



Grade 4 – Numbers and Nutrition.

Activity 4: Every living thing needs energy.

Strand: Mathematics

Curriculum Connections

- > represent, and explore the relationships between, decimals, mixed numbers, and fractions using concrete materials and drawings
- > compare and order whole numbers and decimals using concrete materials and drawings
- > select and perform computation techniques appropriate to specific problems involving whole numbers and decimals, and determine whether the results are reasonable
- > solve problems involving whole numbers and decimals, and describe and explain the variety of strategies used

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Numbers and Nutrition

> **Every living thing needs energy.**

We need energy for running, jumping, swimming and just about everything that is fun and active. To get energy, our body needs calories. We get calories from delicious food, the fuel that feeds us.

We get calories from food.

We need energy to work and play.

We convert calories to energy.



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How many calories do you need?

The average grade four student needs about 1500-2500 calories, depending on their activity level. The more active you are, the more energy you need. So, a very active person needs to eat more calories than a couch potato.

Calories are not the only equation we think about in a healthy diet (we also pay attention to things like fat, vitamins and minerals). But in this lesson, we'll concentrate on adding up calories in the food we eat. So, let's get munching!

Food Name	Serving Size	Calories (Energy)
Apple Pie	1 Piece	405
Bagel (Plain)	1	200
Banana	1	105
Blueberry Muffin	1	135
Carrot (raw, whole)	1	30
Cheeseburger	1	525
Ice Cream (Vanilla)	1 Scoop	270
Macaroni & Cheese	1 Cup	259
Onion Rings	10 Rings	400
Orange Juice	1 Cup	110
Popcorn (plain)	1 Cup	30
Potato Chips	1 Cup	1050
Spaghetti with Meatballs	1 Cup	330
Taco	1	195
Waffles	1	245
White Bread	1 Slice	65

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a) Add up the total of calories of all these foods:

b) Add up the total number of calories when you combine three lowest calorie foods:

c) Add up the total number of calories when you combine the three highest calorie foods:

d) How many more calories are contained in the three highest calorie foods than in the three lowest calorie foods?

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Fill in the chart below

Food	Calories	Expanded Form	Written Form
Example: 1 Piece of Apple Pie	405	400 + 5	Four hundred five
1 Banana	200		
1 Blueberry Muffin	135		
1 Cup of Potato Chips	1050		
1 Cheeseburger	525		
1 Serving of Macaroni & Cheese	259		
1 Slice of White Bread	65		
1 Cup of Orange Juice	110		
1 Scoop of Vanilla Ice Cream	270		

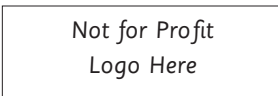
Let's assume you're a very picky eater who eats the same meal three times in one day (how boring!) How many calories from each of these types of foods would you consume in a day?

3 cheeseburgers:

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3 cups of orange juice:

3 carrots:

3 slices of apple pie:

Do you like cheeseburgers?

If you ate 10 cheeseburgers a year, how many calories would you consume?

What if you ate 100?

What about 1000?

That's an awful lot of cheeseburgers!

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> **Meet Joe.**



Joe is an average grade four student. He spends his day working hard at school. In his free time, he loves to run around in the backyard, chase his sister, play soccer, and ride his bike. He's pretty active, so he needs to eat about 2000 calories of energy per day.

Be a chef! Create a menu for Joe. Using the food chart, add up three meals plus snacks per day that equal between 1900-2100 calories.

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Menu A	Menu B	Menu C
Breakfast:	Breakfast:	Breakfast
Lunch:	Lunch:	Lunch:
Dinner:	Dinner:	Dinner:
Snacks:	Snacks:	Snacks:
Total:	Total:	Total:



Student Name: _____

Below are some of Joe's favourite activities. Using the chart below, answer the following calorie burning questions.

Activity	15 minutes	30 minutes	45 minutes	60 minutes
Baseball/ Softball	92	159	240	317
Cycling (12 mph)	100	200	300	410
Hockey	142	290	420	555
Jump Rope	170	290	460	620
Rowing	150	350	475	650
Soccer	140	270	415	555
Swimming	130	250	380	510
Volleyball	48	90	144	190

How many minutes would Joe have to ride his bike to burn off 1 bagel?

How many carrots would Joe have to eat to power himself for 15 minutes of rowing?

If you ate one cheeseburger, then swam for 30 minutes, how many calories of that cheeseburger would still be in your body?

If you played one hour of soccer, approximately how many bananas would you have to consume for the energy used?

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If each onion ring has 40 calories, how many onion rings can you eat to power yourself for 45 minutes of softball?

Approximately how many cups of orange juice would you need to play one hour of hockey?

Now it is time to measure your own calories!

For the next week, track how many calories you consume. Remember, the more you play, the more calories you need. Check out the following websites to find out how many calories each of your foods contain.

<http://www.caloriecountercharts.com>

<http://www.caloriechart.org>

<http://www.calorie-counter-chart.com>

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Day	Breakfast Food	Calories	Lunch Food	Calories	Dinner Food	Calories	Snacks Food	Calories	Total Calories
Monday									
Total									
Tuesday									
Total									
Wednesday									
Total									
Thursday									
Total									
Friday									
Total									
Saturday									
Total									
Sunday									
Total									
Grand Total									