

Area – Foods and Nutrition

Problem – Uniformity/Portion Sizes

Standards

SD FCS Standard(s)

FCS 6.5.3

Assess how the scientific and technical advancements in food processing, storage, product development, and distribution impact nutrition and wellness.

SD Mathematics Standard(s)

Math 9-12.M.1.3

Use formulas to find perimeter, circumference, and area to solve problems involving common geometric figures.

Scenario

You are opening a restaurant. You want to be sure that all portion sizes are the same. You will be determining if a group of frozen ground beef patties are uniform. Does each patty weigh the same, even though they look very similar? (Use frozen patties because thawed patties will fall apart.) Note: This could also be applied to the Food Guide Pyramid serving sizes. Then you will prepare your ground beef patties as directed by your teacher.

What will you do?

Working with a partner(s), you will be given a package of frozen ground beef patties. You will determine the circumference, thickness and weight of each patty in the package using a digital caliper and scale. Then you will determine the difference between each patty in percentages using the given formula. Note this information on the assignment sheet. You will then use the ground beef patties for a food lab. After cooking the patties, and before eating them, measure the patties weight, circumference, and thickness.

What will you need?

Digital calipers that calculate standard and metric measurements

Frozen hamburger patties (or make your own and freeze)

Rubber gloves (so you can use the meat patties)

How will you be evaluated?

Teacher-generated checklist:

- _____uses/reads calipers correctly
- _____accurately determined circumference, using given formula, and thickness of meat using calipers
- _____accurately read scale to determine weight of meat
- _____correctly determined the percent difference between each of the patties in their package based on their measurements
- _____completed Portion Sizes/Uniformity Worksheet
- _____practiced food safety guidelines when handling meat

Supplemental Materials

Portion Sizes/Uniformity Worksheet
Handout on Circumference

Resources

<http://www.mathgoodies.com/lessons/vol2/circumference.html>