

Browning Reactions:

- #. What food molecules must be present for Maillard browning to occur?
- #. What property/properties do aldehydes contribute to foods?
- #. Above what temperature does significant Maillard browning take place?
- #. What cooking conditions encourage Maillard browning? What cooking conditions inhibit Maillard browning?
- #. Above what temperature does significant caramelization take place?
- #. What chemical reaction is catalyzed by phenol oxidase?
- #. What molecular changes take place that cause enzymatic browning?
- #. What conditions would encourage more sugar browning/caramelization when cooking?
- #. What role does water play in most browning reactions?

Cooking Methods:

- #. What are the main differences between boiling, steaming and pressure-cooking?
- #. Why does the addition of salt change the boiling point of water?
- #. What is “vapor pressure”?
- #. What does a phase diagram tell you about a substance?
- #. What are the 3 main mechanisms for heat transfer in preparing food?
- #. How does baking incorporate all 3 main mechanisms for heat transfer?
- #. Describe the major similarities and differences between boiling and deep-fat frying.
- #. What is the “smoke point” of an oil used for frying?
- #. Why is hot oil essential for deep-fat frying?

Storage and Preservation:

- #. Why does cold-storing foods preserve them?
- #. Describe the origins of the Fahrenheit and Celsius temperature scales.
- #. If a substance is 25°C, what is its temperature in °F?
- #. Why are absolute temperature scales useful/necessary?
- #. Describe the similarities and differences between drying and freeze-drying, both the process and the effect on the foods.
- #. What role does sugar play in the preparation and storage of sugar preserves?
- #. What happens to the freezing point of a solvent (like water) when a solute (like sodium chloride, NaCl) is added?

Seeds:

- #. Describe and identify the components of a seed.
- #. Describe the difference between monocot and dicot seeds. Give examples of each.
- #. What are some similarities and differences between grains, legumes, and nuts? How do they grow, what food molecules do they contain, etc

Graphing:

- #. Given a set of (x,y) data and graph paper, construct a meaningful graph.
- #. Interpret data presented in an XY-scatter plot format by defining linear trends.