Tulare County Office of Education
Jim Vidak, County Superintendent of Schools

Mandarin-Teaching Points Grades 5-6

Reasons to Eat Mandarins?

- Mandarins are citrus fruits
- Citrus fruits are sources of flavonoids.
- Flavonoids are known for their antioxidant properties. They are believed to increase levels of vitamin C within the body's cells, increase blood flow and exhibit anti-allergy and anti-inflammatory effects.
- Mandarins are an excellent source of vitamin C. Vitamin C is an antioxidant. Antioxidants help prevent chemical damage to cells and can promote vision health, keep the immune system healthy, support cardiovascular health and help prevent cancer.
- Mandarins are a good source of vitamin A, supporting healthy vision.
- Mandarins are a good source of folic acid, a B-complex vitamin that can help prevent birth defects.

What's In a Name?

- The genus *Citrus* originated long ago with three species, the citron, pomelo and mandarin. They were the parents of the many citrus we eat today.
- Mandarin oranges are not oranges. To avoid confusion, they are often referred to as mandarins.
- The name tangerine is used to refer to mandarins of a deep, orange-red color and come from a mandarin cultivar that originated in Tangier, Morocco. While the two names are used interchangeably for commercial purposes, this is botanically incorrect.
- There are three main cultivars of mandarins. Research what a cultivar is.

Mandarin Cultivars	Marketed as	Popular California Grown Varieties of Cultivar
Common Mandarin	mandarins and tangerines	Clementine, Honey, Sunburst, Dancy, Pixie
Satsumas	Satsuma or Emerald Tangerine	Kara, Owari, Silverhill (70 California varieties and 200 worldwide
Mandarin Hybrids	tangelos (tangerine-pomelo) tangors (tangerine-orange)	Minneola tangelo, Sampson tangelo, Thornton tangelo, King tangor

Student Sleuths **This month included great information on nutrition**

- How are nutrients used in the human body?
  Nutrients are the parts of food your body uses. Nutrients are necessary for our bodies to grow the way they should. There are six nutrient groups. Most of them are called essential because they cannot be made by the body and must be obtained from food.

Nutrients that provide energy to run and play:

(1) Carbohydrates are made up of sugars. The function of carbohydrates is to supply energy and provide bulk in the form of cellulose or fiber (needed to move food through our bodies).

(2) Proteins have many important jobs in our bodies. They:

- Build and repair our skin

- Help make antibodies that fight disease
- Help make enzymes, hormones, and some vitamins
- Regulate fluid balance in our cells and other body tissues

(3) Fats are needed:

- To keep cells functioning properly
- To insulate the body's organs against shock
- To keep body temperature stable
- To maintain healthy skin and hair

The body does not manufacture certain fatty acids (essential fatty acids); the diet must supply these. Fats add flavor to foods.

Nutrients that support metabolism / help our bodies grow:

(4) Minerals are generally trace elements. These minerals are essential to human metabolism. The function of minerals is to build bones, teeth, tissues, and body fluids, and to regulate body processes. (For example, **calcium** helps blood clot and keeps heart muscles and nerves working properly. **Phosphorus** helps balance the alkalis and acids in the blood. **Magnesium** helps keep the nervous system working properly, helps regulate the body's temperature, and helps muscles contract.

(5) Vitamins are very important! We get them from the food we eat. They usually act as helpers or coenzymes for various proteins in the body and as antioxidants. Vitamins function as regulators and are needed in small amounts for growth and maintenance.

- **Vitamin A** helps prevent night blindness, help keep skin clear and smooth, promote growth, and help mucus membranes stay healthy.
- **Vitamin D** helps build strong bones and teeth.
- **Vitamin K** helps clot blood.
- **Vitamin C** helps the body fight infection, promote healthy gums and tissues, and help wounds heal.
- The **B-vitamin thiamine** helps promote normal appetite and digestion; it forms part of the coenzymes needed to breakdown carbohydrates.
- The **B vitamin niacin** helps keep the nervous system healthy and helps cells use other nutrients.
- **Vitamins A, D, E, and K** are fat-soluble which means they can be stored in the body. **Vitamin C** and the **B-complex** vitamins are water-soluble and cannot be stored by the body.

(6) Water is an essential nutrient and is directly involved in all the chemical reactions of life.

- Water aids in proper digestion.
- Plays a role in cell growth, cell maintenance, and all chemical reactions in the body.
- Lubricates the joints and body cells.
- Regulates body temperature.

<u>Just the Facts</u>

- When citrus fruits are processed, there is no waste. The juice is used for fresh juice and refined into wines, liquors, vinegars, and syrups; the peel is used to make oils, marmalade, pectin and citric acid; and seeds are used to make oils.
- In 2005, about 68 percent of the nation's total citrus crop was processed into mostly juice. More than half of California's citrus crop was sold as fresh. California's dry climate is the reason our oranges look so good. Citrus fruit that is not aesthetically pleasing is usually used for juice.
- Clementines are the most popular variety. California Clementines are available from mid-November to January leading to their nickname as "Christmas Oranges".

A Slice of Mandarin History

- The first known reference to citrus fruits was in 2,200 B.C.E. The mandarin is native to southeastern Asia and the Philippines.
- In 1914 Clementines are introduced to California farmers after five years of study at UC Riverside.
- !n 1997, a harsh winter in Florida devastates domestic orange production; opens booming market to California Clementines.

Home Grown Facts

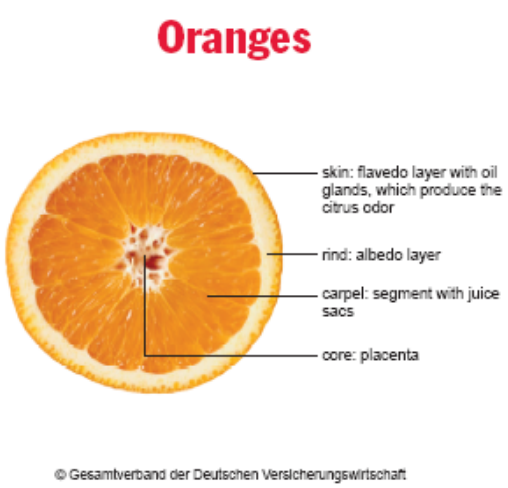
- California leads production of fresh citrus and ranks second nationally (behind Florida) in total citrus production.
- California is the nation's second leading grower of mandarins and leads domestic production of Clementines.
- Leading counties of mandarin production are Tulare, Riverside, San Diego, Imperial and Ventura.
- Satsumas, Clementines, and Minneola tangelos are the State's top three mandarin varieties.

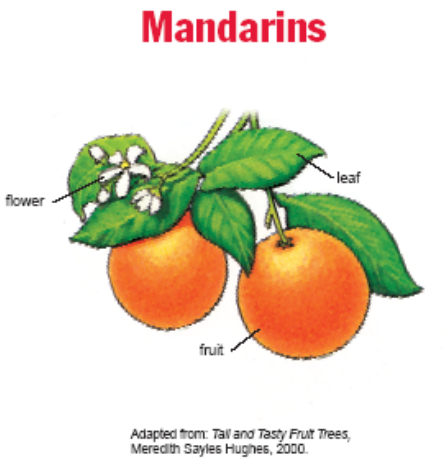
Eat Your Colors

- Eating fruits and vegetables from the yellow/orange color group has many health benefits such as helping to maintain a healthy heart, vision health, and healthy immune system. What are some other fruits and vegetables in the yellow/orange color group?

How Does Citrus Grow?

- Citrus plants are large shrubs or small trees. They have shiny evergreen leaves that stay on the tree all winter and wonderful smelling flowers. Have you smelled orange blossoms?
- It will take most citrus trees two to five years to blossom after planting.
- Citrus fruits can be left on the tree without becoming overripe and do not continue to ripen after being picked.
- For a labeled cross section of the orange and mandarin below, download from www.harvestofthemonth.com/EdCorner/download/images-graphs/botanical/cycle2/mandarin.pdf and www.harvestofthemonth.com/EdCorner/download/images-graphs/botanical/cycle1/orng_diagrm.pdf





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