Because no one likes to be sick. . .

Kitchen Sanitation

What % of people wash their hands after going to the bathroom?

68%

What % of people wash their hands before handling food?

81%

How long should you wash your hands to kill off bacteria?

- NEED VOLUNTEERS!
- ANSWER:

20 SECONDS

What is a food-borne illness?

- Food Poisoning
- CDC estimates that each year roughly 1 in 6 Americans (or **48 million people**) gets sick, 128,000 are hospitalized, and 3,000 die of food-borne diseases.
  - Poor personal hygiene plays a major role in food borne illness breakouts.
  - Hand washing is part of personal hygiene practices.

Microorganisms

- **Living creatures seen only through a microscope**

- **4 Main Types:**
  - Bacteria
  - Toxins: Produced by bacteria
  - Parasites: Feed off a living host
  - Viruses: Can reproduce on any surface

BACTERIA

- Majority of food-borne illness cases are related to bacteria
- Grow rapidly and thrive in certain conditions we know as

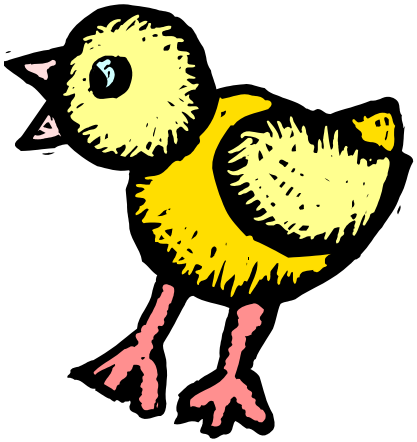
FAT-TOM

What do the letters stand for:

F: Food

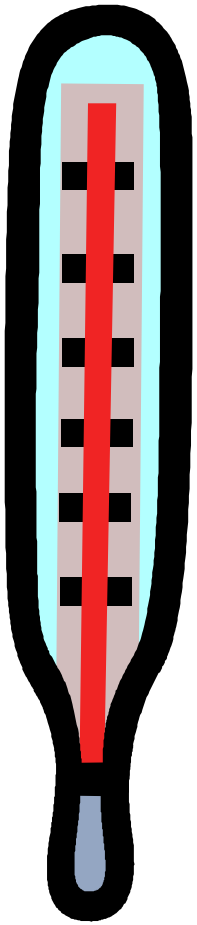
A: Acidity

- Foods with a medium pH more likely to grow bacteria

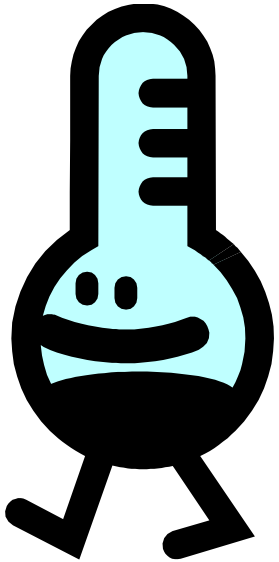


The 2 T's work together:

- TIME
- TEMPERATURE



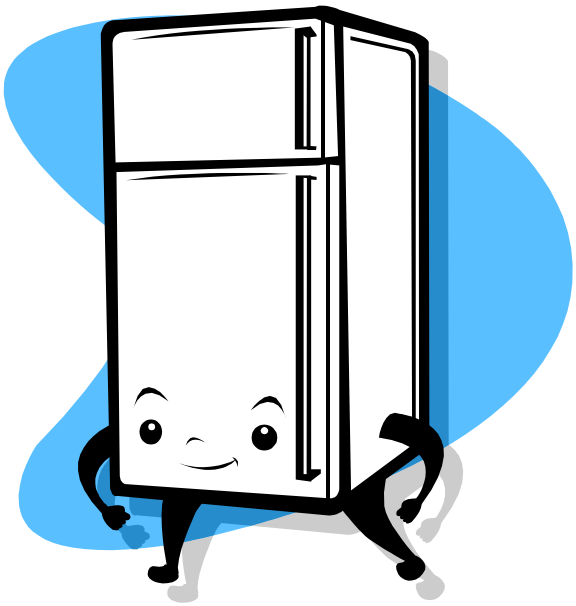
TEMPERATURE DANGER ZONE



- Temperature danger zone 41-135°
- Don't leave food out in the TDZ for more than 2 hours
- Keep hot foods hot
- Keep cold foods cold

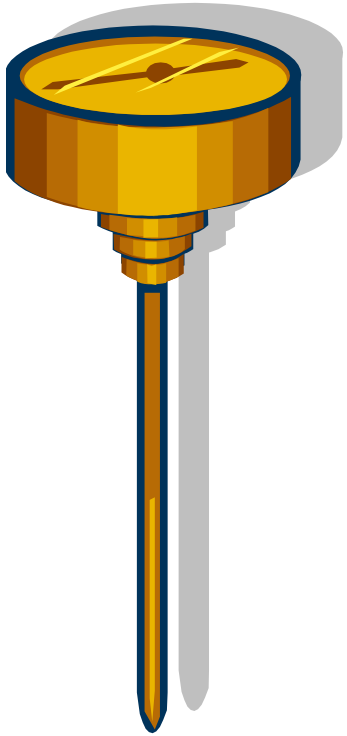
Thawing Foods

1. Refrigerate
2. Run under cold water or change still water every 30 minutes
3. Microwave
   - Only if cooking immediately!



COOKING FOODS

- Use a thermometer to reach proper internal temperatures



Moving on with FAT-TOM . . .

- O: Oxygen
  - aerobic vs. anaerobic
- M: Moisture
  - more moisture, more bacteria

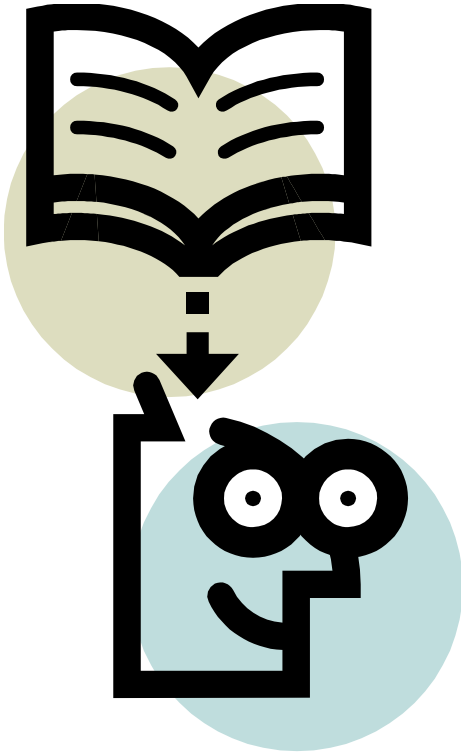
Personal Hygiene & Sanitary Work Methods

- Refer to page 196-197 in Food for Today

FINAL ADDITION TO NOTES:

CROSS CONTAMINATION:

LETTING MICROORGANISMS FROM ONE FOOD GET INTO ANOTHER



Food-Borne Illnesses

Pathogens causing the most illnesses, hospitalizations, and deaths each year

Eight known pathogens account for the vast majority of illnesses, hospitalizations, and deaths. Tables 1–3 list the top five pathogens causing illness, hospitalization, and death.

Table 1. Top five pathogens contributing to domestically acquired foodborne illnesses

Pathogen	Estimated number of illnesses	90% Credible Interval	%
Norovirus	5,461,731	3,227,078–8,309,480	58
Salmonella, nontyphoidal	1,027,561	644,786–1,679,667	11
Clostridium perfringens	965,958	192,316–2,483,309	10
Campylobacter spp.	845,024	337,031–1,611,083	9
Staphylococcus aureus	241,148	72,341–529,417	3
Subtotal			91

Table 2. Top five pathogens contributing to domestically acquired foodborne illnesses resulting in hospitalization

Pathogen	Estimated number of hospitalizations	90% Credible Interval	%
Salmonella, nontyphoidal	19,336	8,545–37,490	35
Norovirus	14,663	8,097–23,323	26
Campylobacter spp.	8,463	4,300–15,227	15
Toxoplasma gondii	4,428	3,060–7,146	8
E.coli (STEC) O157	2,138	549–4,614	4
Subtotal			88

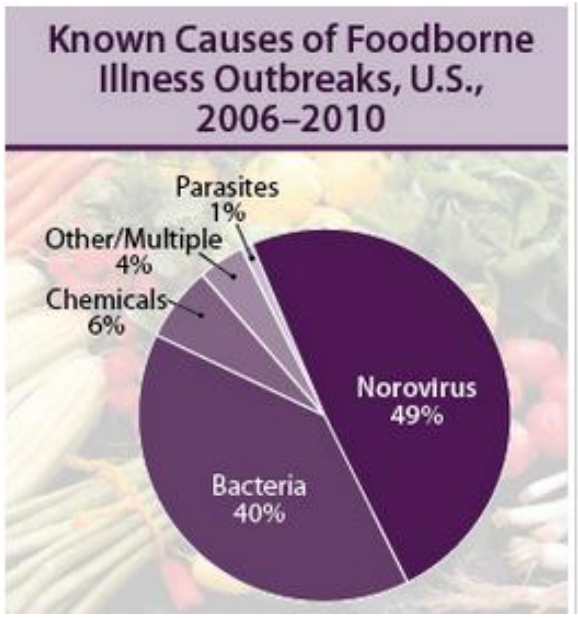
Group Project

- Using the iPads, research your food-borne illness and make 3- 8x11 posters **(primarily GRAPHICS)** representing their food borne illness:
  1. **Symptoms**
  2. **Associated Foods**
  3. **Prevention**

- **NOROVIRUS**
- **SALMONELLA**
- **STAPH**
- **C. PERFRINGENS**
- **CAMPYLOBACTOR**
- **E-COLI**
- **BOTULISM**
- **LISTERIA**
- **TOXOPLASMOSIS**

FOOD-BORNE ILLNESSES

- **NOROVIRUS**
  - **About 50% of all outbreaks of food-related illness are caused by norovirus.**
    - **If you work with food when you have norovirus illness, you can spread the virus to others.** You can easily contaminate food and drinks that you touch. People who consume the food or drinks can get norovirus and become sick.
  - **Foods** commonly involved in outbreaks:
    - leafy greens (such as lettuce)
    - fresh fruits
    - shellfish (such as oysters)



- **SALMONELLA**
  - Poultry, Eggs

FOOD-BORNE ILLNESSES

- **STAPH**
  - Personal hygiene; open wounds
- **C. PERFRINGENS**
  - **Beef, poultry, gravies, and dried or pre-cooked foods** are common sources
  - Often occurs when foods are prepared in large quantities and kept warm for a long time before serving.
  - Outbreaks often happen in institutions such as hospitals, school cafeterias, prisons, and nursing homes, or at events with catered food.
- **CAMPYLOBACTOR**
  - Undercooked poultry and unpasteurized dairy products

FOOD-BORNE ILLNESSES

- **E-COLI**
  - Beef products; Contaminated water supply
- **BOTULISM**
  - Canned goods; Tightly wrapped heated foods
    - i.e. Foiled baked potatoes
- **LISTERIA**
  - Dairy
  - Deli Meats
  - Melons
    - Wash melons with anti-bacterial soap before cutting into the fruit
- **TOXOPLASMOSIS**
  - Contact with kitty litter
    - Pregnant women should NOT change the litter box