



(b) Anterior view of the heart in the thoracic cavity





(a) Anterior external view showing surface features





(c) Posterior external view showing surface features





(b) Anterior view of partially sectioned heart



Figure 20.19 Development of the heart. Arrows within the structures indicate the direction of blood flow.



The heart begins its development from a group of mesodermal cells called the cardiogenic area during the third week after fertilization.





. The fates of the regions are as follows:

1. The sinus venosus develops into part of the *right atrium*, *coronary sinus*, and *sinoatrial (SA) node*.

2. The atrium develops into part of the *right atrium*, *right auri- cle*, and the *left atrium* and *left auricle*.

3. The ventricle gives rise to the *left ventricle*.

4. The bulbus cordis develops into the *right ventricle*.

5. The truncus arteriosus gives rise to the *ascending aorta* and *pulmonary trunk*.

Figure 20.20 Partitioning of the heart into four chambers.



Partitioning the heart begins on about the 28th day after fertilization.





Fetal Circulation

