

Core Objective 1

C.1 Properties of Water

Describe the properties of water and their applications to food science.

- I can qualitatively and quantitatively describe the properties of water such as solubility, vapor pressure, boiling point, and freezing point.
- I can quantitatively describe the concentration of a solution.
- I can differentiate between solutions, colloids, suspensions, and emulsions and discuss their applications to food science.

Core Objective 2

C.2 Properties of Lipids

Describe the properties of lipids and their applications to food science.

- I can identify molecules as lipids based on their structure and describe their properties.
- I can predict the products of hydrolysis and dehydration reactions involving lipids, given the reactants. I can identify the starting materials of hydrolysis and dehydration reactions involving lipids when given the products.
- I can describe the role of lipids in food chemistry and apply knowledge of lipid chemistry to food preparation.

Core Objective 3

C.3 Properties of Carbohydrates

Describe the properties of carbohydrates and their applications to food science.

- I can describe carbohydrates using appropriate vocabulary.
 - I can correctly apply the terms: carbohydrate, monosaccharide, oligosaccharide, polysaccharide, disaccharide, trisaccharide, aldose, ketose, triose, tetrose, pentose, hexose, and glyceraldehyde.
 - I can name carbohydrates and draw both their Fischer and Haworth projections (including glucose from memory).
 - I can correctly apply D- and L-, alpha and beta, furanose and pyranose nomenclature.
- I can describe reactions (ester and ether formation, reduction, oxidation, glycosides, and disaccharide formation) of monosaccharides and provide products when given starting materials and conditions.

Core Objective 4

C.4 Properties of Proteins

Describe the properties of proteins and their applications to food science.

- I can describe amino acids, peptides, and proteins using appropriate vocabulary.
- I can name amino acids and draw their structures (including glycine from memory).
- I can describe reactions of amino acids.
- I can describe proteins in terms of their applications to food chemistry.