

Nutritional analysis worksheet

Break a meal into nutrients, energy and shares.



NAME _____ CLASS _____ DATE _____

LEARNING GOAL

Work out the energy in a meal and how much of it comes from each nutrient.

SUCCESS CRITERIA

- ☐ I can add up the grams of protein, carbohydrate and fat.
- ☐ I can multiply grams by energy per gram to find kcal.
- ☐ I can work out each nutrient's share of the energy.

1 Three energy values

Protein, carbohydrate and fat are **macronutrients**, the energy nutrients, counted in kilocalories (kcal).

PROTEIN

4 kcal for each gram

**CARBOHYDRATE**

4 kcal for each gram

**FAT**

9 kcal for each gram



General values for school calculations; food labels may differ slightly. Food values here are invented, rounded, not for labelling.

WORKED EXAMPLE: READ IT FIRST

Porridge bowl (invented), one portion

STEP 1 Add up each column of grams.

INGREDIENT	AMOUNT	PROTEIN g	CARBOHYDRATE g	FAT g
Oats	40 g	4	26	3
Semi-skimmed milk	150 ml	5	7	2
Banana	half	1	12	0
Honey	1 tsp	0	6	0
Total		10	51	5

STEP 2 grams × energy per gram = kcal. Share of energy = nutrient kcal ÷ total kcal × 100.

	Grams g		Energy per gram		Energy kcal	Share of energy %
Protein	10	×	4 kcal	=	40	13.8
Carbohydrate	51	×	4 kcal	=	204	70.6
Fat	5	×	9 kcal	=	45	15.6
Total					289	100.0

Your turn: cheese sandwich

Fill every white box. Show your working.



2 Cheese sandwich

YOUR TURN

Cheese sandwich (invented), one portion

STEP 1 Add each column of grams. Write the totals in the bottom row.

INGREDIENT	AMOUNT	PROTEIN g	CARBOHYDRATE g	FAT g
Wholemeal bread, 2 slices	80 g	8	30	3
Cheddar-style cheese	30 g	8	0	10
Salad	40 g	0	2	0
Total				

STEP 2 Copy each total into the grams box. Multiply, then add. Share of energy = nutrient kcal ÷ total kcal × 100, to the nearest whole number.

	Grams g		Energy per gram		Energy kcal	Share of energy %
Protein		×	4 kcal	=		
Carbohydrate		×	4 kcal	=		
Fat		×	9 kcal	=		
Total				=		

💡 **Check:** your three shares should add up to about 100.

3 Energy per 100 g

Compare foods fairly by finding the energy in 100 g. The sandwich weighs 80 + 30 + 40 g in total.

PER 100 G

Total energy		Total weight		Energy per 100 g
	÷		× 100 =	
kcal		g		kcal per 100 g

Swap and compare

Change one ingredient and see what happens.



4 Swap the cheese for chicken

SWAP

Chicken sandwich (invented), one portion

STEP 1 Use 30 g of sliced chicken instead of 30 g of cheese. Add each column of grams.

INGREDIENT	AMOUNT	PROTEIN g	CARBOHYDRATE g	FAT g
Wholemeal bread, 2 slices	80 g	8	30	3
Sliced chicken (invented)	30 g	9	0	2
Salad	40 g	0	2	0
Total				

STEP 2 Work out the energy. You do not need the share this time.

	Grams g		Energy per gram		Energy kcal
Protein		×	4 kcal	=	
Carbohydrate		×	4 kcal	=	
Fat		×	9 kcal	=	
Total					

COMPARE THE TWO SANDWICHES

Cheese sandwich		Chicken sandwich		Difference
	-		=	
kcal		kcal		kcal

Which nutrient changed the most? Explain.

My own meal

Use a food label or database for your numbers.



5 My own meal

MY MEAL

Meal name: _____

STEP 1 Copy the grams from a food label or database. Add each column.

INGREDIENT	AMOUNT	PROTEIN g	CARBOHYDRATE g	FAT g
Total				

Where my numbers came from:

STEP 2 Copy your totals into the grams boxes. Give each share to the nearest whole number.

	Grams g		Energy per gram		Energy kcal	Share of energy %
Protein		×	4 kcal	=		
Carbohydrate		×	4 kcal	=		
Fat		×	9 kcal	=		
Total						

GO FURTHER: PER 100 G

Total energy		Total weight of my meal		Energy per 100 g
	÷		× 100 =	
kcal		g		kcal per 100 g

Food groups and what I noticed

Look at the whole meal, not just the numbers.



6 Food groups check

Tick the groups that are in my meal. Groups and advice differ between countries: your teacher will give you your country's guidance.

✓ GROUPS

- ☐ Fruit and vegetables
- ☐ Potatoes, bread, rice, pasta and other starchy foods
- ☐ Dairy and alternatives
- ☐ Beans, pulses, fish, eggs, meat and other proteins
- ☐ Oils and spreads

A group missing from my meal:

One way to add it:

7 What I noticed

Sentence starters: choose one

MOST

The nutrient that gave the most energy was ____.

SURPRISE

I was surprised that ____.

COMPARE

My meal and the sandwich are different because ____.

NEXT

One change I could test is ____.

NOTICED

✓ CHECK

- ☐ I added every column and wrote the totals.
- ☐ I used 4, 4 and 9 kcal per gram.
- ☐ I said where my numbers came from.