

## **Cooking Small Pieces of Chicken or Meat – Is A Food Thermometer Necessary?**

When cooking small pieces of chicken or meat, it is difficult to get an accurate reading on a food thermometer because the thermometer cannot be inserted far enough into the product. It is also unlikely that an accurate reading can be obtained by trying to stack a product and measure through several pieces because there will be air spaces between the pieces that will interfere with the reading. Visual inspection will have to be used when cooking bite size pieces or ground poultry and ground meats that are spread out in a pan for browning,. See Table 1 for visual clues for doneness.

Bite size pieces of chicken or other meat will likely have contamination on the surface, not interspersed throughout the meat as with ground products. These small pieces have a large outside surface area that will heat up very quickly to a high temperature and destroy the bacteria that are present. Therefore, bite size whole products should pose less risk than ground.

Use a food thermometer to check the temperature when cooking loaves or patties. Most bacteria are destroyed by the time the internal temperature reaches 160 degrees F. Recommended internal temperatures are 165 degrees F for ground poultry and 160 degrees F for ground meats.

When making casseroles with bite-size pieces or ground meat or poultry, the final temperature of the dish should be checked prior to serving. The internal temperature should reach at least 165 degrees F. Check in at least two places. In a few cases, the final product may also be too small or thin to use a food thermometer properly. In these cases, every attempt should be made to make sure individual ingredients have been properly cooked prior to assembly using visual clues. If there is any question, the 4-H'er should ask the specialist in charge before proceeding. These foods should be served promptly, and leftovers should not be kept and taken to cabins without refrigeration to be eaten at a later time.

A safe alternative is to cook whole large pieces of meat or poultry, check the temperature with a food thermometer and then cut them into bite size pieces for use in recipes. Cooking temperatures can be found in Table 2. For uses other than with crumbled or bite-size pieces of meat, there is a good USDA publication on kitchen thermometers:  
[http://www.fsis.usda.gov/PDF/Kitchen\\_Thermometers.pdf](http://www.fsis.usda.gov/PDF/Kitchen_Thermometers.pdf)

When working with food lab projects, safe food handling education is an important part of teaching 4-Hers recipe selection and the skills required for safe food preparation. Using the foods lab score sheet as a guide, 4-Hers must understand the importance of safe food handling to the overall success of their lab project. Time and temperature are two very important parts of controlling bacterial growth and should be carefully monitored during food lab projects. Judges will not be expected to taste products when food safety violations are evident. This will result in a lower score.

**Table 1. Visual clues for doneness in small pieces of poultry, meats and fish.**

Product	Visual Clues
Chicken (small pieces)	Opaque, “fork tender” - a fork can be easily inserted, juices are clear with no evidence of blood
Ground Chicken (spread out to brown)	Opaque, juices are clear
Ground Beef (spread out to brown)	Brown, no evidence of blood, juices are clear
Fish	Opaque and flakes easily with a fork

**Table 2. Cook Food to the Proper Temperature to Kill Bacteria**

<b>Food</b>	<b>Internal Temperature</b>
<b>Ground Meat and Meat Mixtures</b>	
Beef, veal, lamb, and pork	160°F
Chicken and turkey	165°F
<b>Fresh Pork, Beef, Veal, Lamb</b>	
Chops, Roasts and Steaks <i>Minimum</i>	145°F then rest 3 minutes before carving or serving
Other Choices:	
<i>Medium</i>	160°F
<i>Well-done</i>	170°F
<b>Ham</b>	
Ham, fresh or smoked (raw)	145°F then rest 3 minutes before carving or serving
Ham, fully cooked (to reheat)	140°F if USDA inspected 165°F all others
<b>Poultry*</b>	
Chicken & Turkey, whole	165°F
Poultry breasts	165°F
Poultry thighs, wings	165°F
Stuffing (cooked alone or in bird)	165°F
*Consumers may prefer to cook to a higher temperature such as 170-180°F to eliminate pink color and rubbery texture.	
<b>Eggs</b>	
Fried, poached	<i>Yolk &amp; white are firm</i>
Casseroles	160°F
Sauces, custards	160°F
<b>Leftovers &amp; Casseroles</b>	165°F
<b>Fish and Seafood</b>	145°F
Or flesh is opaque and separates easily with a fork	

Adapted from Safe Minimal Internal Temperature Chart, FSIS-USDA, 2012