Classify Fruits by Type and Intended Use

Unit: Preparing Foods

Problem Area: Fruits and Vegetables

Lesson: Classify Fruits by Type and Intended Use

Student Learning Objectives.

Instruction in this lesson should result in students achieving the following objectives:

1. **Identify fruits by type.**
2. **Explain the intended uses for fruits.**

Resources.

The following resources may be useful in teaching this lesson:

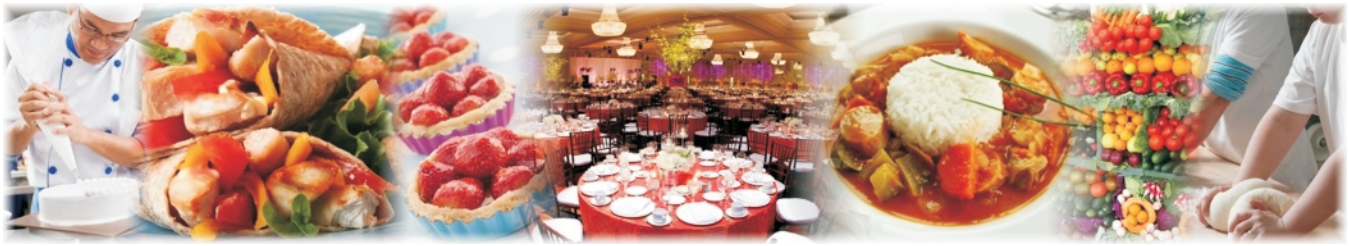
Biggs, Matthew, Jekka McVicar, and Bob Flowerdew. *Vegetables, Herbs, and Fruit: An Illustrated Encyclopedia.* Firefly Books, 2009.

Fruitsinfo.com. Accessed Sept. 22, 2010. <http://www.fruitsinfo.com>.

Madison, Deborah. *Seasonal Fruit Desserts: From Orchard, Farm, and Market*. Random House, 2010.

"Tropical Fruits Database—By Common Name," *tradewindsfruit.com*. Accessed Sept. 22, 2010. <http://www.tradewindsfruit.com/fruitscommon.htm>.

Waters, Alice L. *Chez Panisse Fruit*. William Morrow Cookbooks, 2002.



Equipment, Tools, Supplies and Facilities

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials
- ✓ *For Interest Approach, use the following:
  - Projected images or fresh fruits from the lesson categories
  - Cutting board
  - Chef knife
  - Paring knife
  - Disposable forks or toothpicks
  - Platters or small disposable plates
  - Napkins
  - Towel

Key Terms. The following terms are presented in this lesson (shown in bold italics):

- ➤ chutney
- ➤ citrus fruits
- ➤ compote
- ➤ coulis
- ➤ drupe
- ➤ fiber
- ➤ fructose
- ➤ fruit
- ➤ garnish
- ➤ jam
- ➤ juice cocktail
- ➤ macerated
- ➤ pectin
- ➤ pit
- ➤ pith
- ➤ preserves
- ➤ pulp
- ➤ seeds
- ➤ summer fruits
- ➤ tropical fruits
- ➤ vegetable fruits
- ➤ winter fruits
- ➤ zest

Interest Approach. Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

> *Projected images can be used to introduce this topic, but fresh produce is far more effective.*

> *Line up the produce in its whole form, and ask students to identify all the types they recognize. Then ask if students know what the fruits look like inside and how they taste. Ask students to suggest at least two uses for each fruit.*

> *Cut the fruits open, and note the color and texture of each. Portion the fruit, and allow students to taste each fruit. If using images rather than fresh fruit, have images of the fruits cut open, and be prepared to describe textures and flavors. Ask students to describe differences and similarities. Next, ask how students would group these fruits. Finally, display the specific groupings you have on the demonstration table. Once again, ask them to group the fruits according to your categories.*

> *With the topic now open, begin the lesson of classifying fruits by type and intended use, starting with produce offered in this introduction. Ultimately, students are sure to find the exotic tropical fruits interesting.*

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Identify fruits by type.

Anticipated Problem: How are fruits classified?

I. Fruit classifications

A. There are numerous botanical and culinary ways to categorize fruits. Botanists would remind culinary artists that ***fruit*** is the mature ovary of any growing, seed-bearing plant, including nuts. Although all nuts (noix) are fruits by definition, that category is not addressed in this lesson. Culinary artists would remind botanists that fruits add beauty, color, and intricacy to food, thereby sparking an artist's innate creativity. Nutritionists point out the benefits (e.g., vitamins and minerals) of fruits. For example, fruits quench a person's thirst due to the high ratio of water to flesh. If a layperson were asked to describe fruits and vegetables, he or she might say fruits are sweet and vegetables are not.

1. The simplest classifications of fruits include three groups: winter, summer, and tropical. Two subgroups also bear mention as they are commonly used in the culinary arts: drupes and vegetable fruits.
    a. Winter fruits are the smallest of the three categories.
    b. The summer fruits category contains some "false fruits."
    c. The tropical fruits category has an especially interesting subgroup called exotic tropical.
2. Fruits available to the culinary artist are vast due to refrigeration in shipping. Therefore, it is now possible to enjoy fruits from all parts of the world at almost any time of year. For example, the following fruits are common in U.S. markets:
    a. Latin American and West Indian cherimoyas, mangoes, and guavas
    b. New Zealand kiwi fruit
    c. South African Granny Smith apples
    d. Japanese Satsuma tangerines

B. ***Winter fruits*** are seasonal types of fruit (e.g., citrus, apples, and pears) that ripen from late autumn into mid-winter in the United States.
1. ***Citrus fruits*** are highly acidic fruits, such as oranges, lemons, limes, grapefruits, tangerines, kumquats, clementines (a type of tangerine), and minneolas (tangelos). These fruits are available in U.S. markets nearly year round. As a group, citrus fruits have:
    a. Multiple seeds
    b. High acid levels
    c. Shiny skins rich in aromatic oils
    d. Varying amounts of ***pith*** (a white membrane under the skin that protects the delicate flesh)
    e. The same basic design of separate sections containing high levels of sweet juice and fiber
2. Apples (pommes) encompass a wide variety with different levels of sweetness, moisture, and texture. Varieties include Granny Smith, Rome Beauty, Red and Golden Delicious, Winesap, Johnathan, Fuji, McIntosh, Honeycrisp, and Gala. As a group, apples have:
    a. Multiple seeds
    b. Thin skins that range in color from yellow to green to red
    c. Firm textures (Some are notably firmer than others.)
    d. Flesh colors that range from white to light green
    e. Markedly different uses based on texture, moisture, and sugar levels
3. Other winter fruits include varieties of pear (poire), cranberry, and some rhubarb.

C. ***Summer fruits*** are seasonal types of fruit that ripen from late spring through late summer. The summer fruits category is extremely large and includes all berries (except cranberries), cherries, melons, grapes, peaches, apricots, pears, nectarines, rhubarb, and plums.

1. Berry varieties are strawberry, raspberry, blueberry, blackberry, and boysenberry, to name a few. As a group, berries have thin skins and are:
   a. Available in wild and cultivated varieties
   b. High in acid, making them very susceptible to mold
   c. Fragile, with a short shelf life as a fresh product
   d. Carriers of multiple small edible seeds
2. Melon varieties include watermelon (Charleston Gray and Sugar Baby are common), muskmelon (Cantaloupes and Persians have "netted" skin; honeydews and casabas have smooth skin), Cranshaw, and Santa Claus, among others. The muskmelon group has a hollow interior full of seeds. In contrast, the watermelon group has solid flesh with distributed seeds among the flesh. As a group, melons have:
   a. Hard rinds protecting the delicate fruit inside
   b. Numerous seeds
   c. A flesh that is 90 percent water
3. The red, fleshy part of a strawberry is technically not the mature ovary of the plant. The Carnegie Science Center describes a strawberry as a multiple fruit (or false fruit) in that the tiny brown or white specks (commonly considered seeds) are the actual fruits. Each achene (brown or white speck) is a fruit, and each surrounds a tiny seed. Nutritionists note that a ½-cup serving of strawberries is equal to 70 percent of the recommended daily allowance of vitamin C and has more fiber than a slice of whole wheat bread due primarily to the achenes.

D. ***Tropical fruits*** are a large group of fruit (e.g., pineapple, banana, mango, papaya, kiwi, coconut, guava, figs, pomegranate, prickly pear, quince, and many more) indigenous to hot and humid locations.

1. As a group, tropical fruits are:
   a. Soft-fleshed
   b. Seeded, though the range is from tough and hard (guava) to soft (banana)
   c. Bearers of unique flavors and textures
2. A subgroup of tropical fruits is the exotic varieties that include:
   a. Breadfruit (fig family; 9 to 90 pounds each)
   b. Star fruit (or carambola)
   c. Cherimoyas (or custard apples), which look like artichokes
   d. Loquats (olive-sized fruits), which taste a bit like cherries
   e. Mangosteens, which have a floral flavor

3. Tropical fruits with more baffling lineages and fewer shared traits with other tropical fruits include the following:
    a. Pineapple is actually composed of about 100 separate fruits distinguishable by the "eyes" or flowers of the fruit.
    b. Papaya is actually a berry, according to the botanical definition of a berry.
    c. Pomegranate and passion fruit seeds are the fruit, and both enclose seeds in a pulp sac.

E. ***Drupe*** is a subcategory of fruits that denotes those with a single major pit within the fruit. Drupes cross between the three categories shown above. Drupes are difficult to ship or store and are often considered at their best in summer. The ***pit*** is the hard core in the center of fruit. The flesh of the fruit grows around a pit, and the pit generally has no edible value. ***Seeds*** are plant parts formed within the fruit that are the reproductive elements. Seeds are edible. If planted in the proper conditions, seeds would germinate and grow into the fruit from which they came.
    1. Regardless of other classification, fruits that have a single pit are also drupes and include the following:
        a. Cherry
        b. Peach (clingstone and freestone)
        c. Nectarine (clingstone and freestone)
        d. Mango
        e. Plum (tougher skins than other drupes)
        f. Apricot (drier flesh than other drupes)
        g. Date
        h. Avocado
    2. As a group, drupes are fragile and have:
        a. Thin skins
        b. Soft flesh

F. ***Vegetable fruits*** are a subgroup of fresh produce that has properties of vegetables and fruits. If fruit is simply described as produce that is high in sugar with multiple seeds (except drupes and coconut), then vegetables would be considered produce that is low in sugar and without seeds or pits. Vegetable fruits are the group that cross these boundaries and include:
    1. Tomatoes
    2. Cucumbers
    3. Avocados (drupe; Hass and Fuerte varieties are common in markets)
    4. Eggplant (aubergine)
    5. Pumpkin (a member of the gourd family)
    6. Santa Claus melon
    7. Peppers
    8. Squash (an American term for marrows, pumpkins, and gourds) includes:
        a. Summer squashes
            (1) Pattypan (or cymbling; flat disc-shaped)

(2) Yellow (or crook-necked summer squash)
(3) Zucchini (or Italian or courgette squash)

b. Winter squashes
(1) Acorn
(2) Sweet potato
(3) Hubbard
(4) Butternut
(5) Spaghetti

Teaching Strategy: *Use VM–A through VM–F to review the material in this objective. Assign LS–A to have students research various fruits and categorize exotic fruits.*

Objective 2: Explain the intended uses for fruits.

Anticipated Problem: How are fruits commonly used?

II. Common uses for fruit

A. The most common use of fresh fruit is eating it without any processing. Whether cut into a salad or used as individual servings, consumption of fresh raw fruit is the most common use of all fruits worldwide. Fresh fruit is used:
1. In ice creams and sorbets
2. As a plate garnish for salads, appetizers, and entrees (A ***garnish*** is an edible adornment to serve on or with plated food. Common examples are a small cluster of grapes or a slice of melon or citrus fruit.)
3. In baked goods (e.g., muffins), mixed ingredients (e.g., stuffing), toppings for cooked foods (e.g., pizza), and as an addition to finished sauces or plated entrees

B. Flavorings from fruits are the basis for oils and extracts used in numerous foods and beverages. For instance, citrus fruits have quality oils in the ***zest*** (the peel, especially a thin outer colored skin). These oils offer intense fragrance and flavor for candies, beverages, and other food products. Fruit is also the source of ***fructose***, the natural sugar found in all fruits. In recent years, fructose has increasingly been used as a natural sweeter to replace granulated sugar, though it has no nutritional benefit over standard sugar. It is now available in granulated or powdered forms.

C. Canned or jarred fruit is processed and preserved for later consumption. It is peeled, cut, boiled (to kill bacteria), and vacuum-packed in cans or jars. This method is most effective for fruit relatively low in moisture and high in fiber (e.g., apples, pears, and peaches). Delicate fruits that are high in moisture (e.g., berries, melons, and oranges) do not fare well with canning.

D. Freezing is an acceptable storage method for later consumption, but it has some serious drawbacks. The freezing process ruptures the cells within the fruit. As a

result, when the fruit thaws, it is mushy and juices are running. The best use for frozen fruits is in cooking, baking, or other processed products.

E. Jellies, jams, and spreadable fruit preserves are common ways to preserve fruits for later use. All three products are prepared by cooking fruit with sugar and ***pectin*** (a natural thickener that comes from fruit) that results in a spreadable preserved fruit product.

   1. Jelly is thickened and sweetened fruit juice with no solid fruit matter. ***Jam*** is a sweet substance that includes fruit pulp or fiber that makes it look cloudy compared to jelly, and jam may contain tiny seeds from the fruit. ***Fiber*** is the solid non-digestible matter that is part of all plant life; pectin is an example.
   2. ***Preserves*** are a chunkier spreadable sweet substance. They contain a higher percentage of solid fruit matter compared to jam, usually with visible small chunks of fruit in the gel. Marmalades are a type of sweet jellied preserve that contain bits of fruit and rind. Marmalades are usually made from a citrus base (e.g., orange, lime, or lemon), but the first recorded marmalade was made from quince (in the apple and pear family). In citrus marmalades, the rind is a good balance between the sweetness of the jelly and the rind's natural tartness.

F. Juice is one of the most typical uses for processed fruit. Juice is fresh, bottled, or frozen. Fresh juice may be squeezed and packaged without further processing. Some, such as orange juice, are particularly perishable and require refrigeration at all times in the fresh squeezed form. Fresh juice can be further processed to remove the bulk of the water, leaving thick and intense syrup (concentrate) that is frozen in small containers. Water is added to these frozen juices to bring them back to a normal liquid state. Frozen juice concentrate is becoming more popular as a natural sweeter in baking and beverages, replacing granulated sugar in part or in full. Other more stable juices do not require refrigeration (until the package is opened), and they can be bottled and sold from non-refrigerated shelves.

   1. Juice can be finely strained so it is pure liquid, but it is often strained in a manner to allow some pulp into the juice. ***Pulp*** is tiny bits or flecks of fruit fiber or membrane that are already part of the fresh squeezed fruit juice. Pulp left in any juice adds some fiber content to the beverage and provides more body and texture on the tongue.
   2. Fruit ***juice cocktail*** is a liquid made from fruits that are particularly low in sugar and that are quite tart in taste. The resulting juice typically has sugar and water added, resulting in a beverage that may be only 20 or 30 percent actual juice.
   3. Wine is a major beverage industry that uses fruit juice. Wine can be processed from most fruit juice, though grapes represent the largest wine source.

G. Drying or dehydrating fruit is a common preservation method that provides a great snack or ingredient for other uses. Fruit contains a high ratio of water to fiber and flesh, and drying times vary by fruit type.

   1. Commonly dried fruits are high in sugar content and include:
      a. Raisins (formerly grapes)

b. Prunes (formerly plums)
c. Figs
d. Dates
e. Mango
f. Papaya
g. Banana
h. Most berries and cherries (e.g., cranberries and blueberries; many for fruit leather)

2. Dried fruit can be readily used in baking, salad dressings, ice cream mixtures, and chutney. They can be ***macerated*** (soaked in a liquid to rehydrate and soften them). The maceration liquid can be water, but commonly a juice, wine, or liquor is used to add additional flavor.

H. Baked, poached, and grilled fruits

1. Baking fruit is common. They are often the focal point of a baked dish or pastry (e.g., pies, tarts, cakes, cookies, or cobblers). Baked fruits are also used as part of non-baked dessert presentations (e.g., cherries jubilee) or as a topping for ice cream.
2. Poached fruits must be firm and meaty enough to gently simmer in a flavorful liquid until tender. Poached fruits should hold their shape after cooking and should be fork tender. Apples and pears are commonly poached.
3. Grilled fruits must be firm and meaty enough to grill. Since fruit has a high sugar level, care has to be taken not to burn the fruit as it cooks to just tender. In general, leaving the skin on a fruit helps maintain its integrity on the grill. Large pieces of fruit can be placed directly on the grill, and smaller pieces may be skewered prior to grilling. Commonly grilled fruits include firm fruits (e.g., pineapple, apples, and pears). Softer fruits (e.g., mango, papaya, peaches, and bananas) should be heated and not cooked.

I. Sauces are common uses for fruits.

1. ***Compote*** is a gently cooked fresh fruit that has been lightly sweetened and served in its softened cooked form. Compote is often a combination of several fruits cooked together and served as is or as an accompaniment to cake or ice cream.
2. ***Coulis*** is fruit that is cooked until it is very soft and then puréed into a naturally thickened sauce. Water or other liquid is commonly added to a fruit sauce if it is too thick, and it is usually strained to provide a smooth sauce with no solid matter. Coulis may be used as a glaze for cooked meats and vegetables or as a fresh fruit sauce for desserts and ice cream.
3. ***Chutney*** is an intensely flavored chopped relish condiment of various fruits and/or vegetables and spices. It often has a sweet and sour flavor. Most chutney formulas include fruit and sugar and then a sour component (e.g., vinegar or onion) for contrast. Some chutney is hot and spicy. The word "chutney" comes from a Hindi word meaning "to crush." In India, chutney is served with curry, but it is also commonly spread on crackers or breads. Fruits used include mango, lime, peach, plum, apricot, tomato, onion, coconut, and apple.

Spices vary widely and include garlic, cilantro, tamarind, mustard, ginger, mint, and jalapeno.

> **Teaching Strategy:** *If your classroom has a laboratory, practical application would be extremely useful. Bring in fresh fruit, and have students experiment in the preparation of a sauce, jam, bread, pie, muffin, or compote. Assign LS–B.*

- **Review/Summary.** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Questions at the ends of chapters in the textbook may also be used in the review/summary. Include a discussion of the outcome of LS–A and LS–B activities to illuminate key points.

- **Application.** Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.

- **Evaluation.** Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

- **Answers to Sample Test:**

Part One: Matching

1. f
2. a
3. b
4. h
5. e
6. i
7. g
8. c
9. d

Part Two: True/False

1. F
2. T
3. T
4. F
5. T
6. F
7. T

8. F
9. T

Part Three: Completion

1. garnish
2. coulis
3. preserves (jams)
4. compote
5. apples
6. maceration
7. juice cocktail
8. fructose

Sample Test

Name _____

Classify Fruits by Type and Intended Use

Part One: Matching

Instructions: **Match the term with the correct definition.**

a. drupe
b. summer fruits
c. winter fruits
d. vegetable fruits
e. tropical fruits
f. fruit
g. pith
h. pit
i. seeds

_____1. The mature ovary of any growing, seed-bearing plant, including nuts
_____2. A subcategory of fruit that denotes those with a single major pit within the fruit
_____3. Seasonal types of fruit that ripen from late spring through late summer
_____4. The hard core in the center of fruit
_____5. A large group of fruits indigenous to hot and humid climates
_____6. Plant parts formed within the fruit that are the reproductive elements
_____7. The white membrane under the skin that protects the delicate flesh of citrus fruits
_____8. Seasonal types of fruit that include citrus, apples and pears
_____9. A subgroup of fresh produce that has properties of vegetables and fruits

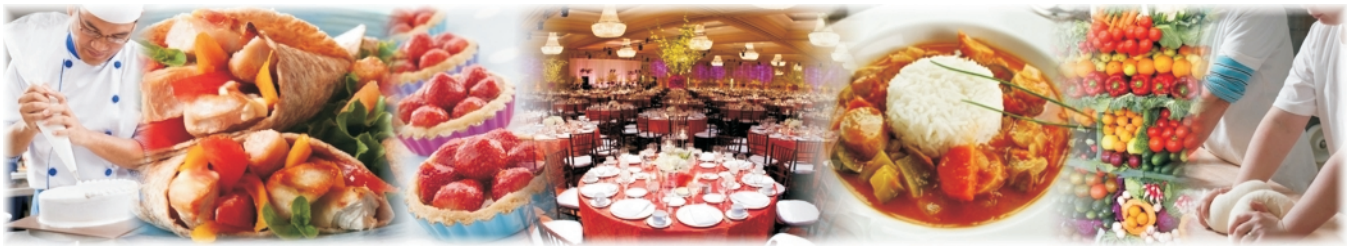
Part Two: True/False

Instructions: **Write *T* for true or *F* for false.**

_____1. Granny Smith is a type of squash.

_____2. Tomatoes are a type of vegetable fruit.

_____3. Grapes are a summer fruit.



_____4. Intense flavorful oils exist in the juice of citrus fruits.

_____5. A mango is a tropical fruit and a drupe.

_____6. Freezing fruit results in a coulis.

_____7. Firm meaty fruits, such as pineapple, would be a good choice for grilling.

_____8. Bananas are a summer fruit.

_____9. Fructose and juice concentrate are both used as natural sweeteners.

Part Three: Completion

Instructions: **Provide the word or words to complete the following statements.**

1. When used to decorate or adorn a plate of food, a small slice or piece of fruit would be considered a _____.
2. Fruit cooked until very soft and then puréed into a naturally thickened sauce to be used as a glaze for cooked meats and vegetables or a fruit sauce for desserts is called _____.
3. A spreadable fruit product that has small pieces of fruit in it is called _____.
4. Gently cooked fresh fruit or fruits that have been lightly sweetened and then served in their softened cooked forms are known as _____.
5. Fuji, Gala, and Jonathan are all examples of _____.
6. Dried fruits are great to eat as is, but when they are used in baking or as ingredients in other dishes, it is sometimes desirable to soften them in a liquid. This softening process is called _____.
7. A fruit beverage that is only partially juice and includes water and sugar is called _____.
8. The natural sugar in fruit, now available in powdered form to use as an alternative sweetener, is _____.

EXAMPLES OF WINTER FRUITS

Apples

Note the different colors and shapes of these apples. From the bottom left to the bottom right are Golden Delicious, Macintosh, Fuji, Granny Smith, and Gala.

Citrus

Citrus fruits include, from the bottom to the top, grapefruit, orange, lemon, and lime. Note the white pith located just under the colored skin on all varieties.

EXAMPLES OF SUMMER FRUITS

Berries

Berries are a major group of summer fruits. Here are six varieties, from top to bottom and left to right in rows: wild strawberries, blueberries, black and red currants, raspberries, and blackberries. Wild strawberries are considered much sweeter than the cultivated varieties.

Melons

Smooth-skinned melons include, from left to right, Casaba, Cranshaw, and Honeydew varieties. Watermelons are also smooth-skinned and come in numerous varieties and shapes, weighing from 6 to 30 pounds.

EXAMPLES OF TROPICAL FRUITS

Kiwi

Kiwi is an eye-popping green color and has tiny black seeds inside a furry skin.

Papaya

Papayas have a sweet, smooth, orange-yellow flesh. The large black seeds are discarded.

EXAMPLES OF TROPICAL FRUITS

Pomegranate

Pomegranates have a tough red skin filled with pith and juicy red seeds.

Coconut

Look at the "hairy," rock-hard shell of the coconut that covers the snow white meat and milk inside its hollow center.

Other tropical fruits include numerous types of pineapples, figs, and bananas.

EXAMPLES OF DRUPES

Avocados

The Hass Avocado has a signature dark greenish black and pebbly skin.

Cherries

Sour cherries are used for cherry pie filling.

Mangoes and nectarines are also drupes.

EXAMPLES OF VEGETABLE FRUITS

Eggplant

Eggplant (or aubergine) is one of the most popular and plentiful fruits in the world.

Red pepper

Red peppers open to reveal their web of seeds.

Pumpkin

Pumpkins are also vegetable fruits.

Name _____

Varieties and Groups of Fruit

Purpose

The purpose of this activity is to provide practice identifying and classifying different fruits.

Objectives

1. Identify specific fruits.
2. Identify fruit classifications.

Materials

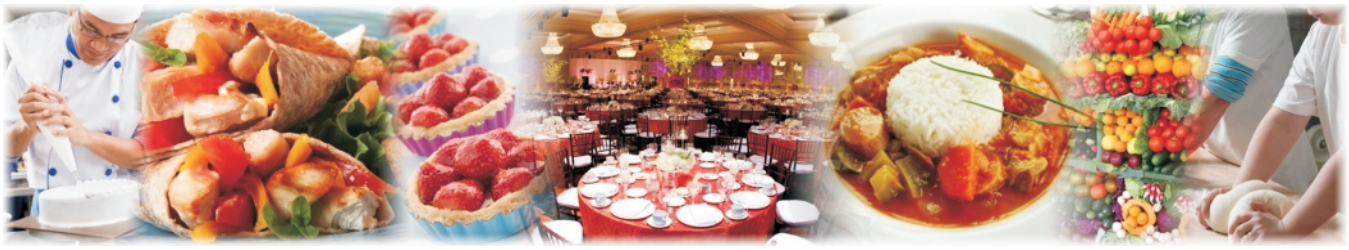
- lab sheet
- cookbooks and related magazines and journals
- writing utensil
- paper

Procedure

1. Work independently to find the answers to the following questions related to fruit varieties. Use books, cookbooks, magazines, journals, and the Internet to research your responses. Write your answers on separate sheets of paper.

Part 1:

a. Identify six types of apples; make sure you are unfamiliar with a few. In 1911, there were already more than 2000 varieties documented. Write a sentence or two about each to describe them and their best uses.
b. Identify five types of squash; make sure you are unfamiliar with a few. Write a sentence or two about each to describe them and their best uses.
c. Identify three types of cherries; make sure you are unfamiliar with a few. Write a sentence or two about each to describe them and their best uses.



d. There are many citrus fruits, and oranges alone have a number of varieties. Identify four specific types of fruit in the orange family. Write a sentence or two about each to describe them and their best uses.
e. Peaches are a common fruit, but there are two specific types that relate to the pit itself. What are they?

2. This question is related to groups or types of fruit as described in this lesson, specifically exotic fruits. Use books, cookbooks, magazines, journals, or the Internet to research your responses. Indicate to which group or groups each exotic fruit belongs. Potential answers are:

- Winter fruit
- Summer fruit
- Tropical fruit
- Vegetable fruit
- Drupe

Part 2:

a. Lychee
b. Huckleberries
c. Clementine
d. Kumquat
e. Plantain
f. Rose hips
g. Tamarind
h. Cushaw
i. Currants
j. Mangosteen

3. Turn in your answers to your instructor.

Varieties and Groups of Fruit

1. All responses are suggested answers. There will be variances. The suggested responses below use key words or phrases that would be evident in the sentences describing each type of fruit and its intended uses.
2. Part 1
   a. Potential answers for types of apples are:
      (1) Jonathan—small, greenish-red apple; good eating and baking apple
      (2) Granny Smith—green tart apple; good for baking and eating
      (3) Red or Golden Delicious—mostly for eating; Golden Delicious are used for cooking or baking
      (4) Rome Beauty—large red apple; particularly good for baking
      (5) McIntosh—reddish with lots of white color; good all-purpose use apple
      (6) Gala—pale reddish yellowish in color; juicy all-purpose use apple
   b. Potential answers for five types of squash are:
      (1) Pumpkin—Some are as small as gourds, and some are hundreds of pounds. They have a fibrous texture and are good for pies as well as for decoration. The seeds are great roasted and salted.
      (2) Butternut—This squash is long, with a bulbous base. It has beige skin and deep orange flesh. It is good for roasting, baking, boiling, and mashing. It can also be used in soups.
      (3) Acorn—This squash is a baseball to a softball in size. It has a ridged acorn shape, with a dark green skin and yellowish-orange flesh. It is best for roasting and baking.
      (4) Spaghetti—This squash has a large cylinder shape, with a hard yellow outer skin. The flesh is very fibrous and stringy. The fibers break down in baking, roasting, boiling, or steaming into spaghetti-like strands that are light yellow in color.
   c. Potential answers for three types of cherries are:
      (1) Bing—sweet and deep red; eating cherries
      (2) Montmorency—tart red cherries; common for baking
      (3) Rainier—pinkish-yellowish and quite sweet; best as eating cherries
      (4) Royal Ann—red and somewhat bland; these become bright red maraschino cherries
   d. Potential answers for four orange family fruits are:
      (1) Navel oranges—large, juicy, easy to peel due to a navel “hole” at one end, and seedless; eating and juices
      (2) Blood oranges—small in size, orange and deep red mixed color in both skin and fruit, sweet and sour in taste; salad ingredient, marmalade, baking

(3) Clementine—small, exceptionally sweet and juicy orange, also known as a Mandarin orange; easy to peel; eating orange
(4) Valencia—somewhat bland but very juicy; used for juice
(5) Tangerines—small, with easy to peel thin skin, sweet and juicy, but loaded with seeds; eating

e. Two types of peaches related to the pit:
(1) Clingstone—pit must be cut out
(2) Freestone—pit may be twisted out by hand

3. Part 2

a. Lychee—drupe and tropical
b. Huckleberries—summer
c. Clementine—winter
d. Kumquat—winter
e. Plantain—tropical
f. Rose hips—winter
g. Tamarind—summer
h. Cushaw—vegetable fruit
i. Currants—summer
j. Mangosteen—tropical

Name _____

Exploring the Uses of Fruits

Purpose

The purpose of this activity is to explore a variety of appropriate uses for different fruits.

Objectives

1. Identify appropriate uses for different fruits.
2. Explain why some uses are inappropriate for certain fruits.
3. Select and print fruit recipes and formulas for your portfolio.

Materials

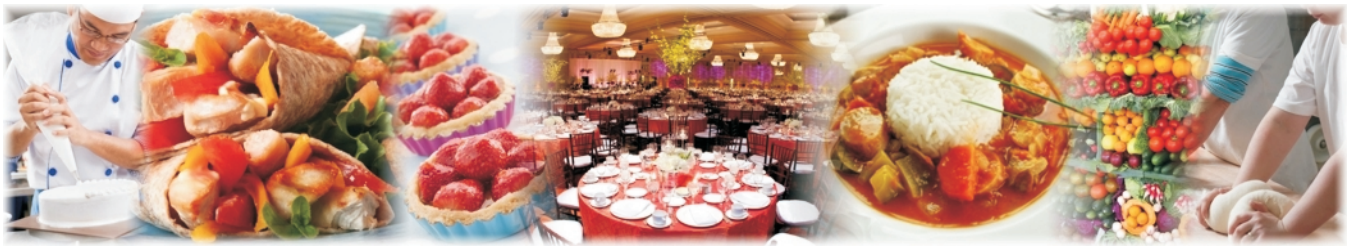
- lab sheet
- writing utensil
- a variety of cookbooks or cooking magazines
- paper

Procedure

1. Work on this project individually or with a partner.
2. Aside from the culinary books, magazines, and Internet resources, you will need to use your own logic to respond to each of the research questions. Use several sentences (as needed) to fully explain your answers. Print out selected recipe or formula documents as needed. Use a separate sheet of paper to record your responses.

Research Questions:

a. Find and print out (or copy) a recipe for each of the following fruits. Choose one recipe per fruit. Each recipe must be a different use category. For example, you may



choose a raspberry sauce as one category of use, but the other three fruits should be different categories—not sauces.

(1) Raspberries
(2) Honeydew melon
(3) Papaya
(4) Raisins

b. Peaches, pineapples, and apples are good examples of fruit that can be grilled. Name two fruits that you think would have disastrous results if grilled, and explain your answer.
c. Jams, jellies, and other preserves are common uses for many fruits (e.g., berries, grapes, and plums). Melons are also plentiful fruits, but they are not as commonly preserved for spreads. Why not? Explain your answer.
d. Pomegranates have a somewhat limited number of uses. Name two.
e. What is rhubarb? Describe it, and list two uses.
f. How does the taste of fruit change when it is dehydrated into a dried fruit variety? Give an example of how this could be used to the advantage of a cook or baker.
g. Describe in detail or print pictures three separate fruits being used as garnishes.
h. Find and print (or copy) a recipe where fruit juice is used as the sweetener.

3. Turn in your completed lab sheet to your instructor.

Exploring the Uses of Fruits

Research Questions:

a. Answers will vary widely, but look for responses such as jam, sauce, fruit cocktail, in baked goods, dried fruit, pickled rinds, etc.

b. Answers will vary, but acceptable responses include:

(1) All small fruits (berries) that could fall through the grates
(2) Fruits very high in sugar that would burn easily
(3) Soft fruits that could easily turn to mush or pulp
(4) Fruits very high in liquid content
(5) Fruits so hard they won't actually cook on a grill (such as coconut)

c. Answers will vary but will likely focus on these points:

(1) The moisture content is too high in melons to produce reasonable results.
(2) There is no available pectin in melons, so thickening would be a problem.
(3) Melons can be potentially hazardous after cutting, and they have health risks.
(4) There is no established market for melon-flavored spreads.

d. Pomegranate uses include juice, jelly, jam, sauces, and seed garnish.

e. Rhubarb looks like red celery with long, thin, fibrous stalks that are quite bitter. It can be used for pies, breads, jams, and sauces.

f. As fruit dries, the flavor becomes considerably more intense, and the sugar level increases significantly. These very sweet and flavorful dehydrated fruits could be used in a sauce, in a stuffing or dressing, or in a baked item to "pump up" the flavor and sweetness without adding additional sugar.

g. Descriptions and images of three fruits used as garnishes will vary widely.

h. Recipes in which fruit is used as a sweetener (rather than sugar or honey) will vary widely.