

Name _____ Teacher _____ Date _____

2.2: Grading the Food Labels Worksheet

*This tool has “grading” in the title because at this point, students can be held accountable for correct answers. Correct responses to the questions are in **blue bold italics** below.*

Red italics suggest ways to grade student responses by giving them points for correct or partially correct answers. There are 39 points total on this quiz.

Food labels can tell us a lot about the molecules in the cells of the organisms that they come from—especially large organic molecules. You can analyze different kinds of organisms by studying the handout [2.2 Food Label Cards](#). This handout shows how many grams of different materials are in 100 g of each food. Follow these steps to fill out the table below:

1. Fill in the kind of organism that the food comes from (animal, plant, or decomposer)
2. Find the mass in grams of main organic materials in the food: carbohydrates, fats, and proteins.
3. Remember that the total mass of vitamins and minerals is less than 1 gram.
4. Calculate the amount of water by subtracting the mass of the organic materials from the total mass (100 g).
5. Find the amount of chemical energy (calories) in that food.

	FOOD NAME	Kind of organism it comes from	Organic materials			Water (grams)	Chemical energy (calories)
			Fat (grams)	Carbohydrates (grams)	Protein (grams)		
1	beef	<i>Cow muscle</i>	<i>21</i>	<i>0</i>	<i>18</i>	<i>61</i>	<i>250</i>
2	carrots	<i>Plant root</i>	<i>0</i>	<i>10</i>	<i>1</i>	<i>89</i>	<i>40</i>
3	celery	<i>Plant leaf stem</i>	<i>0</i>	<i>3</i>	<i>1</i>	<i>96</i>	<i>15</i>
4	mushrooms	<i>Fungus (decomposer)</i>	<i>0</i>	<i>11</i>	<i>2</i>	<i>87</i>	<i>40</i>
5	spinach	<i>Plant leaf</i>	<i>0</i>	<i>8</i>	<i>3</i>	<i>89</i>	<i>35</i>
6	peanuts	<i>Plant seeds</i>	<i>50</i>	<i>22</i>	<i>24</i>	<i>4</i>	<i>590</i>

1 point for each correct answer (36 points total)

Compare the organic materials in beef (cow muscle) with the organic materials in carrots (plant roots), celery (plant leaf stems), and spinach (plant leaves). What are the differences in the kinds and amounts of organic materials in animals vs. plants?

Compared to plant foods (except peanuts) beef has:

- *More fat*
- *Less carbohydrates*
- *More protein*
- *(Also more chemical energy, but that question is not asked)*

1 point for each correct answer: 3 points total