

# Food Chemistry Concept Storyline

## Unifying Concept

Living organisms are organized into functional systems and require a balance of nutrients for their growth and survival.

## Unit Concept

Humans need a range of nutrients, including carbohydrates, fats, and proteins, to provide a well-balanced diet.

## Grade-Level Concept

Foods contain nutrients that may be identified by chemical and physical tests. Knowing about nutrients helps people choose healthy diets.

### Subconcept 1

**Foods provide a variety of nutrients.**

Lesson 1: Pre-Unit Assessment: Thinking about Foods We Eat  
*Students discuss what they know about foods and nutrients.*

Lesson 2: Identifying Healthy Foods: Getting Ready  
*Students explore the characteristics of foods they will be testing in the unit.*

Lesson 17: Post-Unit Assessment: Sharing What We Know about Food Chemistry  
*Students discuss and reflect on what they have learned about food and nutrition.*

### Subconcept 2

**Chemical and physical tests may be used to determine whether a food contains starches, glucose, fats, or proteins.**

Lesson 3: Testing Liquids for Starch  
*Students use iodine as a test for starch in five known liquids.*

Lesson 4: Testing Foods for Starch  
*Students apply the starch test to several foods.*

Lesson 6: Testing Liquids for Glucose  
*Students test for the presence of glucose in five known liquids.*

Lesson 7: Testing Foods for Glucose

*Students apply the glucose test to several foods.*

Lesson 9: Testing Liquids for Fats

*Students use unglazed brown paper as a test for fats in five known liquids.*

Lesson 10: Testing Foods for Fats

*Students apply the fat test to several foods.*

Lesson 12: Testing Liquids for Proteins

*Students use Coomassie blue as a test for proteins in five known liquids.*

Lesson 13: Testing Foods for Proteins

*Students apply the protein test to several foods.*

Lesson 16: What Is in a Marshmallow? Applying What We Have Learned  
*Students use the testing procedures to identify the nutrients in a marshmallow.*

### Subconcept 3

**Nutrients are essential to human health.**

Lesson 5: Learning More about Starch

*Students share their results from Lesson 4, retest some of the foods, and read about the nutritional value of starch.*

Lesson 8: Learning More about Glucose

*Students share their results from Lesson 7, retest some of the foods, and read about the nutritional value of glucose.*

Lesson 11: Learning More about Fats

*Students share their results from Lesson 10, retest some of the foods, and read about the nutritional value of fats.*

Lesson 14: Learning More about Proteins

*Students share their results from Lesson 13, retest some of the foods, and read about the nutritional value of proteins.*

### Subconcept 4

**Food labels provide information on nutrients that the body needs to stay healthy.**

Lesson 15: Examining Labels: Making the Connection  
*Students link their test data to information on a Nutrition Facts label.*