

BEADS OF BLOOD

FOCUS Blood

OBJECTIVE To explore blood composition

OVERVIEW Ever wonder what makes up that fantastic fluid that flows through your veins (and arteries, too)? In this activity, we'll explore the composition of blood by making a model.



WHAT TO DO



STEP
1

Pour the bag of large red beads into the plastic jar. Now carefully **examine** the small bag of "mixed" beads. **Make notes** about quantities, shapes, and colors. **Pour** this bag of beads into the jar with the red beads.



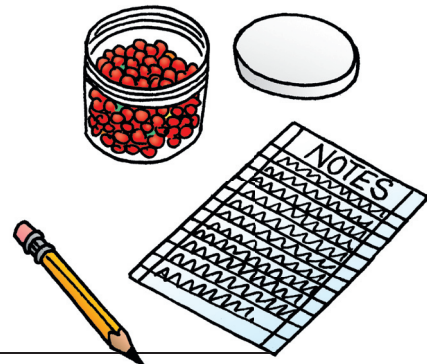
STEP
2

Pour the bag of tiny orange beads into the jar. Slowly **fill** the jar with water and **fasten** the lid on firmly. **Dry** the outside of the jar carefully, then **shake** the jar to thoroughly mix the beads.



STEP
3

Hold the jar in one hand and **swirl** it gently. **Watch** the beads as they slowly spin. **Make notes** about what you see. **Predict** what each type of bead might represent (hint: check bag labels).



STEP
4

Carefully **pour** the water out of the jar. **Sort** and **dry** beads as directed by your teacher. Now **review** each step in this activity. **Share** and **compare** observations with your research team.

? WHAT HAPPENED?

Here's what the parts of your **model** represent: First, human **blood** is primarily a water-based **liquid** called **plasma** (represented by water). Plasma contains dissolved **nutrients**, **waste products**, **gasses** like carbon dioxide and oxygen, disease-fighting chemicals called **antibodies**, chemical messengers called **hormones**, and many other substances. Plasma also moves **heat** to warm up or cool down the body.

Second are **red blood cells** (represented by the red beads) called **erythrocytes**. They get their color from **hemoglobin** they contain. This iron-rich chemical helps carry oxygen. Next are **white blood cells** (represented by the other colored beads) called **leukocytes**. It's their job to fight **disease**! There are five different types of leukocytes. Finally come small, specialized cells (represented by the tiny beads) called **platelets**. These important cells cause blood to **clot** during an injury, preventing the loss of life-sustaining fluid!

? WHAT WE LEARNED

1

What does the water in your model represent? Describe the purpose of this blood part.

2

What do the red beads in your model represent? Describe the purpose of this blood part.

3

What does the second bag of colored beads in your model represent? Describe the purpose of this blood part.

4

What do the tiny beads in your model represent? Describe the purpose of this blood part.

5

Name at least three of the substances that plasma contains.

? CONCLUSION

Human blood is a complex mixture of cells and liquids whose individual parts perform important functions in our bodies.