

# Food Science for the Win

## Grilled vs Roasted Vegetables

### Resource Guide



The kitchen is an ideal lab for experimenting and investigating while embracing your inner scientist. Explore the science of grilling and roasting vegetables to determine your preference.

## Basic Concepts

- **Maillard reaction:** Chemical reaction between amino acids and sugars resulting in browning and complex flavor development. Takes place above 350° F.

## Basic Equipment

- **Oven or toaster oven:** gas or electric, preferably calibrated
- **Baking sheet:** rimmed metal baking sheet, can cover in foil
- **Grill or grill pan:** gas or charcoal grills, cast iron grill pan
- **Cooking oil:** neutral cooking oils like vegetable oil that can withstand higher temperatures. Olive oil can also be used.

## Basic Techniques

- **Roasting** cooks a larger quantity of vegetables, cut up into smaller pieces, using applied even heat over a period of time. This results in crispier vegetables.
- **Grilling** cooks food through searing with high heat one side at a time.
- **Oiling** assists with heat distribution during the cooking process and keeps vegetables from shriveling up.

## Suggested Resources

- **The Food Lab by J. Kenji López-Alt:** This is a very accessible science cookbook. The author provides amazing photographs with a wide variety of recipes and serves as a source of inspiration for experimentation. The eBook is available on [Overdrive](#).
- **Salt, Fat, Acid, Heat: Mastering the Elements of Good Cooking by Samin Nosrat and art by Wendy MacNaughton:** This beautifully written and illustrated cookbook walks you through mastering the four basics of cooking: salt, fat, acid, and heat. The eBook is available on [Overdrive](#).
- **How to Roast Broccoli (video) from Serious Eats:** J. Kenji López-Alt shows how to make roasted broccoli using the science of high heat to avoid unpleasant, sulfuric odors.
- **What is the Maillard Reaction (video) from Food Science:** Dr. Kiki Sanford explains the Maillard Reaction.