

## BIO 26 PAL Worksheet

### Week 2 (#1): Pressures and Valves

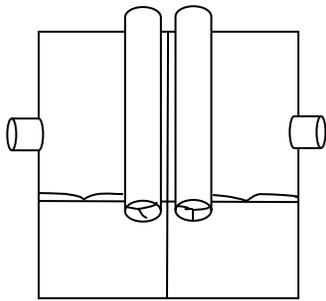
1. Have you ever played with water balloons?

Talk to the people around you about what happens to the pressure inside the water balloon as you fill it with water.

Talk to the people around you about what happens to the pressure inside a closed water balloon when you squish it from the outside (make a fist around it).

2. Today we will explore the pressure changes that occur in the heart during its contraction and relaxation and how these pressure changes relate to blood flow.

Let the following be a simple representation of the heart.



On your white board, create a similar drawing and label all chambers, vessels and valves.

Indicate the directionality of the valves (they can only open in one direction). What happens to valves when blood tries to flow the other direction?

Describe opening and closing of the valves in relation to atrial and ventricular systole and diastole and the associated pressure changes. Describe the importance of the chordae teninae during this process.

3. When you're lying on someone else's chest you can hear the steady lub-dub of the heart as it beats. Explain what is happening in terms of blood flow for the right and left sides of the heart during the following phases:

Before the lub

Lub

Before the dub

Dub

4. BONUS: Describe what you think might happen to the pressure inside the aorta during ventricular systole vs. diastole. What is blood pressure?