Blood Type Demonstration

Primary Subject: Science  
Secondary Subject: PE/Health  
Grade Level: 9-12

<table>
<thead>
<tr>
<th>Overview</th>
<th>Are you teaching the blood types A, B, AB, and O? Well, here is an easy way for kids to learn the compatibility of the different blood types.</th>
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<tr>
<td>Objective</td>
<td>After this experiment students will be able to evaluate and determine blood type compatibility with 100% accuracy.</td>
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| Materials | • 16 cups filled with water (four for each blood type)  
• Red food coloring  
• Blue food coloring  
• (Optional) Red, blue and purple pencils or pens of some sort for each student  
• Blood Type Chart: |
|          | ![Blood Type Chart](image) |

| Standards | Students will learn more in-depth detail of the importance of genetic information and determining biological inheritance. |
| Procedure | 1. Fill 16 cups with water.  
2. Put red food coloring in four cups to represent type A blood.  
3. Put blue food coloring in four cups to represent type B blood.  
4. Put blue and red food coloring in four more cups to make a purplish color; this will represent type AB blood.  
5. Do not put anything into the last four cups; this will represent blood type O.  
6. Request four volunteers to represent the four blood types. Give them an appropriate name badge: A, B, AB, or O (use an outline letter). Give them their four glasses of water.  
7. First, instruct "A" to pour one of his red "A" blood type cups into another one of his "A" blood type cups. Since the color did not change, blood type A is |
compatible for blood transfusions with blood type A, and students should mark their charts to reflect this. (They could use a red marker to write the word "YES" in the chart.) You can then either mark the cup A→B, or just discard it.

8. Next, red type "A" pours one of his cups into a blue type "B" cup. Since the color changed to purple, the type A blood and the type B blood are not compatible and students should mark (NO) on their chart.

9. Then he will pour a different cup into the purple AB blood type.

10. Finally, red type A will pour the last cup into type O.

11. Repeat the steps with type B, AB, and O making sure, for example, when "B" takes his turn, he does not mix with red type "A" who already poured into B. If you threw away the glasses after the mixture compatibility/color was recorded, this will not be a problem. Otherwise, just instruct the students not to mix into a labeled cup.

Results and conclusions:

- Blood type A can only be given to type A and AB patients.
- Blood type B can only be given to type B and AB patients.
- Blood type AB individuals can receive blood from everyone, but they can only donate to other AB blood type patients.
- Blood type O individuals can only receive type O blood, but they can donate blood to every other type.

(Standards from Indiana science section AS.4:
http://dc.doe.in.gov/Standards/AcademicStandards/StandardSearch.aspx)