Worksheet developed by T. Tomm (http://sciencespot.net/) for use with the activity at https://educationalgames.nobelprize.org/educational/medicine/bloodtypinggame/gamev2/index.html

Nobel Prize - Blood Typing Game

Name _________________________

Go to http://sciencespot.net/ → Kid Zone → Forensic Science Links Page 2 to find the link.

Part A: What is a blood type?

1. What are the four components of blood? Identify each based on the description.
   - ___________ help the blood to clot, if you get a wound for example.
   - ________ contains salts and various kinds of proteins.
   - ________ blood cells transport oxygen to, and remove carbon dioxide from, the body tissues. They contain hemoglobin, a protein that binds oxygen. They
   - ________ blood cells fight infection by producing antibodies to destroy foreign material.

2. How our blood types determined? ________________

3. Complete this paragraph about blood types: The ________ blood types have different combinations of certain molecules, ________________, on the surface of the red blood cells. The ____ and ____ antigens are sugars and the ____ antigens are proteins. The antigens expressed in the ________ blood cells determine an individual's blood ____________. Other molecules, called ________________ may be found floating around in the blood plasma and differs depending on blood type.

Part B: How do you determine a person’s blood type?

1. Complete the steps in the blood typing procedure.
   1st – The patient’s blood is mixed with three different ________ representing the antibodies, A, B, or Rh.
   2nd – Look for clumping, or ________________, to show the blood has reacted with a certain antibody.
   3rd – Determine the ________ blood type based on the results. Clumping would show the blood has those antibodies.
   4th – Determine the ____ blood groups, which would be either a ____ or a ____.

2. Determine the blood type for each example below and then check your answers. Remember, clumping indicates a positive result for that factor.

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<thead>
<tr>
<th>Example 1</th>
<th>Example 2</th>
<th>Example 3</th>
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<tr>
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Part C: How do you perform blood transfusions?

1. Complete this statement: A blood __________________ involves taking blood from one person (a ________________) and giving it to another person, or recipient, to replace blood lost in major accidents, or during life-saving operations.

2. What would happen if a recipient would be given an incompatible blood type? ________________

3. Label each diagram to show which blood types are compatible.

4. Which blood type is known as the “universal recipient? ______

Challenge: Which blood type would be the “universal” donor? ______

Part D: Blood Typing Game

Click START PLAYING and follow the directions to complete the activity.

Patient A - Red-Haired Man

What is his blood type (based on the results shown)? ? ______

Which kind of blood can you give him? ______  ______

Patient B - Green-Haired Man

What is his blood type (based on the results shown)? ? ______

Which kind of blood can you give him? List 2. ______  ______

Patient C - Purple-Haired Lady

What is her blood type (based on the results shown)? ______

Which kind of blood can you give her? List 4. ______  ______  ______  ______