Go to the website listed above......check out the tabs listed in the upper right of the screen......

You should be on the Intro tab
Read the introduction on the right and answer the questions below

Introduction Questions:
1. How many patients will you examine? ______
2. What two guides are available to help you during this activity?  
__________________________________________  
__________________________________________
3. Outline the Learning Objectives
   * Symptoms of a selection of heart ____________, to serve as examples of what kinds of things can go wrong with the heart. ________ are symptoms detected and why?
   * ____________ and techniques used for diagnosis. What can the different techniques detect and how do they work?
   * Principles of ____________ analysis.

Click on the left to enter the “Virtual Cardiology Lab”.
Click on Exam door
Before you answer the quiz questions..... click on the cardiology guide and answer the questions below

Click on More about basic cardiac anatomy/physiology
Anatomy of the Heart
1. What is the essential function of the heart?

2. View animation
3. What is the function of the tricuspid?

4. View animation
5. View animation (very cool!)
6. What is the function of the chordae tendineae and papillary muscles? (watch the last animation carefully, this will help you visualize)

Pumping Action of the Heart
7. What “starts” the pumping action of the heart?

8. Ventricular contraction is associated with the beginning of systole or diastole? (circle one)  Relaxation? systole or diastole? (circle one)
9. Which ventricle generates a higher pressure, **right or left**? ________

**Electrical Activity of the Heart**

10. Vertebral muscles are excited by an electrical signal called an ________

11. What does “syncytium” mean?

12. What is the function of pacemaker cells?

13. The __________ is responsible for spreading the excitation throughout the two ventricles and causing the coordinated ventricular contraction.

Click on **Diag. Tools Guide**

Click on **Echocardiography Basics**

14. What exactly is “ultrasound”?

15. What is the probe of an echocardiography machine?

Click on **ECG**

16. An ECG is a graphics representation of the heart’s __________ over __________.

17. How many leads are connected to the patient? ________

18. Fill in the letters on the diagram below.

19. Describe what occurs in the heart during each phase:
   
   A. P wave
   
   B. QRS Complex
   
   C. T wave

Click on **MRI**

20. What do the letters MRI represent? ________________________

21. What is obtained by this technique?
22. What do the letters represent in the picture?

Click on Pedigree

23. What do circles represent? ____________
24. What do squares represent? ____________
25. Draw an example of a mating between individuals. ____________

Click on Auscultation

26. What is auscultation?

27. Label the sample phonocardiogram below.

28. Listen to the three samples at the bottom of the page, draw each phonocardiogram and label each.

Auscultation Quiz

circle the correct answer ....use the “scantron” in the upper left....click submit

1. When a doctor uses a stethoscope, what is being monitored?
   a) The sound made by the electricity spreading through the heart.
b) The sound made by the vibration of the heart and blood as pumping occurs.
c) The sound made by the contractile molecules of the muscles of the heart as they contract.
d) None of the above.

2. Which of the following conditions can cause irregularities in the sound of the heart?
   a) Moderate bradycardia.
   b) Mild mitral valve regurgitation.
   c) Mild atherosclerosis of the coronary arteries.
   d) Both a and b.

3. What is a murmur?
   a) A rumbling or blowing sound that is made by the heart, often by malfunctioning heart valves.
   b) A wheezing sound made by lungs, particularly during pneumonia, that may be superimposed on the heart sounds.
   c) A clicking sound made by artificial heart valves, especially when there is a failure in such devices.
   d) A low frequency sound heard as venous blood fills the atria of the heart, which is pronounced during heart attacks.

Record Patient Information below (IMPORTANT, there are different patients)
Name:
Age: Gender:
Patient complaint:

Doctor's Question
Based on your examination, what do you conclude?
Echocardiography Quiz

1. How are the echocardiography images made?
   a) An X-ray machine takes a series of pictures and the results are then displayed with a computer.
   b) Images are built by scanning the interior of the heart with a powerful fiberoptic device.
   c) Images are compiled from ultrasound reflected from the heart tissue.
   d) Images are obtained using radar.

2. What do orange and blue colors on the blood represent in Doppler echo images?
   a) The colors indicate whether the blood is moving toward or away from the probe.
   b) Orange represents oxygenated blood, blue de-oxygenated blood.
   c) The colors have no meaning; they are used to visualize the blood.
   d) The colors describe the temperature of the blood. Orange is warm blood; blue is cooler blood.

3. Which of the following characteristics of the heart cannot be measured with echocardiography?
   a) The motion of the mitral valves.
   b) The oxygen content of the blood.
   c) The size of the left ventricle.
   d) The rate of heartbeat.

Complete the scantron.....click submit

Echocardiography Exam
Click on patient
Click on echocardiography machine

Doctor's Question
Based on your examination, what do you conclude?

Complete scantron....click submit
Click on door to pedigree lab

Pedigree Analysis Quiz

1. In a pedigree chart, an unfilled square symbol with the numbers II3 below it represents which of the following?
   a) A person of unknown gender who has a genetic disease in the family being studied.
   b) The second individual, who is a male, in the third generation of the family.
   c) The second son or daughter in a family of three.
   d) The third individual, who is male, in the second generation of the family.
2. Which of the following statements is true about pedigree analysis?
   a) The purpose of pedigree analysis is to determine whether a disease is inherited and what the pattern of inheritance is.
   b) The purpose of pedigree analysis is to determine the paternity of a child.
   c) The purpose of pedigree analysis is to determine the relationships between individuals within a family spanning several generations.
   d) Both a and c.

3. Two of the six children of two perfectly healthy parents are born with a serious genetic disease. Which of the following statements is most likely? [Hint: the two parents are second cousins]
   a) The disease is dominant.
   b) The disease is recessive.
   c) The disease is dominant with variable expressivity.
   d) The disease is most likely not inherited and due to another cause.

Click on the pedigree chart

Draw the individual’s pedigree above and shade the individuals who are affected

Doctor's Question
Based on this data, what do you conclude?

____________________________________________________

____________________________________________________

Click on the exam door
Diagnosis Question: (use the encyclopedia to help you)
This patient is suffering from...

____________________________________________________

____________________________________________________

Continue to follow instructions .....if you have time see additional patients.