



Classroom Connections



Nutrition

For more STEMonstrations and Classroom Connections, visit www.nasa.gov/stemonstation.



Grade Level: **6th-8th**



Suggested Time: **50 minutes**



Next Generation Science Standards (NGSS):

MS-LS1-5. *From Molecules to Organisms: Structures and Processes.* Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. **Grade:** 6-8

Common Core Standards for
Mathematical Practice:

CCSS.MATH.CONTENT.5.OA.A.1

Write and interpret numerical expressions

CCSS.MATH.CONTENT.5.MD.B.2

Represent and interpret data

Background

Here on Earth many of us have the luxury of eating whatever we want, whenever we want, with all varieties of food available to us. In space, things are a little different! Some foods delivered to the International Space Station (ISS) can be eaten in their natural forms, such as brownies and fruit. Others, such as macaroni and cheese or spaghetti, require the use of a machine to add water, rehydrating the food. Foods like this are dehydrated to reduce their weight.

Astronauts do have an oven on station to heat their foods to the proper temperature; however, there is no refrigerator aboard the ISS. Food needs to be packaged or processed properly to keep it from spoiling. Condiments that we use regularly on Earth, such as ketchup, mustard, salt, and pepper are available to the astronauts on orbit. Salt and pepper are contained in liquids because in their natural state, they would float away, or worse, clog an air vent or get stuck in a crew member's eye! Astronauts eat three meals a day - breakfast, lunch, and dinner with some snacks in between meals like we do.

Nutritionists at NASA develop dietary guidelines that provide a balanced supply of vitamins and minerals to keep crewmembers healthy for long-duration spaceflights. Caloric intake requirements differ among astronauts due to size and other factors such as age, metabolism, and gender.

Objective

Following this activity, students will be able to:

- Familiarize themselves with www.ChooseMyPlate.gov and obtain their MyPlate Daily Checklists
- Research the caloric content and nutritional value of space foods

- Construct one-day space food menus for a male and female astronaut
- Calculate an individual's Basal Metabolic Rate (BMR) using variables provided
- Determine the number of kilocalories (kcal) of food energy that an individual needs each day to maintain mass and fitness

Today you will be researching the nutritional values of foods aboard the ISS and creating single day menus for a male and female astronaut. In order to create these menus, you will first need to calculate each individual's BMR, or basal metabolic rate. This is the rate at which the body uses energy for life processes and is determined by knowing a person's gender, height, mass, and age. All of these factors impact the body's energy needs. BMR is based on metric measurements and is equal to the amount of kilocalories of heat energy a body generates in one day.

1 kcal = 1,000 calories.

A calorie is the amount of heat needed to raise the temperature of 1 milliliter of water 1 degree Celsius.



Nutritionists help plan menus based on recommended daily allowances to maintain energy level and good health. Everything you eat and drink throughout your day matters, and the right balance of food can help you become healthier now and in the future.

The MyPlate Daily Checklist (ChooseMyPlate.gov) shows your food group targets – what and how much of each group to eat within your target calorie allowance. Your food plan is based on your age, gender, height, weight, and physical activity level. For example, a male astronaut that requires 3,200 calories per day should aim to eat the following amounts from each food group per day: 2.5 cups of fruits, 4 cups of vegetables, 10 ounces of grains, 7 ounces of protein, and 3 cups of dairy. Another goal of a healthy diet should be to limit consumption of sodium, saturated fat, and added sugars. For our male example, the goal is to limit sodium to 2,300 milligrams per day, saturated fat to 36 grams per day, and added sugars to 80 grams per day.

To create your own MyPlate Daily Checklist, first go to ChooseMyPlate.gov, select online tools, and enter your information using the MyPlate Checklist Calculator. Finally, you can select your suggested calorie level from your age group using the checklist and begin your path to a healthier lifestyle!

Sources: NASA's "Food for Thought" Activity Guide and ChooseMyPlate.gov

Materials

- Computer with access to internet
- A copy of the ISS Standard Menu Nutritional Data (pgs. 10-18)
- Calculator
- Astronaut Energy Needs worksheet

Procedure

1. Ask students the question: Why do humans need food?
2. Watch the video STEMonstratation: Nutrition. Reinforce how and why astronauts aboard the ISS must follow dietary guidelines that provide a balanced supply of vitamins and minerals to keep them healthy during long-duration spaceflights.
3. Explain to students that long-duration spaceflight requires a lot of food because there are typically six crewmembers aboard the space station. The number of crewmembers, caloric intake, and nutritional requirements needed to maintain a healthy diet determines the amount of food per mission.

4. Organize students into pairs and distribute the Astronaut Energy Needs worksheets (pgs. 4-9). Pairs will calculate the energy needs for two astronauts (one male and one female), with daily calorie requirements given. Students will use the ChooseMyPlate.gov website to find amounts of food groups necessary per day for each astronaut based on their calorie levels.



5. Inform students that all measurements of mass and height are in metric units (kilograms and centimeters). Review the relationship of metric and standard units. (1 kilogram = 2.2 pounds, 2.54 centimeters = 1 inch, etc.)
6. Review the mathematical procedures needed to determine BMR, included on worksheets, and remind students that they should first multiply factors within parentheses before adding all of the numbers together.
7. In the worksheets provided, the answers determined will be in kcal or kilocalories. Discuss with students what a kcal is.
8. Have pairs calculate daily energy needs based on activity by multiplying BMR for the male and female astronauts by the exercise factor given. Performing these calculations will determine the number of calories needed for a day based on the level of activity for each astronaut. Ensure that the students understand that on a day of heavy exercise, the body requires more energy than on a day of rest.
9. Once the number of calories is determined for each astronaut, have students find the nutritional requirements for each individual using the MyPlate Daily Checklist from ChooseMyPlate.gov.
10. Students will create 1-day menus for the male and female astronaut based on the data collected from the Astronaut Energy Needs worksheet and the MyPlate Daily Checklists. The International Space Station Standard Menu Nutritional Table is provided and lists every food that is available to the crew on the ISS and includes the nutritional information for each food item.

Astronaut Energy Needs

Student Activity



Instructions

You and your team member are tasked with calculating daily energy needs for a male and female astronaut aboard the ISS. You will first use the basal metabolic rate (BMR) equations provided to find the BMR of each individual. Next, you will calculate the daily energy needs of each astronaut by multiplying the BMR with the given exercise factor. You will then determine the number of calories needed for a day based on the level of activity for each astronaut. Understand that on a day of heavy exercise, the body requires more energy than on a day of rest.

MALE ASTRONAUT:

AGE: 40

HEIGHT: 183 centimeters

MASS: 93 kilograms

MALE BMR EQUATION: $BMR = 66.47 + (13.75 \times \text{mass}) + (5.003 \times \text{height}) - (6.775 \times \text{age})$

Note: Use the values provided for the male astronaut in the BMR equation above and provide your results in the space below. For example, the age of the male astronaut is 40, so you would complete the age portion of the equation like so: (6.775×40)

Results of Male Astronaut BMR Calculation:

BMR = $66.47 +$ _____ $+$ _____ $-$ _____

BMR = _____ kcal

FEMALE ASTRONAUT:

AGE: 38

HEIGHT: 155 centimeters

MASS: 55 kilograms

FEMALE BMR EQUATION: $BMR = 655.1 + (9.563 \times \text{mass}) + (1.850 \times \text{height}) - (4.676 \times \text{age})$

Note: Repeat calculations below using female BMR equation.

Results of Male Astronaut BMR Calculation:

BMR = $655.1 +$ _____ $+$ _____ $-$ _____

BMR = _____ kcal

Astronaut Energy Needs

Student Activity (continued)

DAILY ENERGY NEEDS BASED ON ACTIVITY (MALE)

BMR x exercise factor = actual needs in kcal

No exercise (TV, video games, sitting) _____ x 1.2 = _____ kcal

Moderate exercise (sports, exercise 3-5 days /week) _____ x 1.55 = _____ kcal

Very active (hard exercise 5-7 days/week) _____ x 1.9 = _____ kcal

DAILY ENERGY NEEDS BASED ON ACTIVITY (FEMALE)

No exercise (TV, video games, sitting) _____ x 1.2 = _____ kcal

Moderate exercise (sports, exercise 3-5 days /week) _____ x 1.55 = _____ kcal

Very active (hard exercise 5-7 days/week) _____ x 1.9 = _____ kcal



Menu Planning

On the next several pages, you will be creating 1-day menus for each astronaut (male and female) based on their BMR and daily energy needs (remember – astronauts are very active!) You will be using the ISS Standard Menu Nutritional Data table, provided by your instructor in order to plan three meals and a snack for your astronaut for one day. You should also reference the MyPlate Daily Checklists in this exercise to ensure each astronaut receives the correct amount of nutrients. Once your menus are completed, write a paragraph summarizing why an astronaut should eat all foods included on the menu.

Astronaut Energy Needs

Student Activity (continued)

ONE DAY MENU (MALE ASTRONAUT)

BMR: _____ kcal

DAILY ENERGY NEEDS: _____ kcal

Breakfast

FOOD ITEM	KCAL	PROTEIN (g)	CARBS (g)	FAT (g)	MASS (g)

Lunch

FOOD ITEM	KCAL	PROTEIN (g)	CARBS (g)	FAT (g)	MASS (g)

Astronaut Energy Needs

Student Activity (continued)

ONE DAY MENU (MALE ASTRONAUT)

Snack

FOOD ITEM	KCAL	PROTEIN (g)	CARBS (g)	FAT (g)	MASS (g)

Dinner

FOOD ITEM	KCAL	PROTEIN (g)	CARBS (g)	FAT (g)	MASS (g)

Paragraph Summary

(write in space below)

Astronaut Energy Needs

Student Activity (continued)

ONE DAY MENU (FEMALE ASTRONAUT)

BMR: _____ kcal

DAILY ENERGY NEEDS: _____ kcal

Breakfast

FOOD ITEM	KCAL	PROTEIN (g)	CARBS (g)	FAT (g)	MASS (g)

Lunch

FOOD ITEM	KCAL	PROTEIN (g)	CARBS (g)	FAT (g)	MASS (g)

Astronaut Energy Needs

Student Activity (continued)

ONE DAY MENU (FEMALE ASTRONAUT)

Snack

FOOD ITEM	KCAL	PROTEIN (g)	CARBS (g)	FAT (g)	MASS (g)

Dinner

FOOD ITEM	KCAL	PROTEIN (g)	CARBS (g)	FAT (g)	MASS (g)

Paragraph Summary

(write in space below)

Appendix A International Space Station Standard Menu Nutritional Data

Product Name	Mass	Kcals	Pro	CHO	Fat	Sat Fat	Na	K	Mg	Fe	Zn	Ca	P	Fiber
Almonds Миндаль	45 (NF) (NF)	243	11	11	20.00	1.80	1.67	343	131	1.9	1.5	126	223	6.5
Apple Cider Яблочный сок	28.7 (B) (H)	112.5	0.04	28	0.00	0.00	26.6	2.9	0.8	0	0	72	32	0
Apples with Spice Яблоки со специями	143 (T) (T/O)	137.28	0.4	35.42	0.00	0.00	151.29	133.56	3.56	0.31	0.13	6.05	8.37	1.64
Applesauce Яблочное пюре	128 (T) (T/O)	132	0.13	34	0.05	0.00	9.22	61	2.8	0.1	0	4.6	7	1.5
Apricot Cobbler Абрикосовый пирог	170 (T) (T/O)	330	2.8	66	7.30	3.00	79	287	12	0.61	0.24	21	36	2.7
Asparagus Спаржа	8.4 (R) (C/P)	22	3	4	0.16	0.00	0.9	263	14.5	0.48	0.68	34	66	1.8
Baked Beans Фасоль запеченная	142 (T) (T/O)	158	7	37	0.65	0.00	298	293	34	2.1	1.7	80	76	6
Banana Pudding Банановый пудинг	114 (R) (C/P)	124	2	27	0.80	0.00	111	98	6	0	0	61	48	0
Barbecued Beef Brisket Грудинка в соусе барбекю	118 (T) (C/O)	231	29	14	6.60	2.42	514	465	28	2.8	5.31	12	215	0
Beef Fajitas Говьяжья фахита	125 (T) (C/O)	187	31	8	4.80	2.00	841	500	38	2.9	4	23	238	3
Beef Pattie Говьяжья котлета	24 (R) (C/P)	89.4	13.9	1	3.30	1.70	272	232.6	14.1	1.9	3	2.9	119.7	0
Beef Steak Бифтекс	100 (T) (C/O)	208	27	1	10.86	4.70	492.3	416	26	2.98	6.32	5.4	337.5	0
Beef Stew Тушеная говядина	198 (T) (T/O)	150.5	19.6	12.3	4.00	1.70	416.2	482	28	1.9	4.69	18.8	165	2.9
Beef Tips w/ Mushrooms Кусочки говядины с грибами	138 (T) (C/O)	182.2	30.9	7.1	5.20	2.20	419.9	343.9	28.7	4.5	5.1	35.1	209.7	4.3
Berry Medley Ассорти из ягод	31 (R) (C/P)	105	1	27	0.00	0.00	1.1	165	17	0.53	0.17	26	23	2.3
Black Beans Черная фасоль	170 (T) (T/O)	114	9	26	0.66	0.00	271	635	66	2.8	1.05	72	173	8
Blueberry Raspberry Yogurt Голубично-малиновый йогурт	140 (T) (T/O)	120	3.5	26	0.24	0.00	42	162	12	0	0	109	88	0
Bran Chex Хлопья из отрубей	40 (R) (C/P)	135	5	31	0.19	0.00	246	276	53	12	3.5	193	192	3.2
Bread Pudding Запеканка из хлеба	170 (T) (T/O)	219	8.8	47	0.10	0.00	226	197	21	1.26	0.7	90	91	1.1
Breakfast Sausage Links Маленькие сосиски	70 (T) (C/O)	155	11.71	4.7	9.90	3.78	614.6	209.37	14.28	0.78	1.62	8.61	116	0
Brossoli au Gratin Брокколи с сыром	30 (R) (C/P)	124	4.8	14	7.00	4.00	740.4	370	22.5	0.35	0.93	120.5	432	3.6

Product Name	Mass	Kcals	Pro	CHO	Fat	Sat Fat	Na	K	Mg	Fe	Zn	Ca	P	Fiber
Brown Rice Шелушёный (коричневый) рис	(1) (г/о)	121	3	37	0.86	0.00	62	127	49	0.7	0.87	10	125	1.8
Brownie Шокол. пирожн. с орех.	(NF) (НФ)	61	268	2	41	10.94	116	86	20	2	0.4	14.9	69	1.08
Butter Cookies Масляное печенье	(NF) (НФ)	34	150	2	22	6.00	59	41	4.2	1	0	6	41	0.54
Butterscotch Pudding Пудинг с сиропом из сах.	(1) (г/о)	114	123	2	27.3	0.82	131.3	105	6	0.05	0.23	72.5	53	0.57
Candied Yams Сладкий картофель	(1) (г/о)	170	129	0.92	32	0.56	264.9	276.4	10.9	0.56	0.24	20.6	21.8	2.2
Sandy Coated Almonds Миндаль глазированный	(NF) (НФ)	45	230	4	27	12.00	18	162	50	0.8	0.8	68	97	1.5
Sandy Coated Chocolates Шокол. конф. глазуров.	(NF) (НФ)	30	141	1.5	22	5.60	18.3	95	18	0.3	0.5	40	48	0.81
Sandy Coated Peanuts Арахис глазированный	(NF) (НФ)	45	228	5	27	12.00	20	173	44	0.76	0.89	42	85	1.4
Caribbean Chicken	(R) (с/р)	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0
Carrot Coins Морковь нарезанная	(1) (г/о)	127	42.5	1.2	11.6	0.53	80	211.3	15.2	0.3	0.2	37	47.1	3.3
Cashews Грехи кешью	(NF) (НФ)	45	265	10	13	20.00	4.8	324	112	2.5	2.7	16	208	1.5
Sauflflower w/ Cheese Цветная капуста с сыром	(R) (с/р)	16	55	2.6	9	2.30	473	263	16	0.44	0.32	50.5	113	2.7
Cheddar Cheese Spread Паста из сыра чеддер	(1) (г/о)	42.5	178	5.13	1.53	16.80	704.8	23	6.3	0.15	0.8	165	309	0
Cheese Grits Капа из кукурузной муки с сыр	(1) (г/о)	142	121	6	20	2.40	257	130	14	0.21	0.7	214	219	1.4
Cheese Tortellini Вареники по-итальянски	(1) (г/о)	227	216	10	46	2.25	487	466	49	2	1.2	192	198	7.72
Cherry Blueberry Cobbler Пирог из вишни и черники	(1) (г/о)	170	306	2	58	9.35	139.06	257	16	0.66	0.43	58	98	4.5
Cherry Drink w/ A/S Вишн. напит. с заменит. сах.	(B) (Н)	1.1	3.94	0.05	0.94	0.00	3.94	4.3	0.29	0.03	0.004	22.78	9.94	0
Chicken Consomme Куриное консоме	(B) (Н)	6.7	14	0.13	2.4	0.40	1399	14	8	0.001	0	79	8	0
Chicken Fajitas Курица fajita	(1) (г/о)	142	168.9	27.4	9.1	4.10	487.4	550.2	41	0.7	0.8	18.1	262	3.4
Chicken in Pouches	(1) (г/о)	85	90	20	0	1.50	260	0	0	0	0	0	0	0
Chicken Noodle Soup Куриный суп с вермишелью	(1) (г/о)	227	134	17.4	14.8	1.36	345.7	295	29	1	2.8	35	139	1.66
Chicken Teriyaki Цыпленок "терияки"	(1) (с/о)	120	150	27	8	1.00	1140	540	48	0.64	1	21	274	0

Product Name	Mass	Kcals	Pro	CHO	Fat	Sat Fat	Na	K	Mg	Fe	Zn	Ca	P	Fiber
Chicken w/ Corn & Black Beans Курица с кукурузой и черной фасолью	170 (T) (T/O)	127.5	14.3	18	1.84	0.00	212	459.3	40	1.45	0.7	18.9	145.5	4.5
Chicken w/ Peanut Sauce Курица с соусом из арахиса	198 (T) (T/O)	214	25	18	5.56	3.00	393.2	530	52	1.4	1.05	42	275	2.1
Chicken-Pineapple Salad Салат куриный с ананасом	28.4 (R) (C/P)	128.1	15.5	5.6	5.20	0.90	136.7	272.4	27.6	0.4	0.9	17.3	138	0.8
Chirotle Snack Bread Хлебцы с острыми перцем	57 (NF) (HF)	191.5	4.6	33.4	5.10	1.20	379	115	22	2.2	0.51	183	135	1.64
Chocolate Breakfast Drink Молочный коктейль с шокол.	33.7 (B) (H)	120	6.3	24	0.40	0.00	170.3	441.1	93	4.2	3	242.2	212.1	1.3
Chocolate Pudding Шоколадный пудинг	114 (T) (T/O)	124	2.3	27	1.00	0.00	117	163	14	0.6	0.3	61	58	0.8
Chocolate Pudding Cake Шоколадный кекс	134 (T) (T/O)	319	5.6	57	10.00	6.19	171.1	383	75	6.39	1.17	122	183	6.27
Citrus Fruit Salad Цитрусово-Фруктовый Салат	142 (T) (T/O)	70	0.81	17	0.14	0.00	6.8	175	9.4	0.13	0.2	21.6	17	0.98
Сосоа Какао	50.5 (B) (H)	165.6	2.7	43.9	1.10	0.55	152.2	523	36.7	3.1	0.3	51.3	208.5	7.6
Сорт Кукуруза	37 (R) (C/P)	137	4.2	27	3.00	0.70	189	340	31	0.61	0.9	8.7	110	3.7
Сombread Dressing Кукурузная начинка	50 (R) (C/P)	195	6.7	35	4.60	2.60	547.8	271	32	1.7	1.1	153	146	3.2
Сomflakes Кукурузные хлопья	40 (R) (C/P)	147.6	4.5	32.8	0.05	0.00	210.7	172.6	14.7	8.1	0.4	110.7	102.9	0.5
Сrackers Крекеры	18 (NF) (HF)	82	1.3	12	3.20	0.50	152.2	19	3.8	0.56	0.11	7	36	0.3
Сranapple Dessert Клюквенно-яблочный десерт	177 (T) (T/O)	144	2.42	29	4.10	1.00	43.4	183	30	0.4	0.4	37	58	4.8
Сranberry Peach Drink w/ A/S Клюквенно-персиковый напиток с зам.	1.2 (B) (H)	4	0.03	1	0.00	0.00	36	15	1.6	0	0	1.6	0.06	0
Сrawfish Etouffee Обжаренные тушеные раки	198 (T) (T/O)	113	6.4	18	2.34	0.00	380.8	302.15	21	2.63	0.85	58	106	1.6
Сream of Mushroom Soup Протертый грибной суп	27 (R) (C/P)	141	2.9	12	10.00	6.40	852.7	139	11	0.42	0.35	62	73	0.7
Сreated Spinach Протертый шпинат	18 (R) (C/P)	65	3.3	10	2.00	1.20	544	333	61	0.61	0.39	139	76	1.5
Сurry Sauce w/ Vegetables Овощи и соус с приправой карри	184 (T) (T/O)	107	1.5	23	2.20	2.00	287	504	25	1.3	0.35	35	71	3
Decaf. Coffee Black Черный кофе без кофеина	2.5 (B) (H)	8	0.4	1.8	0.00	0.00	0.74	86	4	0	0	4	9	0.33
Decaf. Coffee w/ A/S Кофе без кофеина с зам. сах.	3 (B) (H)	11	0	2	0.00	0.00	3	82	10	0.1	0	4	9	0
Decaf. Coffee w/ C & A/S Кофе б/кофеина со слив. и зам.сах.	6.5 (B) (H)	30	0.1	4	1.10		7	111	10	0.1	0	5	22	0

Product Name	Mass	Kcals	Pro	CHO	Fat	Sat Fat	Na	K	Mg	Fe	Zn	Ca	P	Fiber
Decaf. Coffee w/ C & S Кофе б/ кофеина со слив. и сах.	17	72	0.4	4	1.10		5	96	10	0	0.1	5	16	0
Decaf. Coffee w/ Cream Кофе без кофеина со сливками	6	28	0.1	4	1.10		7	111	10	0.1	0	5	22	0
Decaf. Coffee w/ Sugar Кофе без кофеина с сахаром	13.5	53	0	14	0.00	0.00	3	82	10	0.1	0	4	9	0
Dried Apricots Сушеные абрикосы (курага)	62	156	3.7	38	0.16	0.00	13	760	27	1.4	0.41	26	63	3.3
Dried Peaches Сушеные персики	62	131	2	35	0.15	0.00	2	608	24	0.65	0	14	55	4.5
Dried Pears Сушеные груши	62	138	2	37	0.00	0.00	6.4	574	25	0.8	0.32	16	57	5
Drinking Water Container Контейнер для питьевой воды							0							
Fiesta Chicken Цыпленок флеста	227	220	23	16	8.80	3.00	700.8	575	36	0.68	1.4	128	285	3.2
Fruit Cocktail Фруктовая смесь	128	81	0	21	0.00	0.00	35	109	6	0	0	6	11	1
Granola Хлопья гранола	80	313	10.42	58	6.00	0.74	173	405	79	2	2.2	140	309	4
Granola Bar Палочка гранола	28	120	1.4	20	4.20	2.80	51	65	15	0.37	0.7	12	50	0.81
Granola w/ Blueberries Гранола с черникой	57	230	7	39	7.30	4.23	318.5	318.5	48	1.12	1.2	108	190	4.6
Granola w/ Raisins Гранола с изюмом	80	315	10	57	7.00	0.90	181	434	80	2.1	2	144	317	3.6
Grape Drink Виноградный напиток	17	66.3	0	16.6	0.00	0.00	0.2	0	0.4	0	0	28.8	13	0
Grape Drink w/ A/S Виноградный напиток с зам.сах	1.2	4	0.05	1	0.00	0.00	7.6	4	0.06	0	0	10	6	0
Grape Jelly Виноградное желе	28	75	0	19	0.00	0.00	5	5.5	2	0	0	1.6	1.8	0.14
Grapefruit Drink Грейпфрутовый напиток	35	119.7	1.5	28.4	0.01	0.00	11.8	376.8	21.6	0.3	0.1	24.5	38	0
Green Beans w/ Mushrooms Зеленая фасоль с грибами	10	22	1.8	7	0.20	0.00	178	79	17	0.6	0.3	40	27	3.2
Green Tea Чай зеленый	2	0	0	0	0.00	0.00	0	1	0.03	0	0	0.01	0.03	0
Green Tea w/ Sugar Чай зеленый с сахаром	18	71	0	18	0.00	0.00	1.6	12	0.7	0	0	0.56	0.97	0
Grilled Pork Chop Свинная отбивная на гриле	142	261	32.5	3.7	13.00	5.00	281	530.5	31.1	0.74	0	10.5	225	0
Grits w/ Butter Каша из кукур. муки с маслом	34.5	117	2.3	27	0.30	0.00	509.2	56	11	13	0.22	127	36	0.8

Product Name	Mass	Kcals	Pro	CHO	Fat	Sat Fat	Na	K	Mg	Fe	Zn	Ca	P	Fiber
Homestyle Potatoes Картофель по-домашнему	(T) (T/O)	142	3.5	30	6.00	1.50	225	656	37	0.84	0.51	25	77	7
Hot and Sour Soup Острокислый суп	(T) (T/O)	170	54.4	7.8	9.8	0.99	299.5	184	22.5	0.97	0.41	25	64	0.99
Italian Vegetables Овощи по-итальянски	(R) (C/P)	20	92	2.1	10.14	5.93	250	141.4	16.5	0.67	0.3	22.34	36	2.6
Kona Coffee Black Черный кофе Кона	(B) (H)	1.5	4.3	0.2	1	0.00	0.2	61.4	5.3	0.1	0	2.4	5	0.2
Kona Coffee w/ A/S Кофе Кона с зам. сах.	(B) (H)	2	6	0.3	1.4	0.00	0.71	63	4.9	0	0	2	4	0.25
Kona Coffee w/ C & A/S Кофе Кона со слив. и зам. сах.	(B) (H)	5.5	18	0.3	4.6	0.00	3.8	83	6	0	0	2.7	19	0.6
Kona Coffee w/ C&S Кофе Кона со сливками и сах.	(B) (H)	16	68	0.1	14	1.10	9	93	6	0.1	0	3	20	0
Kona Coffee w/ Cream Кофе Кона со сливками	(B) (H)	5	16	0.3	4	0.00	3	99	8	0	0	3	18	0.7
Kona Coffee w/ Sugar Кофе Кона с сахаром	(B) (H)	12.5	49	0	12	0.00	5	64	5	0.1	0	2	7	0
Lasagna with Meat Лазанья с мясом	(T) (T/O)	227	202	20	31.7	5.40	788	576	53	1.3	3.1	204	277	13
Lemon Curd Cake Пирожное с лимонной помадкой	(T) (T/O)	130	460	4	76	16.20	243	82	10	1.5	0.4	137	238	1.33
Lemon Meringue Pudding Лимонно-меренговый пуддинг	(T) (T/O)	117	140	2	28	2.00	140							0
Lemonade Лимонад	(B) (H)	21	81	0	20	0.00	30	1.6	35	0.01	0.03	3.3	24	0
Lemonade w/ A/S Лимонад с зам. сах.	(B) (H)	1.9	7	0.04	1.7	0.00	14	55	16	0	0	2.5	1.44	0
Lemon-Lime Drink Лимонный напиток	(B) (H)	16	62	0	16	0.00	132	36	0	0	0	0.42	27	0
Macadamia Nuts Гавайские орехи макадамия	(NF) (HF)	45	308	3.6	11	29.00	4.14	181	51	0.75	0.59	19	77	3
Masaroni & Cheese R Макаронн с сыром	(R) (C/P)	40	194	8.5	20	9.23	643.6	101	20	0.5	1.1	152	135	1.23
Mango Peach Smoothie Фруктовый напиток из манго и персика	(B) (H)	50	200	1.3	46	1.20	57	136	3.8	0.25	0.1	66	62	0
Maple Muffin Top Кекс, пропитанный кленовым сиропом	(NF) (HF)	62	250	3	30	13.00	230	0	0	0	0	0	0	0
Mashed Potatoes Картофельное пюре	(R) (C/P)	22	71	2	16	0.90	0.23	362	16	0.34	0	8.3	43	2.1
Meatloaf Мясной рулет	(T) (T/O)	119	177.3	17.3	16.4	4.70	2.20	698.6	32.4	2.7	3.1	22.5	173	0
Mexican Scrambled Eggs Омлет по-мексикански	(R) (C/P)	36	202	14	7	13.50	6.55	345.7	21	1.5	1.5	144	251	0

Product Name	Mass	Kcals	Pro	CHO	Fat	Sat Fat	Na	K	Mg	Fe	Zn	Ca	P	Fiber
Milk	(B)	0	0	0	0.00	0.00	110	0	0	0	0	0	0	0
Молоко коровье	(H)													
Minstreone Soup	(T)	84	3.09	16.3	2.00	0.00	251.3	462.9	31.37	1.41	0.43	53.8	65	2.6
Суп минестрони	(T/O)													
Mixed Vegetables	(T)	57	3.4	12.5	1.30	0.00	47	249	26	0.97	0.5	25	62	4.6
Овощная смесь	(T/O)													
Noodles & Chicken	(R)	105	4.2	18.9	1.70	0.50	552.7	98	11.3	0.5	0.35	12	60.5	0.83
Лапша с курицей	(C/P)													
Nut & Fruit Granola Bar	(NF)	135	2.9	24	3.90	0.40	90.23	90	29	0.63	0.6	204	69	2
Панкеа гранола с орехами и фруктами	(HF)													
Oatmeal w/ Brown Sugar	(R)	170	5	35	1.80	0.40	233	178	44	3.8	0.89	134	157	1.7
Овсяная каша с нераф. сах.	(C/P)													
Oatmeal w/ Raisins & Spice	(R)	162	3.2	38	0.90	0.00	307	185	32	5.7	0.67	146	113	2.5
Овс. каша с изюмом и пряност.	(C/P)													
Orange Drink	(B)	43	0.02	11	0.00	0.00	2.4	2.1	1.5	0	0.14	107.5	51	0
Апельсиновый напиток	(H)													
Orange Drink w/ A/S	(B)	7	0.06	2	0.00	0.00	3.4	80	7.8	0	0	28	15	0
Апельсиновый нап. С зам. Сах.	(H)													
Orange Juice	(B)	123.6	1.6	29.2	0.00	0.00	8.3	438.8	22.8	0.3	0	21.3	36.6	0.8
Апельсиновый сок	(H)													
Orange-Grapefruit Drink	(B)	73	0.5	18	0.00	0.00	25	113	6	0.2	0	18	16	0
Апельсин-грейпфрут. напиток	(H)													
Orange-Mango Drink	(B)	32	0.03	8	0.00	0.00	10	8	1	0	0	159	134	0
Апельсиново-мангов. напиток	(H)													
Orange-Pineapple Drink	(B)	30	0	8	0.00	0.00	10	6	1	0	0	137	115	0.28
Апельсиново-ананас. напиток	(H)													
Pasta w/ Pesto Sauce	(T)	124	7	25	0.50	0.00	337	62	22	1.1	0.8	40	70	2.5
Макаронные изделия в соусе "песто"	(T/O)													
Pasta w/ Shrimp	(R)	135.6	10.5	23	0.74	0.00	581	200	31	0.9	0.83	33	140	1.4
Лапша с креветками	(C/P)													
Peach-Apricot Drink	(B)	104	0	26	0.00	0.00	0.35	1.4	0	0	0	0.81	0.13	0
Персиково-абрикос. напиток	(H)													
Peaches	(T)	75	0.64	20	0.11	0.00	6.9	241	8.34	0.09	0.15	8.1	22.5	2.46
Персики	(T/O)													
Peanut Butter	(T)	205	8	5.5	17.00	4.40	2.4	234	69	0.66	1.2	15	152	1.3
Арахисовое масло	(T/O)													
Peanuts	(NF)	274	13	7.5	22.00	4.30	0.54	325	88	0.68	1.3	30	174	2.8
Арахис	(HF)													
Pears	(T)	61	0.24	15	0.12	0.00	3.5	46	5	0.4	0.05	5	9.6	0.6
Груши	(T/O)													
Pineapple	(T)	91	0.5	23.8	0.04	0.00	63.5	156	18	0.3	0.2	18	10	1.7
Ананас	(T/O)													
Pineapple Drink	(B)	17	0.06	4	0.06	0.00	5.8	7.5	0.63	0.09	0	111	100	0
Ананасовый напиток	(H)													

Product Name	Mass	Kcals	Pro	CHO	Fat	Sat Fat	Na	K	Mg	Fe	Zn	Ca	P	Fiber	
Potato Medley Картофельная смесь	(T) (T/O)	142	2.4	30.2	2.80	1.00	73.3	566.6	26.1	0.7	1.72	21.6	95	4.09	
Potato Soup Картофельный суп	(T) (T/O)	234	3.9	22	3.50	2.10	325.5	426	25	0.35	0.56	81	111	2.6	
Potatoes au Gratin Картофель с сыром	(R) (C/P)	30	4	16	7.00	2.50	606	187	16	0	0.61	109	126	1.2	
Red Beans & Rice Красная фасоль с рисом	(T) (T/O)	227	10	36	0.45	0.00	292.4	624	64	3.34	1.43	61	191	7.9	
Rhubarb Applesauce Яблочно-Ревеневое Пюре	(T) (T/O)	142	0.64	15.5	0.23	0.00	6	197	7.34	0.23	0.26	35.5	16.9	3.15	
Rice & Chicken Рис с курицей	(R) (C/P)	34	154	3.5	22	5.80	1.00	595	40	6.2	0.2	8	42	0.41	
Rice Pilaf Плов	(R) (C/P)	25	103	2	1.80	1.20	369	48	8.5	0.21	0.27	20	37	0.5	
Rice Pudding Рисовый пуддинг	(R) (C/P)	38.5	142	3	31	0.80	95	189	11	0.06	0.53	67	59	0.93	
Rice w/ Butter Рис с маслом	(T) (T/O)	115	168	3.2	34	2.70	1.40	180	20	3.3	0.3	5.8	27	1.2	
Salmon Лосось	(T) (T/O)	74	85	16	1.74	1.50	372	255	26	0.43	0.4	22	173	0	
Sausage Patic Котлета из сосисочного фарша	(R) (C/P)	18	127	4.5	12.00	4.20	292	73	6	0.28	0.51	6	81	0.09	
Scrambled Eggs Омлет	(R) (C/P)	34.5	183	13	6	12.00	6.00	333.3	254	20	1.2	1.4	128	225	0.91
Seafood Gumbo Суп из стручков с морскими продуктами	(T) (T/O)	198	129	13	10.55	4.50	293	471	24	1.45	1.72	55	162	1.92	
Seasoned Scrambled Eggs Омлет с приправами	(R) (C/P)	35	187	13	6.3	13.00	401.6	264	33	1.1	1.2	147	254	0.8	
Shortbread Cookies Песочное печенье	(NF) (HF)	29	139	1.4	20	6.00	1.60	111	25	3.7	1.1	3	17	0.4	
Shrimp Cocktail Закуска из креветок	(R) (C/P)	35	117.95	14.14	13.74	0.70	705.25	217.32	26.41	0.12	1.1	50.75	152.67	1.4	
Shrimp Fried Rice Рис с жареными креветками	(R) (C/P)	32	114.56	11.54	15.91	0.54	413.4	76.19	16.69	0.25	1.19	28.93	191.2	0.66	
Smoked Turkey Копченая индейка	(T) (C/O)	90	108	19	0.44	3.00	757	248	15	0.64	1	4	211	0	
Southwestern Corn Кукуруза по-юго-западному	(T) (T/O)	170	124.1	3.98	26.33	1.48	245.82	343.4	27.66	0.53	0.71	15.81	103.87	2.65	
Split Pea Soup Суп из лугового гороха	(T) (T/O)	227	180	14	33	1.23	283	515	51	3.02	1.56	30	235	4.65	
Strawberries Клубника	(R) (C/P)	28	89	1	23	0.00	7	204	18	0.35	0.14	28	33	1.6	
Strawberry Drink Клубничный напиток	(B) (H)	5.6	19	0	4.6	0.00	13	9	0.94	0.14	0	140	136	0	

Product Name	Mass	Kcals	Pro	CHO	Fat	Sat Fat	Na	K	Mg	Fe	Zn	Ca	P	Fiber
Sweet & Sour Chicken Курица в кисло-сладком соусе	(R) (C/P)	36	144	21	11	2.00	0.30	263	23	0.1	0.7	5	159	0.3
Sweet & Sour Pork Свинина в кисло-сладком соусе	(P) (T/O)	198	178	8.2	30.7	3.40	0.90	312	18	1.1	1.2	20	121	2.1
Tea Чай	(B) (H)	1	2.57	0.2	0.63	0.00	0.00	73.5	4.16	0	0	1.3	2.7	0.1
Tea w/ Cream & Sugar Чай со сливками и сахаром	(B) (H)	10.7	41	0.19	10	0.05	0.00	93	4.2	0	0	1.1	8	0.15
Tea w/ Lemon & A/S Чай с лимоном и зам. сах.	(B) (H)	2	7	0.1	1.7	0.00	0.00	51	3.5	0.1	0.01	0.5	0.6	0
Tea w/ Lemon & Sugar Чай с лимоном и сахаром	(B) (H)	21	84	0	21	0.00	0.00	57	1.5	0	0	12	6	0
Tea w/ Sugar Чай с сахаром	(B) (H)	13.5	53	0.15	13	0.00	0.00	60	3	0	0	1.2	2.3	0
Tea with A/S Чай с заменителем сахара	(B) (H)	1.5	5	0.2	1	0.00	0.00	73	4	0	0	1	3	0
Tea with Cream Чай со сливками	(B) (H)	2.7	22	0.3	3	1.10	0	88	4	0	0	1	9	0
Tea with Lemon Чай с лимоном	(B) (H)	1.4	5	0.04	1.2	0.00	0.00	32	1	0	0	0.5	0.7	0
Tenuyaki Beef Steak Бифтекс в соусе терияки	(P) (C/O)	120	234	39	4	6.80	2.70	863	46	3.4	6	12	313	0
Tenuyaki Chicken Курица в соусе терияки	(R) (C/P)	37	142	23	9	1.80	0.90	977.2	26	0.42	0.7	18	177.5	0.23
Tenuyaki Vegetables Гвощи в соусе терияки	(R) (C/P)	18.5	47	3.7	11	0.12	0.00	633	28	0.63	0.5	45	71	3
Tofu w/ Hoisin Sauce Соевый творог с соусом "хойсин"	(P) (T/O)	142	125	12	17.8	1.50	0.00	305.2	45.4	2.1	0.87	65.6	133.6	1.8
Tofu w/ Hot Mustard Sauce Соевый творог с острыми горчичным	(P) (T/O)	135	111	11	15	1.40	0.00	197	312	1.1	0.93	85	128	1.8
Tomato Basil Soup Томатный суп с базиликом	(P) (T/O)	170	54.4	2.4	8.9	1.90	0.00	535.3	451.9	27.9	0.8	76.8	65.3	2.1
Tomatoes & Artichokes Помидоры с артишоками	(R) (C/P)	15	44.7	2.1	8.84	1.30	0.24	340.5	265	31	2.11	39.74	55	2.6
Tomatoes & Eggplant Помидоры и баклажаны	(P) (T/O)	170	65	1.7	10	3.80	0.66	582	23	0.08	0.22	35	44	4
Tortillas Лепешка тортия	(N/P) (H/P)	60	189	5	34	4.00	1.00	421	14	2.5	0.46	74	62	1
Trail Mix Сухофрукты и орехи	(M) (C/B)	50	215	4	33	8.60	2.80	29	126	33	0.8	18	56	2
Tropical Fruit Salad Салат из тропических фруктов	(P) (T/O)	142	81	0.37	21	0.08	0.00	12	85	9	0.21	37	6.5	1.9
Tropical Punch Пунш "тропический"	(B) (H)	25	97	0	24	0.00	0.00	1.7	0.95	45.5	0.1	44	19	0

Product Name	Mass	Kcals	Pro	CHO	Fat	Sat Fat	Na	K	Mg	Fe	Zn	Ca	P	Fiber
Tropical Punch w/ A/S	1.5	5	0.06	1.26	0.00	0.00	13	20	0.29	0.03	0	27	15	0
Пунч "тропический" с замсах.	(B)	(H)												
Tuna	74	79	17	2	0.00	0.00	118	275	27	0	0	3	177	0
Тунец	(T)	(T/O)												
Tuna Salad Spread	85	100	13	4	3.00	1.00	410	170			0			1
Паплет из тунца	(T)	(T/O)												
Turkey Tetrazzini	27	117	8.6	12	4.20	1.00	367	183	16	0.56	0.95	47	100	0.72
Индянка с соусом Тетраззини	(R)	(C/P)												
Vanilla Breakfast Drink	38.8	136	7.5	27	0.00	0.00	168.3	77	79	3.7	3	681	242	0.3
Молочный коктейль с ванилью	(B)	(H)												
Vanilla Pudding	114	128	2	29	0.63	0.00	156	109	6	0	0	68	52	0
Ванильный пудинг	(T)	(T/O)												
Vegetable Quiche	50	271	15.5	13	18.00	11.50	462	418	31	0.94	2.5	339	321.5	1.3
Овощной пирог (квиз)	(R)	(C/P)												
Vegetarian Vegetable Soup	227	95	2	23	0.30	0.00	389	363	22	0.93	0.38	29	55	1.7
Вегетарианский овощной суп	(T)	(T/O)												
Waffles	43	208	3	23	12.00	2.60	100	53	6	2	0	18	37	0.5
Вафлы	(NF)	(HF)												
Wheat Flat Bread	57	194	5	33	5.00	1.00	381	86	22	2	0.4	160	156	1.6
Лаваш пшеничный	(NF)	(HF)												
Yogurt Covered Granola Bar	35	159	3.9	20	7.50	2.30	125.5	111	39	0.7	0.6	46	78.5	3
Плитка гранола с йогуртовым покрытием	(NF)	(HF)												

FOOD TYPES:

NF - Natural Form
 B - Beverage
 T - Thermostabilized
 R - Rehydratable
 I - Irradiated
 IM - Intermediate Moisture
 FF- Fresh Food

Mass – in grams (g)
 Kcals – energy, in kilocalories
 Pro – protein, in grams (g)
 CHO – carbohydrates, in grams (g)
 Fat – in grams (g)
 Sat Fat – saturated fat, in grams (g)
 Na – sodium, in milligrams (mg)
 K – potassium, in milligrams (mg)
 Mg – magnesium, in milligrams (mg)
 Fe – iron, in milligrams (mg)
 Zn – zinc, in milligrams (mg)
 Ca – calcium, in milligrams (mg)
 P – phosphorous, in milligrams (mg)
 Fiber – in grams