Unit 2: Tissues
Lesson 12 : *Blood (Part 2)- Key*

Activity 1 (50'): Blood types experiment

Step 1 (5'):In pairs, read the following text

Even if all people's blood has the same elements, there are 8 different blood types. This difference depends on the presence of different antigens and antibody in the blood. Antigens are proteins that are on the blood cell surface that can trigger an immune response if they are foreign to the body.

Firstly the blood is divided into 4 groups: A- B- AB- O.
This classification is due to the presence on the blood surface of the antigens A or B. When there are both antigens is called AB type, while blood cells without any antigens is defined as group 0.

Moreover, each of the four group blood type can be positive or negative. This characteristic depends on the presence or the absence on blood cells surface of the Rh factor, respectively.

Since some antigens can trigger an immune response it is very important to know the blood type during transfusion or surgery to avoid clumping of blood cells that can be potentially fatal.

Your blood type is inherited; you receive a total of two genes for your blood type from your parents, one gene from your father and one gene from your mother. The genes can be designated as A (AA, AO) for Type A blood, B (BB, BO) for Type B blood and O (OO) for Type O (no proteins present).

Step 2 (45'): In pairs perform the blood experiment

Kit. Simulated ABO & Rh Blood typing lab Activity Art. 110.100. Schluter Biologie

Simulated AB0 and Rh blood typing laboratory activity

Agglutination Reaction of AB0 Blood-Typing Sera

Reaction		
Anti-A Serum	**Anti-B Serum**	**Blood Type**
Agglutination	Negative	A
Negative	Agglutination	B
Agglutination	Agglutination	AB
Negative	Negative	0

Agglutination: clumping of a particulate suspension of antigen by a reagent, usually an antibody.

(If agglutination occurs only in the suspension to which the anti-A serum was added, the blood type is A.)

Materials

1 Bottle, Simulated Blood Mr. Black

1 Bottle, Simulated Blood Mr. Green

1 Bottle, Simulated Blood Mr. Pink

1 Bottle, Simulated Blood Ms. White

1 Bottle, Simulated Anti-A Serum

1 Bottle, Simulated Anti-B Serum

1 Bottle, Simulated Anti-Rh Serum

Blood Typing Slides

Toothpicks

Goggles

Procedure

1. Label each blood typing slide.

      Slide N1: Mr. Black   Slide N2: Mr. Green

      Slide N3: Mr. Pink   Slide N4: Ms. White

2. Place three drops of Mr. Black's blood in each of the A, B, and Rh wells of Slide N1.

3. Place three drops of Mr. Green's blood in each of the A, B, and Rh wells of Slide N2.

4. Place three drops of Mr. Pink's blood in each of the A, B, and Rh wells of Slide N3.

5. Place three drops of Ms. White's blood in each of the A, B, and Rh wells of Slide N4.

6. Place three drops of the simulated anti-A serum in each A well of the four slides.

7. Place three drops of the simulated anti-B serum in each B well of the four slides.

8. Place three drops of the simulated anti-Rh serum in each Rh well of the four slides.

9. Stir each well with a different clean toothpick for 30 seconds.

10. Place a piece of paper with some letters under each well and try to read it through the sample. If the text cannot be read, it is assumed that there is a positive agglutination reaction. Observe and record any observations in a table 1.

Table 1

	ANTI-A SERUM	ANTI-B SERUM	ANTI-Rh SERUM	Blood Type
Slide N1	Agglutination	No agglutination	Agglutination	A, Rh+
Slide N2	No agglutination	Agglutination	No agglutination	B, Rh-
Slide N3	Agglutination	Agglutination	Agglutination	AB, Rh+
Slide N4	No agglutination	No agglutination	No agglutination	O, Rh-

Exercise

Ms. White has a baby, Little Jim, whose blood type is 0 negative. Assuming that one of the three men is the father, identify him.

Slide 2: Green

Assessment

Grade	Explanation
10-9	Excellent behaviour and autonomous work using their own note-taking
8	Good behaviour and autonomous work
7	Good behaviour with some teacher suggestions
6	Sufficient behaviour and many teacher suggestions
5	Bad behaviour