Principles of Biomedical Science

Virtual Learning

9-12 / PLTW® PBS

April 17, 2020

Principles of Biomedical Science

9-12/PLTW® PBS
Lesson: April 17 2020

Objective/Learning Target:

Students will be able to: Explain, draw, and identify the Electrical Conducting System of the Heart. *(Reference: PLTW® 4.2.3 EKG)*

Let's Get Started (Bell Ringer):

Read the following Article: Do not forget to watch the flash time example of electrical movement of the heart.

MedlinePlus Cardiac conduction system

Flash Time Movie, and Pre Quiz: Watch the quick flash time movie, and then take the pre quiz to see how your getting it.

HUMAN ANATOMY Animation: Conducting System of the Heart

Lesson/Activity:

Start by…

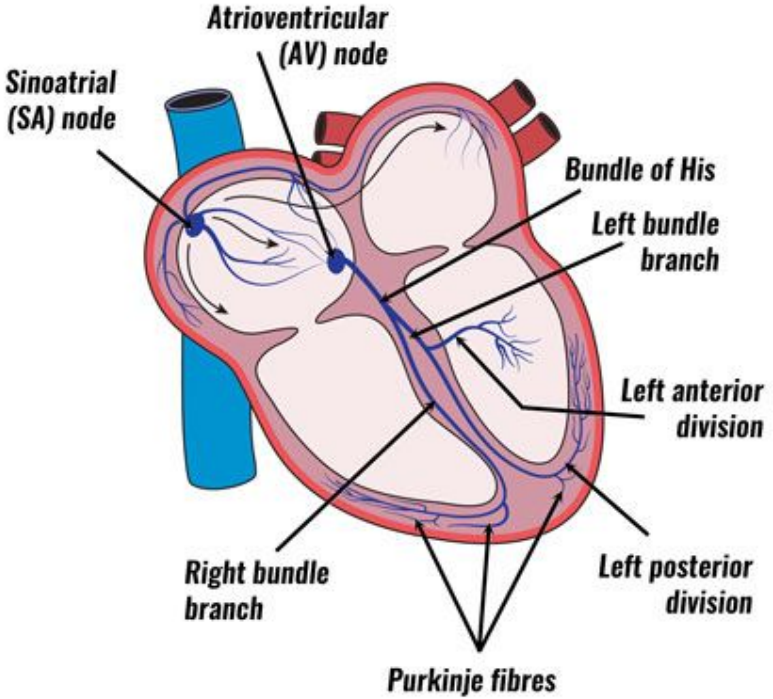
Use the resources from your bell ringer activity, or find your own resources to do the following activity:

Draw a ventral view diagram of the heart in your notebook or seperate piece of paper. In your drawing of the heart label where the following structures of the conduction system are located:

- Sinoatrial (SA) node
- Atrioventricular (AV) node
- Atrioventricular (AV) bundle (bundle of His)
- Bundle branches
- Purkinje fibers

Answers:

All Requested Information labeled and listed to the right.

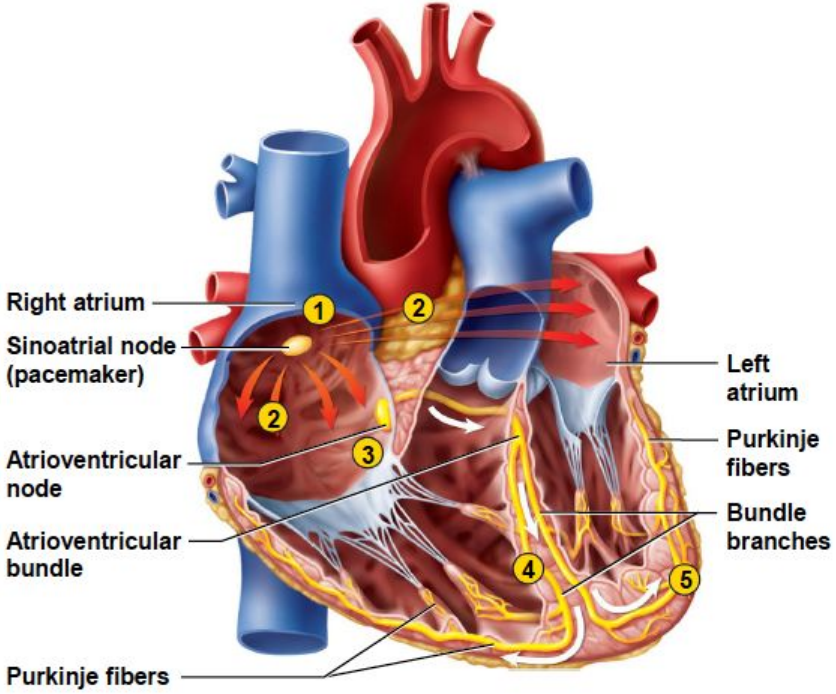


Lesson/Activity continued:

Watch the following video on how the Conduction system of the heart works. Conduction system of the heart - Sinoatrial node, AV Node, Bundle of His, Purkinje fibers Animation
Using your heart image from the earlier activity add the directions of movement the electrical impulses travel as they move through the heart.

Answers:

See image and explanation on right.

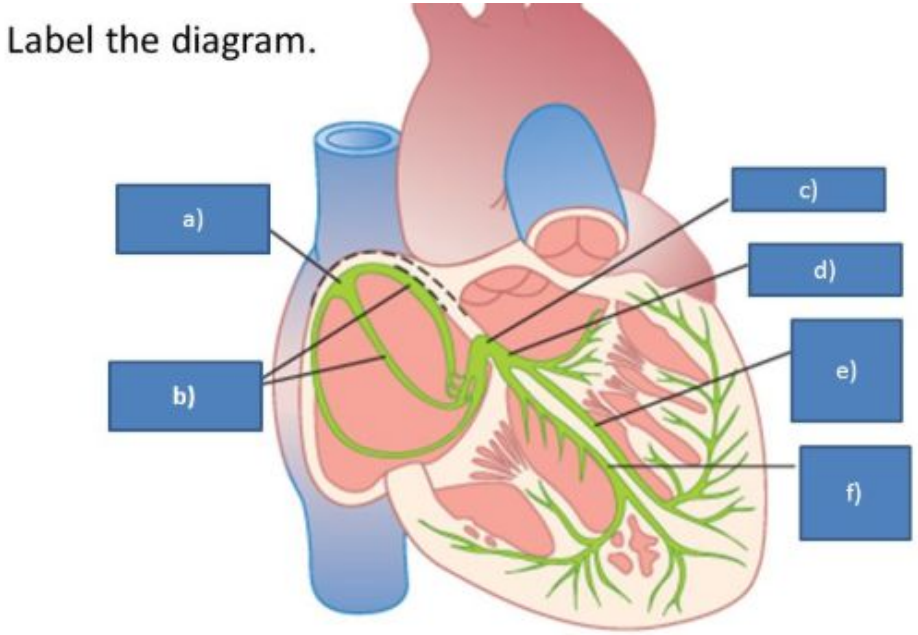


1. SA node fires.
2. Excitation spreads through atrial myocardium.
3. AV node fires.
4. Excitation spreads down AV bundle.
5. Purkinje fibers distribute excitation through ventricular myocardium.

Figure 19.12

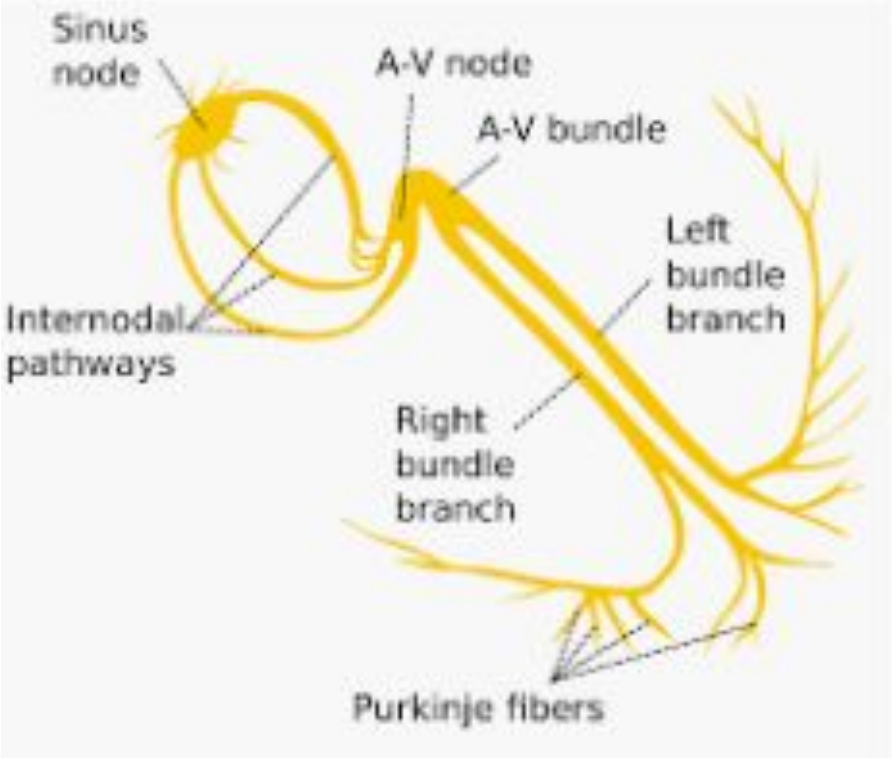
Practice:

1. What goes along with the letters in the boxes in the illustration to the right? Write down your answers in your notebook or on a scratch piece of paper.



Answers:

A. Sinus Node
B. Internodal Pathways, right and left
C. A.V. Node
D. A.V. Bundle
E. Left Bundle Branch
F. Right Bundle Branch



Additional Practice:

See what you can remember, take the Electrical Conduction System of the Heart Quiz, once you are done it will provide you with your results and correct answers.
Quiz on the Electrical Conduction System of the Heart Anatomy & Pathophysiology.