

Science / Math: Great Green Guacamole

Ages: 7 - 13

Hello everyone. This is Bill from the Okanagan Regional Library System. Welcome to the fun and inventive world of making STEAM projects in your own home. Each month, I will share a fun and interesting project that you can make using materials commonly found in your own home.

This month's project: Great Green Guacamole

Great Green Guacamole



Guacamole (informally shortened to *guac* in North America since the 1980s)^[2] is an avocado-based dip, spread, or salad first developed in Mexico. In addition to its use in modern Mexican cuisine, it has become part of international cuisine as a dip, condiment and salad ingredient.

The name comes from Classical Nahuatl which literally translates to 'avocado sauce'. In Mexican Spanish, it is pronounced [waka'mole]. In American English, it tends to be pronounced [gwa:kə'mouli].

Avocado seeds were first found in the Tehuacan Valley of Mexico around 9,000–10,000 years ago (7000–8000 BCE) and had been domesticated by various Mesoamerican groups by 5000 BCE. They were likely cultivated in the Supe Valley in Peru as early as 3100 BCE. In the early 1900s, avocados frequently went by the name *alligator pear*. In the 1697 book, *A New Voyage*

Round the World, the first known description of a guacamole recipe (though not known by that name) was by English privateer and naturalist William Dampier, who in his visit to Central America during one of his circumnavigations, noted a native preparation made of grinding together avocados, sugar, and lime juice.

Materials Needed:

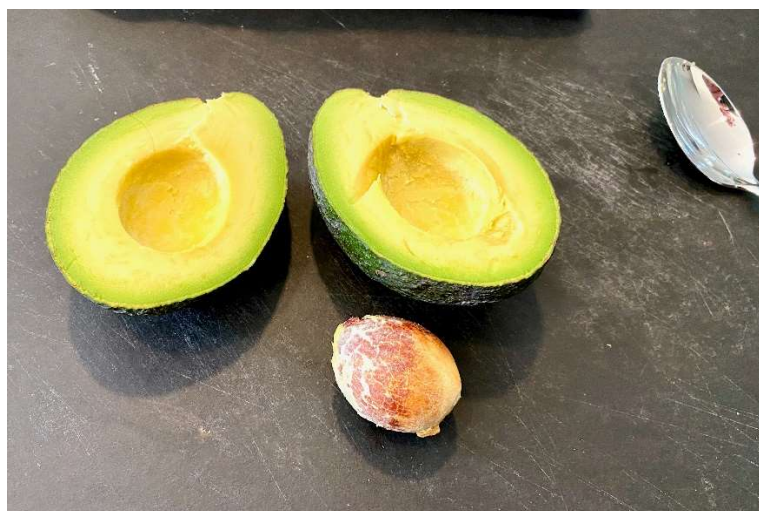
- 1 bowl
- 1 ripe avocado
- ¼ cup prepared salsa
- 1 tablespoon lime juice
- ½ teaspoon minced garlic
- ¼ teaspoon salt
- ¼ teaspoon pepper
- Tortilla chips or fresh vegetables



Time: Approximately 15 minutes

Steps:

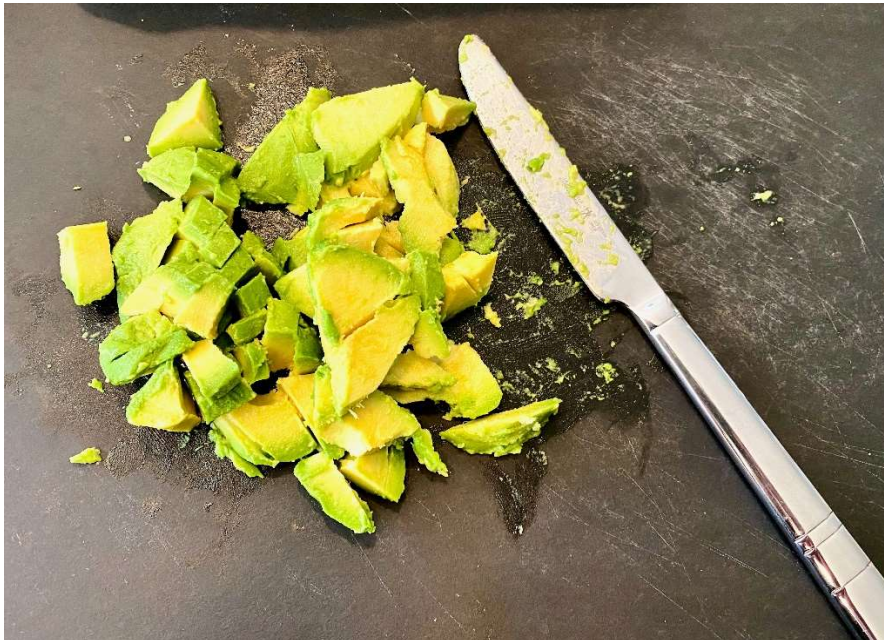
1. Before you begin, wash your hands. (Adult: Cut the avocado in half and remove the pit).



2. Use a spoon to scoop the avocado from the skin. Put the avocado on a cutting board.



3. Cut the avocado into small pieces using a child-safe knife or a butter knife. Put the pieces in a bowl.



4. Mash the avocado with a fork or potato masher until slightly chunky.



5. Add salsa, lime juice, garlic, salt, and pepper to the avocado. Mash gently.



6. Place the guacamole in a serving bowl. Arrange with tortilla chips or cut vegetables.



Read World Science: Great Green Guacamole

Guacamole is traditionally made by mashing peeled, ripe avocados and salt with a *molcajete y tejolote* (mortar and pestle). Recipes often call for lime juice, cilantro, onions, and jalapeños. Some non-traditional recipes may call for sour cream, tomatoes, basil, or peas. Due to the presence of polyphenol oxidase in the cells of avocado, exposure to oxygen in the air causes an enzymatic reaction and develops melanoidin pigment, turning the sauce brown. This result is generally considered unappetizing, and there are several methods (some anecdotal) that are used to counter this effect, such as storing the guacamole in an air-tight container or wrapping tightly in plastic to limit the surface area exposed to the air.

As the major ingredient of guacamole is raw avocado, the nutritional value of the dish derives from avocado vitamins, minerals and fats, providing dietary fibre, several B vitamins, vitamin K, vitamin E and potassium in significant content.



STEAM Concepts:

- Measurement
- Ratio
- Chemical Makeup