

Use the sites on the Forensic Science page of the Kid Zone at <http://sciencespot.net/>.

Site #1: Genes & Blood Type

1. Click the link for “What is blood?” and read the information to identify each part of blood based on the descriptions. Use **P** for plasma, **RBC** for red blood cell, **WBC** for white blood cell, and **PLT** for platelet.

_____ A mixture of water, sugar, fat, protein, and potassium and calcium salts.

_____ Contains a special protein called hemoglobin, which carries oxygen and causes these cells to be red

_____ More than 92% of this substance is water.

_____ Produce proteins called antibodies that help our bodies fight infection

_____ Contains chemicals that helps blood form clots

_____ Fragments of cells that gather at a cut or other wound and stick to the edges

_____ Makes up 55% of the blood

_____ Makes up 45% of the blood

_____ Makes up 0.1% of the blood

_____ Makes up 0.17% of the blood

2. Click the link for “What are blood types?” and read the information to complete the questions in this section.

- The two genes you receive from your parents determine your blood type by causing proteins called _____ to exist on the surface of all of your _____ blood cells.
- What are the six genotypes (combinations) for blood types? _____
- Other genes make proteins called _____ that circulate in your blood plasma. These are responsible for ensuring that only the _____ of your blood type exist in your _____.
- List the genotypes (letters) that would belong to each blood group below.

Type A = _____ Type B = _____ Type AB = _____ Type O = _____

3. Click the link for “What are blood transfusions?” and read the information to complete the questions in this section.

- In order for a transfusion to work, the agglutinogens on the surface of the _____ blood cells match the agglutinogens on the surface of the _____ blood cells.
- This means that the blood type of the _____ and the blood type of the person receiving the transfusion must be _____.
- If the blood types don't match, special antibodies in the recipient's blood, called _____, will attack the donated blood causing blood clots to form in a reaction called _____.
- People with Type O blood are said to be universal _____, because they can donate blood to everyone. However, they can only receive blood that is Type _____.
- People with Type AB blood are said to be universal _____, because they can receive blood from everyone.
- Fill in the chart below using the information on the page.

Blood Type	Can receive blood from ...	Can give blood to ...
OO		
AB		
AA, AO		
BB, BO		

Site #2: Blood Typing Game

Return to the [Forensic Science](#) page of the [Kid Zone](#) and try the Blood Typing Game. Use your notes and what you learned about blood transfusions to complete the game.

Patient #1 – Man with purple hair

What was his blood type? _____ Which bags of blood did you give to him? _____

Patient #2 – Older man with white hair

What was his blood type? _____ Which bag of blood did you give to him? _____

Patient #3 – Young lady with red hair

What was her blood type? _____ Which bags of blood did you give to her? _____