

Valentine Science

Blood Types

Valentine's Day always makes us think of hearts and what better way to celebrate Valentine's Day than by performing a little science activity that focuses on the heart or, in this case, the blood that flows through your heart.

People have one of four different blood types: A, B, AB, or O. During severe accidents or medical disorders, it may be necessary for a doctor to perform a blood transfusion. Not all blood types are compatible and mixing incompatible blood types can be very dangerous to the patient. Here is an activity, using colored water to represent the four different blood types, to simulate blood transfusions and determine which blood types are compatible without endangering your loved one.

First gather your materials:

4 plastic cups of water
Some empty plastic cups
Blue, yellow and green food color
Sharpie pen for writing on the cups

Then follow these directions:

1. Using the food color, make a cup of yellow water and label the cup: "Blood Type A"
2. Using the food color, make a cup of blue water and label the cup: "Blood Type B"
3. Using the food color, make a cup of green water and label the cup: "Blood Type AB"
4. Pour a plain water cup of water into the fourth cup and label it: "Blood Type O." These four cups of water will represent the four different blood types.
5. Pour a small amount of the "blood" of any one of the cups into an empty cup; this cup will now represent the recipient of the blood transfusion.
6. Combine any one of the "donor blood types" into this same cup to simulate a transfusion.
7. Notice the results. A color change means the transfusion failed.

For example, add Blood Type O to each of A, B, and AB blood types. Notice any color changes to A, B, or AB? Were these transfusions successful?

Add Blood Type A, B, and O, each separately to Blood Type AB. Notice any color changes to Blood Type AB? Were these transfusions successful?

One blood type is considered a universal donor; people with this blood type can donate blood to people with any blood type. Which blood type is the universal donor?

One blood type is considered a universal recipient; people with this blood type can receive blood from people with any blood type. Which blood type is the universal recipient?

Do you know your blood type?