Science Experiment:
Blood Type and Transfusion
Project: Health, Community Service

Supplies:

- 4 small plastic cups of water
- 4 small empty plastic cups
- Blue, green, and yellow food coloring
- Sharpie Pen

Time: 20-30 minutes

What to Do:
1. Make a small cup of yellow water, label "Blood Type A"
2. Make a small cup of blue water, label "Blood Type B"
3. Make a small cup of green water, label "Blood Type AB"
4. Pour a small amount of plain water into a cup, label "Blood Type O"
5. Pour a small amount of "Blood Type A" into an empty cup (recipient).
   Add a second blood type to it (donor), simulating a "blood transfusion."
   Repeat this until you have 4 different transfusions in the 4 empty cups.
6. Notice the results and record on the data table. A color change indicates that the transfusion failed. (In a real blood transfusion, this failure would be evidence by agglutination of the red blood cells.)

Reflect:
1. What happened when you added different types together?
2. What transfusions were successful? How do you know?
3. Did all of the colors always create a reaction? Did one color fail to create a reaction?
   a. What does the color change indicate? (A color change indicates that the transfusion failed.)
   b. What would a lack of color change indicate? (A lack of color change indicates the transfusion was a success.) (The plain water "Blood Type O" is a universal donor – it does not change any of the other colors because anyone can accept that blood.)

Apply:

Why is it important to know an individual's blood type? *Could knowing your own blood type impact your health?* Why might someone need a transfusion? What are some reasons why transfusions may need to happen in our communities (natural disasters, cancer, etc.) How do health care professionals and hospitals get the blood that they use for transfusions? Can you make a difference in your community by donating blood?

Donating blood and organizing blood drives is a great way to support your community. Find out more about organizing a blood drive here: http://www.redcrossblood.org/hosting-blood-drive.