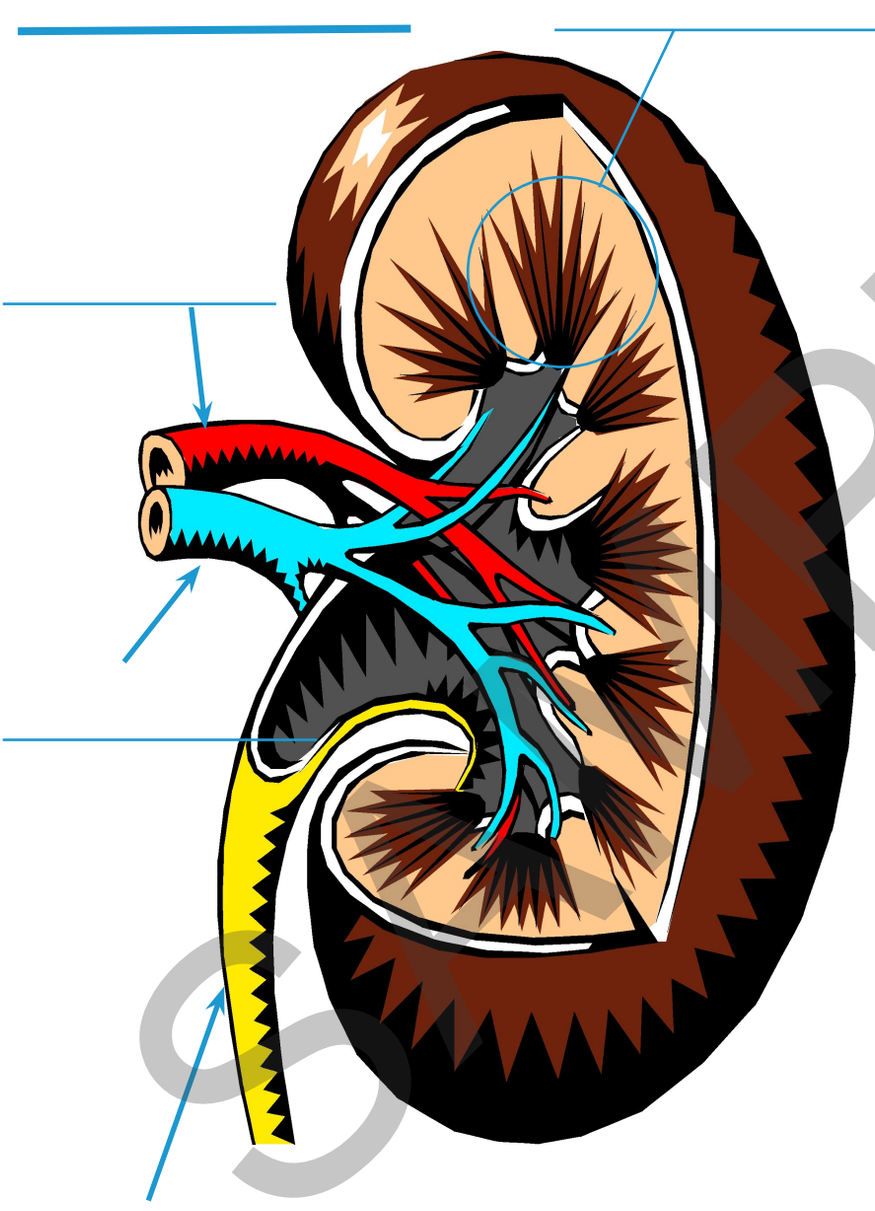
b. Independently, research one option your patient has to maintain their blood pH. Hint: Use what you learned earlier to help you.

KIDNEY MODEL

(1) Label the parts of the kidney.

(2) draw a nephron, and

(3) indicate the flow of sodium (Na^+) in the kidney.



LAUNCH

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Kit	SU-CHASE
Instructions	IN-SU-CHASEQS
Revision Date	3/2021