

# Food Science for the Win

## Roast Chicken Resource Guide



The kitchen is an ideal lab for experimenting and being curious while embracing your inner scientist. Explore the science of making the perfect roast chicken.

### Basic Concepts and Terms

- **Spatchcock (butterfly):** Removing the backbone of the bird so that it lays flat. Ensures crispy skin, juicy meat, and a shorter cook time.
- **Maillard reaction:** Chemical reaction between amino acids and sugars resulting in browning and complex flavor development. Takes place above 350° Fahrenheit.
- **Connective tissue:** Chicken meat has various connective tissues like ligaments, tendons, and collagen. When chicken meat is cooked via heat, the tissue properties change. For example, collagen converts to gelatin and becomes tender. Cooking temperature as well as time affects the conversion of connective tissues.

### Basic Equipment

- **Kitchen shears or sharp knife:** A large, sharp knife or kitchen shears to cut out the chicken's backbone.
- **Baking sheet and wire rack:** A metal rimmed baking sheet and metal wire rack (can be used in place of a cast iron skillet).
- **Cast iron skillet:** Dense metal pan that holds and distributes heat very well (can be used in place of a baking sheet and wire rack).
- **Meat thermometer:** Tool used to check the internal temperature of the chicken breast (150° Fahrenheit) and chicken leg (165° Fahrenheit).

### Basic Techniques

- **Spatchcock** is a method of preparation in which you cut out the chicken's backbone (from tail to neck) using kitchen shears or a sharp knife.
- **Checking for doneness** involves sensory cues like the firmness of the flesh and juices running clear when flesh is pierced, but the most accurate way to determine doneness is to check the temperature with a meat thermometer.

## Suggested Resources

- ***The Food Lab: How (Not) to Make a Chicken* ([link](#)) from *Serious Eats* by J. Kenji López-Alt:** This article provides the science and techniques to roast a juicy and crispy chicken.
- ***The Food Lab* by J. Kenji López-Alt:** This is a very accessible science cookbook. The author provides detailed photographs with a wide variety of recipes and serves as a source of experimentation inspiration. Place a hold on the [print book](#) or the [eBook](#), which 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. Place a hold on the [print book](#) or the [eBook](#), which is available on OverDrive.
- ***How to Know When Food is Done* ([link](#)) from *Cooks Illustrated* by Elizabeth Bomze:** A comprehensive but easy to follow guide to help you determine if a food is done cooking
- ***Lavender Lemon Honey Spatchcock Roast Chicken* ([link](#)) from *Serious Eats* by Kerry Saretsky:** A roast chicken with just salt is delicious, but here's a recipe if you want to zhush it up.
- ***Roast Chicken with Schmaltzy Cabbage* ([link](#)) from *Smitten Kitchen* by Deb Perelman:** Recipe inspired by Helen Rosen's [Instagram post](#). We applied the same principles but used brussels sprouts and spatchcocked the chicken.