

- #. What is most food mostly made of?
- #. How can the formation of ice crystals damage food?
- #. What is each of the “big” food molecules made of? What are the building blocks of each of the food macromolecules?
- #. The process of adding a water molecule to break or cut a large molecule is called...
- #. The process of removing a water molecule to join together two smaller pieces is called...

- #. What is the difference between primary, secondary, tertiary, and quaternary structure of a protein?
- #. If a molecule has a lot of hydroxyl groups (-OH), is it more likely to be soluble in water or in fat?
- #. Do long chains of carbon and hydrogen tend to make molecules more hydrophobic or more hydrophilic?
- #. What does it mean to denature a protein?
- #. What is the difference between an acid and a base?

- #. Describe some characteristics of acids and bases.
- #. What are the 3 common *monosaccharides*?
- #. What are the 3 common *disaccharides* and which monosaccharides are each made from?
- #. Describe the similarities and differences between starch, glycogen, and cellulose.
- #. What are the differences in structure and macroscopic properties between a saturated fat and an unsaturated fat?

- #. What is the primary purpose for mammals to produce milk?
- #. What are the main proteins found in milk?
- #. How are the 2 main milk proteins different?
- #. Which milk protein is responsible for binding and transporting calcium?
- #. Why do most mammals become lactose intolerant as they get older?

- #. What is the source of the intestinal symptoms for people who are lactose intolerant?
- #. What are the differences and similarities between espresso foams and whipped cream?
- #. Why does over-whipped cream taste “greasy”?
- #. Why does yogurt thicken?
- #. What purpose do additional thickeners serve in commercial yogurts?

- #. What is the difference between the bacteria that produce yogurt and the bacteria that produce sour cream?
- #. What is cheese?
- #. What is the primary role of salt in cheese?
- #. Some enzymes used in cheesemaking hydrolyse fats and proteins during the aging process. How does this affect the final cheese?
- #. Why is it important to get chymosin (rennet) from young calves rather than adult cows?

- #. How was rennet “discovered”?
- #. What specific protein does chymosin (rennet) react with during cheesemaking?
- #. When chymosin (rennet) reacts with protein during cheesemaking, what happens on a molecular level?
- #. When acid reacts with protein during cheesemaking, what happens on a molecular level?
- #. What are the main roles of *propionibacteria* in cheesemaking?

- #. *Brevibacterium linens* mainly contributes what to cheese?
- #. What are the properties of *Penicillium roqueforti* and other “blue molds” used in cheesemaking?
- #. How are the “white molds” used in cheesemaking different from the blue molds?
- #. When slowly adding heat to try and melt cheese, what component (food molecule) is affected first? Second?
- #. In dishes that contain melted cheese, what causes “stringiness”?