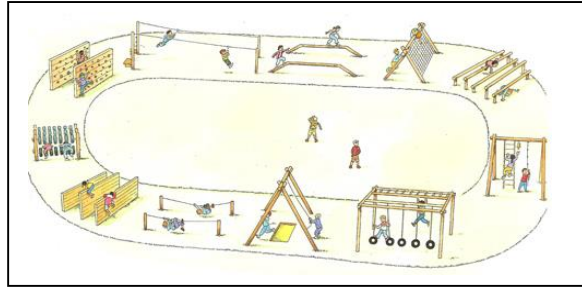
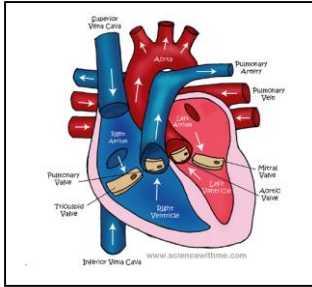


Blood Flow Obstacle Course Assignment



The task:

You are a designer hired to create an obstacle course that has students pretending to be the blood circulating through the heart. Students need to travel through the heart, going through each chamber and valve. Start the obstacle course where the blood from the body enters the heart, the Superior and Inferior Vena Cava. One side is blue to represent the fact that there isn't any oxygen. The next step is to go to the lungs and pick up oxygen, then return to the heart on the red side (oxygenated) and travel through the aorta. Have the obstacle course finish by exiting through the aorta – students (who are representing blood flow) can then either then go to the brain or other body parts.

How to complete the task:

Design your heart adventure challenge course. Draw and label the item at each station that represents each motion or step of the blood flow. Some ideas on material to use to create your design: scooters, red and blue rubber playground balls, mats, tunnels, hurdles, jump ropes, hula hoops, buckets, and more. Think about how that item can move and represent that function or part of the heart. For example, blue playground balls and scooters can be at the start of the right atrium. You may use the included diagram or you can draw your own. Explain where necessary and label EVERYTHING!!

Requirements:

1. Name the heart part and the function of each component of the heart next to the drawing or make a numbered or lettered key and write this information elsewhere.
2. For each heart section/part label the activity that students are completing that represents that movement occurring in the heart.
3. Explain why you think the activity is appropriate for that heart part and function.
4. Your activities should increase student heart rate and endurance by physically moving through the heart course.
5. Show blood flow and oxygenation with color (red/blue) and colored arrows. Use copy paper or larger, **no notebook paper**.
6. Heart parts to label:

Use the organizer on the next page to collect information, but you **MUST** label the heart parts on your obstacle course diagram as well as what activity it is. For example, "Mitral valve and students will run through a gate". Where the heart connects to other parts such as the lungs, brain, and all body parts, may be indicated, but those parts do not need to be included in your design.

Heart Obstacle Course Fact Organizer

Heart Part	Function	Activity	Why this Activity?
Inferior and Superior Vena Cava			
Right Atrium			
Tricuspid/Right AV valve			
Right Ventricle			
Pulmonary Valve and Artery			
Left Atrium			
Mitral Valve/ Bicuspid/Left AV Valve			
Left Ventricle			
Aortic Valve			
Aorta			

Heart Obstacle Course Rubric: Criterion A – Knowing and Understanding

At the end of year 3, students should be able to:

- i. describe scientific knowledge
- ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations
- iii. analyze information to make scientifically supported judgments

Achievement Level	Level Descriptor
0	The student does not reach a standard indicated by any of the descriptors below.
1-2	The student is able to: <ol style="list-style-type: none"> i. recall scientific knowledge – heart parts are either not labeled correctly or are non-existent and the blood flow is not correct ii. apply scientific knowledge and understanding to suggest solutions to problems set in familiar situations – heart parts are not labeled or are mostly incorrect, blood flow is either not labeled or is incorrect iii. apply information to make judgments – obstacle course does not reflect the ideas presented and no explanation is present
3-4	The student is able to: <ol style="list-style-type: none"> i. state scientific knowledge – heart parts are present but may not be correct, blood flow is labeled, but not completely correct ii. apply scientific knowledge and understanding to solve problems set in familiar situations – heart part functions are lacking in detail and activities do not always match function iii. apply information to make scientifically supported judgments – the obstacle course is present but lacks creativity to demonstrate the conceptual ideas that need to be represented and no explanations for the chosen activities
5-6	The student is able to: <ol style="list-style-type: none"> i. outline scientific knowledge – heart parts are mostly labeled correctly and are mostly in correct order ii. apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations – heart part functions are mostly correct and activities match functions iii. interpret information to make scientifically supported judgments – the obstacle course is straight forward, matching heart functions and blood flow, explanations for chosen activities are a bit lacking
7-8	The student is able to: <ol style="list-style-type: none"> i. describe scientific knowledge – heart parts are labeled correctly and are in correct order of blood flow ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations – heart part functions are correct and activities to represent these functions are innovative iii. analyze information to make scientifically supported judgments – the obstacle course is both thoroughly explained and creative; and matches heart functions and blow flow to represent the conceptual ideas to be communicated.

Numerical Score _____

IB Score _____