Class Starters & Enders

Making the Most of Instructional Time
Five Minute Lessons

Class Starters and Enders help utilize the last minutes of class when a lesson ends but there is not enough time to start another, or for an interest approach at the beginning of class. Mini-lessons correlate to GPS in the programs areas below.

Who is FAT TOM?

Program Areas: Culinary Arts, Healthcare, Family and Consumer Sciences, Agriculture

Instructions: Read the narrative and make notes of important points, answer questions, if provided, and be ready to discuss this topic.

FAT TOM is a mnemonic device, meaning it is a verbal learning aid using the first letter of each word to form a phrase. It is used in the food service industry to describe six favorable conditions required for the growth of foodborne pathogens. It is an acronym for food, acidity, time, temperature, oxygen, and moisture. These are factors that help us understand how to keep foods safe.

Each of the six conditions that foster the growth of food-borne pathogens are described below.

Food	Some foods promote microorganism growth more than others. Protein-rich foods such as meat, milk, eggs and fish are most susceptible.
Acidity	Foodborne pathogens require a slightly acidic pH level of 4.6-7.5, while they thrive in conditions with a pH of 6.6-7.5. The Food and Drug Administration (FDA) regulations for acid/acidified foods require that the food be brought to a pH of 4.5 or below.
Time	Food should be removed from "the danger zone" (see below) within two hours, either by cooling or heating. While most guidelines cite two hours, a few indicate that four hours is still safe.
Temperature	Foodborne pathogens grow best in temperatures between 41 °F (5 °C) to 135 °F (57 °C), a range referred to as the temperature danger zone (TDZ). They thrive in temperatures that are between 70 °F (21 °C) to 120 °F (49 °C).
Oxygen	The presence of oxygen can be both helpful and harmful to the growth of pathogens. Aerobic pathogens need oxygen to grow, whereas anaerobic pathogens do not.
Moisture	Water is essential for the growth of foodborne pathogens. Water activity (w_a) is a measure of the water available for use and is measured on a scale of 0 to 1.0. Foodborne pathogens grow best in foods that have a w_a between 0.86 and 1.0. FDA regulations for canned foods require a w_a of 0.85 or below.

Review

1. What is the temperature range of the “Temperature Danger Zone”?
2. Why should food be kept out of the “Temperature Danger Zone” range?
3. What conditions other than these six should be considered to keep food safe?
4. If food products are keep in the TDZ range, what should be done before two hours have passed?
5. Which foods are most susceptible to foodborne pathogens?

Language Connection

Research and record definitions for following terms in notebook.

Mnemonic	Pathogens
Acronym	Foodborne pathogens
FDA	pH

Quick Lab!

Mold a piece of bread: Take a moist slice of bread and wrap it in a piece of tin foil. Place it in a dark place.
Evaluate how FAT TOM contributes to the mold growth.
Explore Further: Use different elements of FAT TOM

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