Reading > Lesson 8: Completing Summaries/Charts > Exercise 8.1

FOCUS: Recognizing the most important topics and ideas of paragraphs and answering complete-the-summary questions.

Continue

TOEFL iBT® Online Prep Course | Activity 5 | Reading

Continue

DIRECTIONS: Read each passage. As you are reading, take brief notes on the main idea of each paragraph. At the end of the passage, you will find the introductory sentence for a brief summary of the passage. Complete the summary by dragging **three** of the answer choices that express the most important ideas of the passage next to the bullet points in the box. Three answer choices will not be used. *On an actual test, these questions would be worth 2 points each.*

Continue

The Study of Movement

TOEFL iBT® Online Prep Course | Activity 5 | Reading

Continue

Life is movement. Our muscles coordinate movement microscopically to enable us to walk and jog. Our hearts pump tirelessly for decades, moving blood through our bodies. Cell wall mechanisms move atoms and molecules in and out of cells. From the prehistoric chase of antelopes across the **savanna** to the pursuit of satellites in space, mastery of movement has been critical to our survival and success as a species.

Movement involves the displacement of an object from one place in space and time to another. Describing movement requires a convenient coordinate system and a specified origin. A frame of reference is a choice of coordinate **axes** that define the starting point for measuring any quantity.

The study of movement and of physical concepts such as force and mass is called dynamics. The part of dynamics that describes movement without regard to its causes is called kinematics. *Any* movement involves the concepts of displacement, velocity, and acceleration, and in the field of physics these concepts are used to study the movement of objects undergoing constant acceleration.

The first recorded evidence of the study of movement can be traced to the people of ancient Sumeria and Egypt, who were interested primarily in understanding the movements of heavenly bodies. The most systematic and detailed early studies of the heavens were conducted by the Greeks from about 300 B.C. to A.D. 300. Ancient scientists and laypeople regarded Earth as the center of the universe. This geocentric model was accepted by such notables as Aristotle (384-322 B.C.) and Claudius Ptolemy (about A.D. 140). Largely because of the authority of Aristotle, the geocentric model became the accepted theory of the universe until the seventeenth century.

About 250 B.C., the Greek philosopher Aristarchus worked out the details of a model of the solar system based on a

About 250 B.C., the Greek philosopher Aristarchus worked out the details of a model of the solar system based on a **spherical** Earth that rotated on its axis and revolved around the sun. He proposed that the sky appeared to turn westward because Earth was turning eastward. This model wasn't given much consideration, because it was believed that if Earth turned, it would set up a great wind as it moved through the air. We know now that Earth carries the air and everything else with it as it rotates. The Polish astronomer Nicolaus Copernicus (1473-1543) is credited with initiating the revolution that finally replaced the geocentric model. Copernicus's new system was heliocentric, or sun-centered. In this system, called the heliocentric model, Earth and the other planets revolve in circular orbits around the sun. This early knowledge formed the foundation for the revolutionary work of Galileo and Newton.

Movement is a vital part of the physical world, as necessary to molecules in cells as to planets orbiting the sun. Understanding it has taken a key place in the modern era, and thus the study of movement has become vitally connected to many disciplines. The great advances in physics in the study of motion during the sixteenth and seventeenth centuries ultimately contributed to popular interest in the subject and investigations and studies of movement in other disciplines and the arts. The famous French sculptor Auguste Rodin defined life as movement throughout his work in the late nineteenth century, while seventy years before, in 1830, the British landscape photographer Eadweard Muybridge initiated the development of cinema by his studies of the movements of racehorses. Today, the mastery and understanding of movement has extended well into the field of medicine, and has become vital to research in prosthetics, physical therapy, and a vast range of other areas.

1 The concept of movement can be readily applied to our daily lives and has been.

-
-
-

The geocentric theory was first challenged by Aristotle and Ptolemy, whose ideas changed the course of science.

Theories of movement are vital in a range of disciplines such as biology, film and photography, physics, medicine, and astronomy.

Advances made by astronomers in the sixteenth and seventeenth centuries revolutionized the understanding of movement.

Kinematics involves the study of objects that are undergoing constant acceleration.

The study of movement originated in the scientific work of the ancient Sumerians, Egyptians, and Greeks.

Although the study of movement began with the Greeks, it was an Englishman who showed how movement is a part of our everyday lives.