STRAWBERRIES
Let’s learn about strawberries today!! Alaska wild strawberry plants have saw-toothed leaves with three leaflets that grow on long, slender stalks. The red berries are fleshy, sweet and juicy. They are like commercially grown strawberries but are smaller.

Alaska wild strawberries are found scattered throughout Southeast Alaska, Interior Alaska, the Gulf Coast of Alaska, the Seward Peninsula and the Aleutians. Wild strawberries should be picked when fully ripe and are usually available in late June or July. They can be eaten fresh or may be used in syrups, toppings, jams, jellies, preserves, pies and other recipes calling for fresh strawberries.

The Roots of Strawberry History

- The strawberry is not, from a botanical point of view, a berry. Technically, it is an aggregate accessory fruit, meaning that the fleshy part is derived not from the plant’s ovaries but from the receptacle that holds the ovaries. Each apparent "seed" (achene) on the outside of the fruit is actually one of the ovaries of the flower, with a seed inside it.
- Strawberries have a history that goes back more than 2,000 years. They are indigenous to both the northern and southern hemispheres. Strawberries grew wild in Italy where the first mention of strawberries occurred in the writings of Cato, a Roman Senator.
- European explorers discovered strawberries in North America in 1588 when they landed on the shores of the state of Virginia. The explorers found tiny, sweet, deep red, wild strawberries. Early settlers in Massachusetts enjoyed eating strawberries grown by local American Indians who cultivated them as early as 1643.
- The first “refrigerated” shipping across the United States occurred in 1843 when innovative growers in Cincinnati, Ohio spread ice on top of the strawberry boxes and sent them by train. By the middle of the 1800s many regions were cultivating strawberries. Strawberries have been grown in California since the early 1900s.
- The first garden strawberry was grown in Brittany, France during the late 18th century. Prior to this, wild strawberries and cultivated selections from wild strawberry species were the common source of the fruit.
Let’s Move into the Science of Strawberries

Pronunciation: strô´bĕrē
Spanish name: fresa
Family: Rosaceae
Genus: Fragaria
Species: F. virginiana

Strawberries belong to the genus *Fragaria* in the rose family. They are low, herbaceous, perennial plants with edible fruits that are called an “accessory fruit.” This means the fleshy part is not derived from the plant ovaries, but from the peg of the hypanthium that holds the ovaries.

There are about 12 species of strawberry plants. The common wild strawberry, *Fragaria vesca*, is believed to have been the first species cultivated in the early 17th century. Botanists then found other garden varieties: *Fragaria elatior*, a European species and the parent of *Fragaria virginiana* from the United States. About this time, *Fragaria chiloensis* was discovered on an island off the coast of Chile. Today, nearly all varieties can be linked to these four species.

**How Do Strawberries Grow?**

Strawberries grow on small, low growing perennials that prefer well-drained, sandy soil. The plants need plenty of water, warm days, and cool nights.

Many strawberry plant varieties produce stolons that spread out from the base and take root to form new plants. The plants produce white or pink flowers. After flowering, strawberry plants require pollination by bees or other insects. Factors such as cool or wet weather, which discourages bee activity, can have a damaging affect on fruit production. Growing conditions also affect the time required to produce fruit. On average it takes about 30 days for flowers to develop into fruit. The first crop can be harvested the year following planting.

There are three basic types of strawberry plants:

- **June-bearing plants** produce a single crop each year, usually lasting three to five weeks in late spring.
- **Day-neutral plants** produce fruit the same year in which they are planted and can produce berries throughout their year-long growing season since they are not dependent on day length to produce flower buds.
- **Ever-bearing plants** produce fruit twice per year, usually in late June to early July and again in late August. Because they produce few berries, they are rarely used for commercial production.

While strawberry plants can survive and produce fruit for many years, commercial strawberry plants are replaced every two to four years.
Strawberries are delicate and must be picked by hand when ripe. They are then taken to cooling facilities to help them last longer.

**Reasons to Eat Strawberries**

A ½ cup of sliced strawberries (about four large strawberries) provides:

- An excellent source of vitamin C – more than 80% of the recommended Daily Value.
- A good source of folate.
- A good source of fiber.

**What is folate?**

- Folate is a form of vitamin B9 as is folic acid.
- Folate intake during pregnancy has been linked to a lessened risk of neural tube defects.
- Folate naturally occurs in a wide variety of foods, including vegetables (particularly dark green leafy vegetables), fruits and fruit juices, nuts, beans, peas, dairy products, poultry and meat, eggs, seafood, and grains. Avocado, beetroot, spinach, liver, yeast, asparagus, and Brussels sprouts are among the foods with the highest levels of folate.
- Folate deficiency can be caused by unhealthy diets that do not include enough fruits and vegetables, diseases in which folates are not well absorbed in the digestive system (such as Crohn’s disease or celiac disease), some genetic disorders that affect levels of folate, and certain medicines. Folate deficiency is accelerated by alcohol consumption.
- Folate deficiency may lead to glossitis, diarrhea, depression, confusion, anemia, and fetal neural tube defects and brain defects (during pregnancy).

**Some Great Strawberry Facts**

- The seeds of the strawberry are really the fruit while the red fleshy part is the receptacle that holds the parts of the flower together.
- On average, there are 200 tiny seeds on every strawberry.
- Strawberries are the most popular berry in the United States.
- Ninety-four percent of American households consume strawberries.
- On average, Americans eat more than three pounds of fresh strawberries each year plus another almost two pounds of frozen strawberries.
- The strawberry plant is a perennial. This means if you plant one now, it will come back next year and the following year and the year after that!
- Belgium has a museum dedicated to strawberries. In the gift shop at Le Musée de la Fraise (The Strawberry Museum), you can buy everything from strawberry jam to strawberry beer.
- California produces some 80% of the strawberries in the U.S. They grow about 2 billion pounds of the heart-shaped fruits per year. Every state in the U.S. and every province in Canada grows their own.
- Strawberries can also be pickled. Especially when picked green or unripe. If your berries are overripe, make jam!
Strawberry and Mixed Greens Salad with Chicken

Serves 4

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Mixed green lettuce</td>
<td>8 cups</td>
</tr>
<tr>
<td>Strawberries, sliced</td>
<td>1 cup</td>
</tr>
<tr>
<td>Bell peppers, large diced</td>
<td>½ cup</td>
</tr>
<tr>
<td>Cucumbers, sliced</td>
<td>1 cup</td>
</tr>
<tr>
<td>Almonds, sliced, toasted</td>
<td>¼ cup</td>
</tr>
<tr>
<td>Feta cheese, crumbled</td>
<td>1/3 cup</td>
</tr>
<tr>
<td>Chicken, fully cooked, sliced</td>
<td>1 pound</td>
</tr>
<tr>
<td>Poppy seed dressing (See recipe below)</td>
<td>¾ cup</td>
</tr>
</tbody>
</table>

1. Place salad greens equally onto dinner plates or bowls. Equally divide the toppings onto each salad. Drizzle dressing on top and enjoy.

Salad Dressing

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Red wine vinegar</td>
<td>1/3 cup</td>
</tr>
<tr>
<td>Sugar, granulated</td>
<td>½ Tablespoon</td>
</tr>
<tr>
<td>Water</td>
<td>1 Tablespoon</td>
</tr>
<tr>
<td>Olive oil</td>
<td>3 Tablespoons</td>
</tr>
<tr>
<td>Basil, fresh, chopped</td>
<td>2 Tablespoon</td>
</tr>
<tr>
<td>Poppy seeds</td>
<td>1 Tablespoon</td>
</tr>
<tr>
<td>Salt</td>
<td>½ teaspoon</td>
</tr>
<tr>
<td>Pepper</td>
<td>½ teaspoon</td>
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</tbody>
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1. In a small microwaveable bowl, combine sugar and water. Microwave for 30 seconds or until sugar is fully dissolved. Let sugar syrup cool.
2. In a small bowl, whisk together vinegar and sugar syrup. While continuing to whisk, slowly pour in the oil until combined. Whisk in basil, poppy seeds, and seasoning until fully combined. Pour into a salad dressing container.
3. Before serving, stir or shake dressing to fully combine.

Yummy Goodness and Tasty Tips!!

- Choose brightly colored berries with green caps attached.
- Avoid berries with soft spots or mold.
- Refrigerate unwashed berries in a non-airtight container and use within a couple of days. Rinsing them speeds up spoiling.
- To freeze, place clean, hulled berries in a single layer on a cookie sheet and freeze. Once frozen, place in a sealed plastic bag and use within 12 months.
- In addition to being consumed fresh, strawberries can be frozen, made into preserves, as well as dried and used in prepared foods, such as cereal bars.
Strawberries and strawberry flavorings are a popular addition to dairy products, such as strawberry-flavored milk, strawberry ice cream, strawberry milkshakes, strawberry smoothies and strawberry yogurts.

- Strawberries and cream is a popular dessert during the British summer, famously consumed at the Wimbledon tennis tournament.
- In Sweden, strawberries are a traditional dessert served on St John’s Day, also known as Midsummer’s Eve. Depending on area, strawberry pie, strawberry rhubarb pie, or strawberry shortcake are also popular.
- In Greece, strawberries are usually sprinkled with sugar and then dipped in Metaxa, a famous brandy, and served as a dessert.
- In Italy, strawberries have been used for various desserts and as a popular flavoring for gelato (gelato alla fragola).
- In the Philippines, strawberries are also popular, in which it is used for making the syrup in taho.
- As strawberry flavor and fragrance are popular characteristics for consumers, they are used widely in a variety of manufacturing, including foods, beverages, confections, perfumes and cosmetics.

**Digging in: Classroom or Home Learning Activities**

- **Science Investigation:**
  Talk about how strawberries grow outside and how to grow them inside. Since strawberries are easy to grow, have students design “Strawberry Instructions” packs that include strawberry seeds, nutrition facts, history, and fun illustrations. Send to local elder care centers, after-school programs, or youth activity centers, and offer to help plant the seeds.
- Plan a meal that includes strawberries. The meal should be low in calories, fat, and sodium and provide at least 20% of the recommended Daily Value for iron, fiber, and calcium. Which strawberry recipe would you select? What other foods (grains, fruits, vegetables, meat/beans, dairy products) would you include to make a complete, balanced meal? Which vitamins are included in your meal?
- Research the history, uses, and folklore associated with using strawberries as medicines.

**Library Connections. . .

- **Elementary:**
  - *From Seed to Plant* by Gail Gibbons
  - *Berries, Nuts and Seeds* by Diane Burns
  - *Gabe’s Grocery List* by Heidi Shelton Jenck
  - *Farmer’s Market Rounding* by Julie Dalton

- **Secondary:**
  - *The Reason for a Flower* by Ruth Heller
  - *Strawberry Girl* by Lois Lenski
  - *Sell What You Sow* by Eric Gibson