

## Math-in-CTE Lesson Plan Template

Lesson Title: CA_17 Fat Content of Food_LP		Lesson # CA_19
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Occupational Area: Culinary Arts		
CTE Concept(s): Measuring Percentage of Fat in Food		
Math Concepts: percents/division/decimals/formulas/ rounding		
Lesson Objective:	Students will compute the fat content of food items using math formulas	
Supplies Needed:	calculators, food labels, fast food worksheet	

<b>THE "7 ELEMENTS"</b>	<b>TEACHER NOTES (and answer key)</b>
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**1. Introduce the CTE lesson.**

**Write script here.**

Pass out food labels first.

Draw picture of a muffin, divide it into 3 sections. Fill in the 3 nutrients & % as students respond:

Fats= 30 %

Carbohydrates= 55%

Proteins= 15%

Helps one make healthy food choices and control caloric intake so you can avoid excess weight

Fats contribute more calories than carbs and proteins.

Food labels, nutrient content charts

Total calories and calories from fat are usually listed at the beginning of food nutritional labels.

**2. Assess students' math awareness as it relates to the CTE lesson.**

**Where have you seen percents in real life?**

**What percent is  $\frac{1}{2}$  of something?**

**What percent is  $\frac{1}{4}$ th of something?**

**Now let's look at it a different way....**

**How much is 30% of something?**

**How do we determine a percentage?**

(student responses)

50%

25%

less than  $\frac{1}{3}$

divide one number by another:

move decimal two places to the right

**3. Work through the math example *embedded* in the CTE lesson.**

Lets find out how much fat calories there is in a typical slice of cheesecake.

1 piece of cheesecake has has 257 total calories.

1 piece of cheesecake has 158 calories from fat.

What percentage of fat calories?

Is that a healthy choice?

½ cup chocolate pudding has 36 fat calories

Total amount of calories is 155 calories.

What percent to the nearest whole percent are the fat calories if you chose chocolate pudding instead of cheese cake?

Is this a healthy choice?

**Which do you think has the highest percentage of fat...  
McDonald's Big Mac or a Burger King Whopper?**

Look up the fat content and total calories of those fast food items and calculate the fat percentage.

Write on board:

FC = fat calories

TC= total calories

$FC/TC = \%$  (change decimal to %)

$158/257 = .6147$

61%

no

$36/155 = .232258$  (23%)

yes, it is less than 30%

Website [www.fastfoodnutrition.org](http://www.fastfoodnutrition.org)

**4. Work through *related, contextual* math-in-CTE examples.**

**8 is what percent of 20?**

Figure on back of same note paper.

40%

**The restaurant sold 12 desserts to the 30 diners that came in on friday night. What percent of the diners ordered salad?**

40%

$58/114 = .50877$  51%

**58 guests at the wedding reception pre-ordered the fish. the remaining 56 guests ordered something else. What percent of the guests ordered the fish?**

**5. Work through *traditional math* examples.**

Let's apply this same formula to other life skills:

(round answers to the nearest percent)

If a person spends \$86 at the grocery store and \$21 is spent on milk, cheese and yogurt, what percent was spent on dairy products?

If a couple makes a gross income of \$2800. Each month they make a house payment of \$750 and their home insurance averages \$75 month. What percent of their monthly income is spent on housing?

Steve 's new apartment has hard wood floors and he wants to cover at least 75% with an area rug. If the room is 15 feet by 20 feet, which one of the area rugs would be big enough?

- a. 11 ft by 14 ft
- b. 3 ft by 5 ft
- c. 14 ft by 16 ft
- d. 12 ft by 15 ft.

Calculate on ½ sheet paper.

$$21/86 = .24418 \quad (24\%)$$

gross income = total income before deductions

$$(1750 + 75)/2800 = .2946 \quad (29\%)$$

$$15 \times 20 = 300 \text{ sq ft}$$

$$300 \times .75 = 225$$

$$11 \times 14 = 154 \text{ sq ft}$$

$$3 \times 5 = 15 \text{ sq ft}$$

$$15 \times 16 = 240 \text{ sq ft (correct answer)}$$

$$12 \times 15 = 180 \text{ sq ft}$$

**6. Students demonstrate their understanding.**

**Using the internet choose your favorite franchised restaurant, pick a favorite food item, and calculate the percentage of fat for that food item. Show me your answer.**

<p><b>7. Formal assessment.</b></p> <p><b>Possible Quiz Questions:</b></p> <p><b>A turkey leg at the Iowa State Fair has 135 calories and 21 fat calories. What is the percentage of fat? (round to nearest whole percent)</b></p> <p><b>Possible Test Question:</b></p> <p><b>Which SUBWAY sandwich has the highest percentage of fat content?</b></p> <ul style="list-style-type: none"> <li><b>a. Roasted chicken breast (54 fat calories, 311 total calories)</b></li> <li><b>b. Roast beef (42 fat calories, 264 calories)</b></li> <li><b>c. Turkey breast &amp; bacon(63 fat calories, 321 total calories)</b></li> <li><b>d. Cold cut trio (180 fat calories, 415 total calories)</b></li> </ul>	<p><math>21/135 = .155</math> (16%)</p> <p><math>54/311 = .173</math> 17%</p> <p><math>42/264 = .159</math> 16%</p> <p><math>63/321 = .196</math> 20%</p> <p><math>180/415 = .433</math> 43%</p>
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