Salads & Dressings

Salad Bar Suggestions
A new restaurant featuring an extensive salad bar is opening in your community. The restaurant’s owners have asked citizens to suggest foods to include at the salad bar. Write a business letter to the owners in which you introduce yourself and give your suggestions for great salad bar offerings.

Writing Activity
Business Letter

Salad Bar Suggestions
A new restaurant featuring an extensive salad bar is opening in your community. The restaurant’s owners have asked citizens to suggest foods to include at the salad bar. Write a business letter to the owners in which you introduce yourself and give your suggestions for great salad bar offerings.

Writing Tips
Follow these steps to write a business letter:
- Include a return address heading, date, recipient’s address, and salutation.
- Use a polite tone.
- End your letter with a closing and your name.
- Key the letter, and proofread the letter to make sure it is free from errors.

Activate Prior Knowledge
Explore the Photo

Caption Answer
The salad includes salad greens and vegetables from the vegetables group. The dressing may contain oil from the oils group or dairy ingredients from the dairy group.

Discussion
Ask students: what type of salad is a complete and healthful meal? (Answers may include: A salad that represents all the food groups, or includes vegetables and is served with a low-fat dressing.)
Before You Read

**Preview** Examine the photos, figure captions, and headings in this chapter. Think about how salads can include foods from all the food groups.

**Read to Learn**

**Key Concepts**
- List and describe seven types of salads.
- Explain how to wash and store salad greens.
- Identify different types of salad dressings and explain how to prepare them.
- Describe four methods for serving salads.

**Main Idea**
Salads are mixtures of raw or cooked ingredients that can be creatively prepared to suit a variety of tastes and purposes.

**Content Vocabulary**
You will find definitions for these words in the glossary at the back of this book.
- salad
- crouton
- tabbouleh
- molded salad
- tossed salad
- salad dressing
- emulsion
- temporary emulsion
- permanent emulsion
- vinaigrette
- mayonnaise
- cooked dressing
- dairy dressing

**Academic Vocabulary**
You will find these words in your reading and on your tests. Use the glossary to look up their definitions, if necessary.
- minimal
- restore

**Graphic Organizer**
Use a graphic organizer like the one below to identify and define types of emulsions.

<table>
<thead>
<tr>
<th>TEMPORARY EMULSION</th>
<th>PERMANENT EMULSION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Graphic Organizer** Go to connectED.mcgraw-hill.com to download this graphic organizer.

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**Bell Ringer Activity**

**Wide World of Salads**
Ask students to brainstorm as many different salads as they can. Encourage them to include those made with pasta or grain. Then, ask students: What do they all have in common? How do the salads differ? Are they served before dinner, as a main course, a side, or dessert? Are some more nutritious than others? Explain.

**Preteaching Vocabulary**
Have students use index cards to create flash cards for each vocabulary word. The front of each card should have the word. On the back, have students write the word’s definition.

**Graphic Organizer**
(A temporary emulsion is a mix of liquids that quickly separates when not stirred. A permanent emulsion is a mix of liquids that will not separate.)

**Develop Concepts**

**Main Idea** Discuss the main idea with students. Ask students: What type of salads can be served as a dessert? (Answers will vary, but may include: fruit salads, gelatin or jello salads, ambrosia salad, frozen fruits salads, and molded salads.)
Types of Salads

A salad is a mixture of raw or cooked vegetables and other ready-to-eat foods, usually served with a dressing. Salads can be appetizers, entrées, side dishes, and even desserts. Salads made with fresh ingredients and minimal, or a small amount of, fat are healthful food choices.

Salads can be made with foods from all of the food groups. Salads come in sweet and savory varieties and can feature vegetables, fruits, grains, and protein foods.

Vegetable Salads

Vegetable salads are made with raw, cooked, or canned vegetables. Vegetable salads usually accompany a meal, but they can sometimes be a main dish.

Cole slaw and potato salad are two well-known vegetable salads. Cole slaw is shredded cabbage mixed with oil and vinegar or a creamy dressing. Potato salad is sliced or cubed cooked potatoes mixed with mayonnaise and seasonings. Both cole slaw and potato salad can be accented with other vegetables, such as carrots, for extra fiber, flavor, crunch, color, and nutrition.

Caesar salad is another popular vegetable salad. It is made from romaine lettuce with a dressing that traditionally consists of olive oil, lemon juice, salt, pepper, Worcestershire sauce, yogurt, and Parmesan cheese. The salad is topped with croutons, small pieces of bread made crisp by baking at a low temperature. They are always added to a salad last so they are crisp when served. The salad is named for its creator, Caesar Cardini, and not for the Roman emperor.

Fruit Salads

Fruit salads can provide as much variety as vegetable salads. Ambrosia salad, for example, combines the sweetness of mandarin oranges, bananas, cherries, miniature marshmallows, and flaked coconut with the texture of pecans and tang of pineapple chunks and sour cream. Waldorf salad mixes diced apples, sliced celery, chopped walnuts, and mayonnaise. A refreshing, light dressing can be made with fruit vinaigars or spiced citrus juice.

A rich, sweetened dressing turns fruit salad into a dessert. You can mix fruit with cream cheese thinned with evaporated milk or pudding cooked with juice. Frozen fruit salads are usually made with fruits and gelatin, plus mayonnaise, cream cheese, or cream.

Cooked Grain Salads

Any grain can be used in a salad. You can dress grains lightly with oil, vinegar, salt, and pepper or toss them with a creamy dressing. For color and texture contrast, you can add diced bell pepper, sliced olives, or parsley.

Tabbouleh (ta·bō·lē) is a Middle Eastern salad of cooked bulgur, chopped tomatoes, onions, parsley, mint, olive oil, and lemon juice. Polynesian rice salad features rice mixed with pineapple chunks and orange juice sweetened with honey.
**Salads in Space**

Astronauts must go without fresh fruits and vegetables for most of their stay in space. The practice of space farming, however, could change that. Already, astronauts have grown produce on the International Space Station. One experiment involved growing soybean seeds. The plants thrived in a special growth chamber under conditions monitored and controlled by scientists on earth. The soybeans were the first crops to be sprouted, raised to maturity, and harvested entirely in outer space, and were similar physically and biologically to their earthly counterparts. In the future, scientists hope to grow a variety of crops in space. Someday, astronauts may be able to enjoy fresh salads from their own space gardens.

**Get Involved** In addition to changing the diets of astronauts, how might space farming affect people on earth? Research this topic and write a paragraph about your findings.

Grain salads tend to be more flavorful if prepared warm and then chilled for serving. Hot grains absorb dressings and seasonings better than cold grains. To dry drained, cooked pasta, spread it onto a paper towel-lined baking sheet and roll it gently.

**Dry Bean Salads**

You can make bean salads with lentils, all kinds of beans, and different seasonings and dressings. You might combine navy and pinto beans with diced tomatoes, sourdough croutons, rice vinegar, and basil. Three-bean salad is a popular mix of common types of beans in oil and vinegar. Seasoned lentils make a tasty cold salad as well. Adding beans to a tossed green salad makes it more filling. There are many recipes for cold salads mixing beans and cold cooked rice with a vinaigrette.

**Cooked Meat, Poultry, Fish, and Egg Salads**

Chopped salads are made with cooked meat, poultry, fish, or eggs. Chop the main ingredient, then mix it with seasonings and diced vegetables. Onions, celery, and bell peppers are common additions. Most chopped salads are paired with dressing made with sour cream or mayonnaise. You can also try tasty light dressings, including lime juice and honey or rice vinegar and sesame oil.

**Combination Salads**

A combination salad puts together several different foods. Combination salads can be side dishes or entrees. Greens, tomato wedges, and slices of hard-cooked egg make a filling side salad. Adding strips of ham, turkey, and cheese makes a chef’s salad, which is served as a main dish.

 Ницoise salad, for example, is a French salad made with tomatoes, anchovies, black olives, green beans, tuna, new potatoes, and hard-boiled eggs, served with an Italian dressing. Other ingredients might include capers, shallots or onions, cucumber, artichoke hearts, or raw peppers.

A wilted salad consists of leafy dark greens and crumbled bacon drizzled with a dressing of hot bacon fat, sugar, and vinegar. The hot fat wilts the greens, warming and softening them. You can also add hard-cooked eggs, tomatoes, mandarin oranges, or cashews.

Leftovers are perfect ingredients for combination salads. Toss cooked vegetables, meat, or eggs with various greens or grains to make interesting combinations.

**Molded Salads**

A molded salad is a salad made with gelatin that thickens and conforms to the shape of a container called a mold. In the past, extracting gelatin from meat and bones was a costly process, and molded salads were rare and expensive. Today, purified gelatin is inexpensive. It is available as an unflavored powder and in sweetened, dry mixes with many different fruit flavors. You can also buy gelatin made from non-animal sources.

**Writing Support**

**Write a Report**

**Salad Suggestions** Tell students: You manage a successful catering company. The owner has asked you to come up with three potential candidates for a new chopped salad to add to the menu. Write a report that offers suggestions for three combination salads. (Reports will vary slightly, but students should identify three combination salads that could be added to the menu. Students should justify their suggestions with specific reasons.)
**Working with Gelatin**

Gelatin dissolves in hot water. Like egg protein, gelatin is made of long amino acid chains. Adding hot water breaks the bonds that hold the chains together. As the water and gelatin chill in the refrigerator, these chains re-unite in a new structure. Water is trapped in this new protein network, which thickens to hold itself together. Through this process, gelatin can “tie up” as much as 100 times its weight in water. One tablespoon of unflavored gelatin can set 2 cups of liquid.

Before it sets, gelatin traps other foods, such as fruits, vegetables, cooked shrimp, chopped nuts, cottage cheese, or salsa. Lightweight foods, including bananas, apples, pears, and celery, tend to float to the top. Heavier foods, including poultry, fish, grapes, citrus fruits, canned fruits, and many vegetables, drop to the bottom. This can create an attractive layered look. If you would rather distribute foods evenly, fold them in as soon as the mixture has thickened to the consistency of cold egg whites.

A few fruits produce unwelcome results in gelatin salads. Fresh and frozen pineapples, mangoes, kiwifruit, and papayas contain the enzyme bromelin, which digests proteins and keeps the gelatin mixture from setting. Cooked or canned forms of these fruits and juices will work because the heat of cooking or processing deactivates the enzyme.

**Molding a Salad**

Follow these steps to create a molded salad:

1. **Dissolve the gelatin.** Mix the gelatin with hot water until it dissolves, according to package directions.
2. **Add mix-ins.** Mix the salad ingredients into the gelatin.
3. **Pour into the mold.** Lightly oil the inside of the mold or rinse it with cold water so the salad will be easier to remove later. Then pour in the gelatin mixture. You can choose a ring mold or one with a tiered design or intricate details.
4. **Chill.** Refrigerate the molded salad until it is completely set.

5. **Remove from the mold.** Dip the mold almost to the rim in warm (not hot) water for about 10 seconds. Watch a timer so the gelatin does not melt. Lift it from the water, and shake it slightly to loosen the gelatin. Run the tip of a small, pointed knife between the salad and the rim of the mold to loosen the edges of the salad from the mold. Place a serving plate upside down on top of the mold. Invert the plate and mold together so the plate is on the bottom. Shake gently again, and lift off the mold. If necessary, repeat the steps until the salad is released. Slide the salad carefully to center it on the plate. This is easier if you rinse the plate in cold water first.

**Salad Greens**

Figure 39.1 shows and defines several popular greens used in salads. Mixing different kinds of greens adds interest to a tossed salad. When greens, other chopped or sliced vegetables, and a dressing are mixed together, they are a tossed salad.

**Selecting Greens**

In the supermarket, greens may be sold either in bulk or premixed and packaged. If you keep a home garden, check to see what varieties of greens grow well in your area.

When you buy salad greens, keep in mind that color is the key to nutrition. The greener the greens are, the more vitamin A they contain. Examine greens for brown spotting, called rust, or other signs of disease or spoilage. If you buy packaged greens, look for the sell-by date to get the freshest product.

When buying greens, consider the recipe and dressing you plan to use. Some salad recipes work best with certain greens. Romaine, for example, is typically used for Caesar salad. Iceberg lettuce is often cut into wedges and served with blue cheese dressing. Crisp greens, such as iceberg and romaine, hold up better under thick, creamy dressings than soft greens such as mesclun and watercress.
A Guide to Salad Greens

**A Variety of Flavors** Salad greens have different colors, shapes, textures, and flavors, from mild to sharp. *Which of the greens shown here have a nutty flavor? Which have a bitter flavor?*

**Romaine** (rōˈmān)  
Long, narrow head of loosely packed leaves. Outer leaves are dark green, and center leaves are pale green. Crisp texture with a sharp, nutty flavor. Most nutritious lettuce.

**Iceberg Lettuce**  
Large, round, compact head with pale green, crisp leaves. Mild flavor. Low in nutritional value.

**Mesclun** (ˈmes-kla�)  
A popular mix of various types of young, small greens. Sold in bulk or prepackaged.

**Escarole** (ˈes-kə-rōl)  
Flat, loose head of broad, slightly curved leaves. Outer leaves are green, and inner leaves are yellow. Firm texture with a slightly bitter flavor.

**Arugula** (aˌryü-ɡa-lə)  
Small, bright green, smooth leaves. Sold in small bunches. Highly perishable. Tender texture with a pungent, peppery, nutty flavor.

**Endive**  
Sometimes called chicory. Loose head of curled, lacy leaves with bright green edges and an off-white center. Best mixed with other greens.

**Butterhead Lettuce**  
Small head with loosely packed leaves. Sweet flavor with a tender, buttery texture. Wash and handle gently to avoid leaf damage. Bibb and Boston are two varieties.

**Leaf Lettuce**  
A loose bunch of crinkly leaves. Crisp texture with a mild flavor. Leaves are usually medium to dark green. Some varieties have red-tipped leaves.

**Radicchio** (raˌdi-kē-o)  
Small, loose head, either round or long and narrow. Colors vary from deep red with white ribs to streaked with pink, red, or green. Firm texture with slightly bitter flavor.

**Watercress**  
Small, dark green leaves. Crisp texture with a slightly bitter, peppery flavor. Grows in running streams.

### Discussion
Ask students: Why might it be a good idea to chill a salad bowl or plate before serving a salad? (It helps the salad stay cold for serving and eating.)

### Universal Access
**Visual Learners**

**Lots of Lettuce** Obtain pictures of the different salad greens pictured in Figure 39.1. Have students cut and paste them on one side of index cards. Have students write the names of the different salad greens on the backs of the cards. Then have students quiz each other using the flashcards.

**Reading Strategy**  
**Know Your Greens** Ask students: Which greens are the healthiest? Point out to students that iceberg lettuce is a standard at many salad bars even though other greens are more healthful in terms of nutrient content. For example, romaine lettuce has more calcium, iron, and vitamins A and C than iceberg. Ask students to conduct research to find the nutritional content for at least five of the greens shown in Figure 39.1. Ask students to compare their findings and use a chart to rank the greens from the most to least nutritious. (Answers will vary, but students should identify the nutritional content of at least five greens from Figure 39.1 and use a chart to rank their findings from most to least nutritious. Have students share their findings and rank with the class.)

### Mini Clip

**Reading: Accessing Prior Knowledge**

A teacher helps students make connections between what they know and the upcoming reading selection.
Cleaning Greens

Washing greens rinses away the soil, as well as harmful bacteria. Wash, drain, and refrigerate salad greens as soon as possible after buying to help them stay crisp.

To clean most greens, pull the leaves away from the bunch and wash them individually under cold, running water. You may want to soak them for about ten minutes to rehydrate their cells and restore, or renew, crispness. Drain the leaves well, placing each one, stem-side down, in a colander so the water drains off easily. You may need to pat the greens dry with a clean cloth or paper towel before storing them.

Iceberg lettuce requires a different cleaning technique. Hold the head of lettuce in your hands, core-side down. Strike the core firmly on a counter to loosen it. Pull out the core and let cold water run into the cavity for a minute, until it pours out between the leaves. Let the head drain in a colander, core-side down.

It is a good idea to wash all greens, even prewashed greens, to get rid of dirt and bacteria. Always wash mixed greens bought in bulk.

Storing Greens

Drain salad greens as thoroughly as possible before storing them. Water hastens spoilage. Water also dilutes salad dressing, making a watery salad.

A salad spinner makes it easy to drain washed greens. This tool has an outer plastic bowl and an inner perforated basket. Pressing a button or turning a handle spins the inner bowl. As it spins, the water flies off the leaves and is caught in the outer bowl.
Keep washed and drained greens wrapped in a dry paper towel and refrigerated in a plastic container or a large plastic bag. Most greens are best when used within one week. Iceberg lettuce holds its quality for about two weeks. If greens look limp, immerse them for a few minutes in ice water and dry them just before making the salad. To prevent enzymatic browning, tear greens or cut them with a plastic lettuce knife rather than a metal knife.

**Reading Check**

Is it necessary to wash packaged, pre-washed or ready-to-eat greens?

## Salad Dressings

Some salads are so flavorful that you could eat them with just a splash of lemon juice and a sprinkling of herbs or seeds. Many people like to add **salad dressing**, a seasoned mixture, often consisting of oil and vinegar, used to flavor a salad. Salad dressing also acts as a binder, holding the salad ingredients together.

Dressings add almost all of the fat and most of the calories in many salads. Use just enough dressing to give flavor, and choose low-fat and nonfat dressings whenever you can. It is polite to offer a variety of dressings at the table so people can choose the type and amount they want.

The dressing you serve should complement the other flavors in the salad. Experiment to find combinations you like.

Look for reduced-fat or fat-free varieties of bottled dressing. Packaged mixes often give directions for low-fat options. Make packaged dressings ahead of time so that the seasonings can blend.

Making your own salad dressing gives the freshest flavor. It also gives you more control over ingredients. You can limit the amount of fat in the dressing and experiment with herbs, spices, and interesting additions.

Most salad dressings are emulsions. An **emulsion** is a mixture of two liquids that normally do not combine, such as oil and vinegar. A mixture of oil and vinegar thickens as the liquids are evenly dispersed in very fine drops. However, an oil-and-vinegar blend is only a temporary emulsion, an emulsion that quickly separates when not stirred. When mixing stops, the oil and vinegar droplets separate from each other. Eventually, the two liquids separate. That is why it is necessary to shake oil-and-vinegar dressings before using them.

Some dressings are permanent emulsions. A **permanent emulsion** is a mix of liquids that will not separate. To turn a temporary emulsion into a permanent emulsion, you need an emulsifier, a substance that keeps the oil and vinegar blended. Egg yolk is an effective emulsifier.

### Making Vinaigrettes

The simplest salad dressing is vinaigrette (vi-ni-gret), sometimes called French dressing. A **vinaigrette** is a mixture of oil, vinegar or lemon juice, and seasonings.

The basic recipe for vinaigrette is 3 parts oil to 1 part vinegar or juice. Whisk the oil steadily into the other ingredients until the two liquids thicken and blend. Add seasonings, such as salt and pepper, to taste. A vinaigrette is a temporary emulsion, so it requires shaking before use.

**Science in Action**

**Answer** Students’ recorded observations will vary slightly, but should note the appearance of the oil and vinegar mix before it is shaken, how long it remains emulsified after shaking stops, and how its appearance changes after the addition of the egg yolk.
Making Mayonnaise

Mayonnaise is a thick, creamy dressing that is a permanent emulsion of oil, vinegar or lemon juice, egg yolks, and seasonings. It is vinaigrette with egg yolks added as an emulsifier. To make mayonnaise, very slowly drizzle and blend the oil into the other ingredients with a whisk. The oil must break down into tiny droplets and be coated with yolk so this is a gradual process. Mustard, both the spice and the condiment, is a secondary emulsifier in many mayonnaise recipes and in some vinaigrettes.

Due to concerns about Salmonella contamination, some new recipes for making mayonnaise call for cooking the egg mixture before adding the oil. If you want to make a recipe that calls for raw eggs, use egg substitutes or pasteurized eggs, which are safe to eat uncooked.

Making Cooked Dressings

A cooked dressing is made by cooking fat and water with starch paste, which serves as an emulsifier. Fat and water do not separate when they are cooked with a dissolved starch like flour or cornstarch. Traditional German potato salad, for instance, is made with a cooked dressing of bacon drippings, flour, sugar, and cider vinegar.

Commercially prepared mayonnaise and cooked dressings, which by law are called salad dressings, are emulsified with both proteins and starches. Starches are useful as egg yolk replacers in reduced-fat dressings. They appear on ingredient lists as cellulose gel, maltodextrin, xanthan (“zan-than”) gum, and gum arabic.

Making Dairy Dressings

A dairy dressing is a dressing made with buttermilk, yogurt, sour cream, or cottage cheese, and seasonings. Dairy dressings are usually enhanced with other ingredients. Ranch dressing, for example, includes chopped green onion, ground pepper, thyme, and garlic. A blend of yogurt, brown sugar, cinnamon, and frozen juice concentrate makes a creamy dressing for fruit salad.

Describe The basic recipe for vinaigrette is 3 parts oil to 1 part vinegar or juice.

Making and Serving Salads

Creativity and presentation help make salads taste good and look appetizing. Choose fresh ingredients that complement each other and the rest of the meal in flavor, color, texture, and nutrients. Chilling the bowl or plate in the refrigerator or freezer beforehand helps the salad stay cold for serving and eating. Salads can be served tossed, arranged, layered, or bound.

Tossed Salads A tossed salad is usually a mixture of greens and a dressing, often mixed with other vegetables. Tossed salads are mixed well, with ingredients distributed throughout.

Arranged Salads An arranged salad is a salad with ingredients placed in an attractive pattern. For example, you could place wedges of tomato in a fan around a scoop of chicken salad on a bed of lettuce.

Layered Salads A layered salad is like an arranged salad, except that ingredients are placed in layers one on top of the other, rather than in a flat pattern on the plate. Serve a layered salad in a glass bowl for the best visual effect.

Bound Salads A bound salad is held together tightly by a thick, usually creamy dressing. Cole-slaw is a popular bound salad.

Nutrition Check

Drenched or Drizzled

A few tablespoons of salad dressing can contain substantial fat and calories. On a salad dressing label, 2 grams of saturated fat per tablespoon may seem minimal, but if you pour on 5 tablespoons, that is nearly half a day’s recommended limit of saturated fat. Pay attention to the quantity you use. Salads drizzled in a little dressing often taste better than those that are drenched in a lot of dressing. You can also have dressings served on the side.

Think About It What is the fat and calorie content of a dressing you typically use? How much fat and calories are in the amount you usually add to your salad?

Making and Serving Salads

Nutrition Check
Content and Academic Vocabulary Review

1. Use each of these content and academic vocabulary terms to create a crossword puzzle on graph paper. Use the definitions as clues.

- **Content Vocabulary**
  - salad (p. 610)
  - crouton (p. 610)
  - tabbouleh (p. 610)
  - molded salad (p. 611)
  - tossed salad (p. 612)
  - salad dressing (p. 615)
  - emulsion (p. 615)

- **Academic Vocabulary**
  - minimal (p. 610)
  - restore (p. 614)
  - temporary emulsion (p. 615)
  - permanent emulsion (p. 615)
  - vinaigrette (p. 615)
  - mayonnaise (p. 616)
  - cooked dressing (p. 616)
  - dairy dressing (p. 616)

Review Key Concepts

2. **List** and describe seven different types of salads.
3. **Explain** how to wash and store salad greens.
4. **Identify** different types of salad dressings and explain how to prepare them.
5. **Describe** four methods for serving salads.

Critical Thinking

6. **Evaluate** Marisa’s claim that all salads are healthful.
7. **Identify** whether a cook who mixes canned tuna with onions, chives, olives, walnuts, mayonnaise, and herbs has made a salad or a sandwich filling.
8. **Create** a recipe for a dry bean salad that contains a food from the following food groups: meat and beans, milk, vegetable, grains.
9. **Explain** how the tropical molded salad that Sam made could have turned out watery, even though he chilled it for two days.
10. **Describe** the best salad serving style to use with picky eaters who may not like every ingredient.

**Answers** should note that salads are only as healthful as their ingredients. Salads made with fresh ingredients and minimal fat are healthful food choices. However, many salads are high in saturated fat, sugar, or empty calories.

Store greens in the refrigerator wrapped in a dry paper towel and kept in a plastic container or large plastic bag.

4. Types of salad dressing are: vinaigrette, which is made with oil, vinegar or lemon juice, and seasonings; mayonnaise, which is a permanent emulsion of oil, vinegar or lemon juice, egg yolks, and seasonings; cooked dressing, which is made by cooking fat and water with starch paste; and dairy dressing, which is based on buttermilk, yogurt, sour cream, or cottage cheese, with seasonings added.

5. Salad may be served: tossed, or mixed well with ingredients distributed throughout; arranged, with ingredients placed in an attractive pattern; layered, with ingredients placed in layers; or bound, held together by a thick, usually creamy dressing.

Critical Thinking

6. Answers should note that salads are only as healthful as their ingredients. Salads made with fresh ingredients and minimal fat are healthful food choices. However, many salads are high in saturated fat, sugar, or empty calories.

7. The cook has made both a salad and a sandwich filling.

8. Descriptions will vary, but should include one item from each of the foods mentioned. For example, one salad may include lentils (meat and beans), crumbled feta cheese (dairy), diced bell peppers (vegetable), and macaroni (grains).
9. Sam must have used either fresh or frozen tropical fruits such as pineapple, mangoes, kiwi fruit, or papayas. In their fresh and frozen forms, these fruits contain the enzyme bromelain, which digests proteins and keeps the gelatin mixture from setting.

10. Arranged salads allow picky eaters to enjoy the ingredients they like and avoid the ones they do not.

11. All team members should participate in oral presentations. Answers will vary depending on the salad prepared. For example, one group may prepare a recipe for tabbouleh. Team members may share that this recipe is used in cultures throughout the Middle East, including Syria and Lebanon. If a recipe called for white rice instead of bulgur, they may note that it has been modified to suit American taste. Improvements may include chopping the parsley into smaller pieces.

12. The romaine lettuce is the most nutritious option, because it is the darkest green. The greener the greens, the more vitamin A they contain.

13. Reports and presentations will vary depending on the vegetables students choose to research. Students should present useful information clearly enough for their classmates to take notes and apply it if they choose to plant a garden.

14. Leo can turn the vinaigrette into mayonnaise by adding egg yolks to it. The egg yolks act as an emulsifier.

15. Demonstrations will vary depending on the task pairs choose. For example, to demonstrate how to wash salad greens, one person may slowly show every step for washing that is outlined in the book, while the other person will verbally explain the steps, pointing out why they are necessary.

16. In this case, the store-bought dressing is the more economical option, as it costs $5.26 less than the supplies to make the dressing at home. This may not always be the case, however, if a person already has some of the supplies on hand. For example, if Beau already had the seasonings at home, it would be cheaper to make homemade buttermilk dressing.
Academic Skills

Food Science

17. Vinaigrette Emulsions  Emulsions contain two liquids that do not dissolve in each other. An emulsifier is an agent that helps the two liquids stay blended.

Procedure  Add 3 ounces vegetable oil and 1 ounce vinegar to each of 3 glass jars. Pour the first sample into a blender; process 3 minutes before returning to the jar. Place the lid on the second jar, shaking vigorously 3 minutes. Beat an egg yolk, then slowly pour in the third sample, processing for 3 minutes. Observe all jars after 10 minutes.

Analysis  Which of the first two jars separated faster? What happened with the third jar? What ingredient acted as an emulsifier? Which is a stable emulsion?

English Language Arts

19. Salad Stories  Some of the most popular salads have interesting stories behind how they were invented. Choose a famous salad, such as the Cobb, Caesar, Crab Louie, Waldorf, or Salad Niçoise. Research when, where, and how this salad got started, and who was responsible. Then tell your salad story to the class.

Mathematics

18. Selecting Salad Dressing  Monica has purchased seven different bottles of salad dressing, which she keeps lined up in a single-file row on a shelf in her refrigerator door. How many different ways can Monica arrange these dressings on the shelf? If Monica has a buffet-style dinner and wants to pick three of the dressings to place on the counter next to a salad, how many different ways can she pick and arrange three dressings in a row?

Math Concept  Permutations  A permutation is an ordered arrangement of a group of items. If there are \( n \) total items, the number of ways to arrange all \( n \) of them is \( n! \). If you select \( r \) of the items, then the number of permutations is equal to \( n! / [n-r]! \).

Starting Hint  The “!” above stands for factorial. \( n! \) is the product of all sequential integers between 1 and \( n \). For example, \( 4! = 1 \times 2 \times 3 \times 4 \).

TRUE OR FALSE

Read the statement and determine if it is true or false.

20. A slightly bitter flavor is normal in some salad greens.
   a. True
   b. False

Test-Taking Tip  Before deciding whether a statement is true or false, read it carefully and recall what you have learned from reading the text. Pay close attention to individual words. One word can make the difference between a true statement and a false one.

English Language Arts

19. Students should be able to concisely tell the story of how a salad was invented. Salad stories should include when, where, and how the salad got started.

Answer

20. True—greens such as curly endive and escarole have a bitter flavor.