

Name _____

Enzymes: The Digestive Superheroes

Open-Ended Response Answer Key

1. Enzymes act as biological catalysts in the digestive system, accelerating chemical reactions involved in breaking down food into smaller molecules for absorption. They make digestion efficient and ensure that nutrients are extracted from food for use by the body.
2. Villi increase the surface area of the small intestine, allowing for better nutrient absorption. Brush border enzymes, located on the surface of villi, further break down nutrients into their simplest forms, facilitating absorption into the bloodstream.
3. A deficiency in lactase results in lactose intolerance, where the body cannot properly digest lactose, leading to digestive discomfort such as gas, bloating, and diarrhea. This occurs because lactose remains undigested in the digestive system.
4. Without lipase, the digestion of fats in the digestive system would be impaired. Fats would not be broken down into fatty acids and glycerol, making it difficult for the body to absorb and utilize these essential nutrients. This can lead to malnutrition and other health issues.

