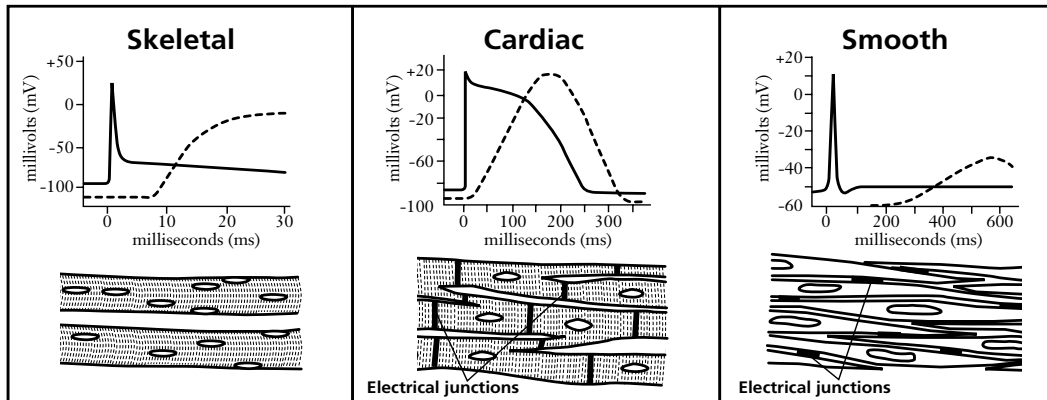


Applying Scientific Methods

The different function of skeletal, smooth, and cardiac muscle is reflected in the way each of the muscles contracts. Study the graphs below to see how the contractions compare. The black line indicates the electrical impulse that stimulates the muscle. The dotted line represents the muscle contraction.



1. Study the graphs. Which of the three muscle types contracts most quickly following electrical impulse? Slowest? Explain the basis for your answer.

2. Compare the electrical impulses in each of the muscle types. How does the electrical impulse for cardiac muscle reflect the function of the heart?

3. Using the graphs and the illustrations, compare the contraction in smooth muscle to skeletal muscle.

4. Explain how the structure of cardiac muscle helps to stimulate muscle cells more quickly than in other muscle types.
