

According to http://caloriesperhour.com/ the following foods have these calories etc. for the given serving size.

	Calories	Protei	Protein Fa		s Fiber	r Sodium					
York Peppermint Pattie [Her	rshey]										
1 pattie, 1.4 oz=39 g	160.0	L	3.0	32.0	L	10.0					
3 Musketeers [M&M Mars]											
1 bar, 2.13 oz=60.4 g	260.0	2.0	8.0	46.0	1.0	110.0					
Zone Bar, Chocolate Peanut Butter [ZonePerfect]											
1 bar, 1.76 oz=50 g	210.0	16.0	7.0	21.0	Ц	360.0					
Wallies, chocolate chip [Ke	200 0	1 0	7 0	22.0	1 0	290 0					
Z Wallies, Z.S 02-70 g Twizzlerg Cherry Dull-n-De	200.0 200.0 [96	ndiegl	7.0	32.0	1.0	380.0					
1  piece 1 2  oz= 33  g		1 0	0 0	25 0	М	85 0					
Tostitos [Frito Lav]	100.0	1.0	0.0	23.0		00.0					
6 chips, 1 oz=28 q	130.0	2.0	6.0	19.0	1.0	80.0					
Thousand Island Salad Dressing [Kraft]											
2 tbsp or 1.1 oz=30 g	70.0	0.0	6.0	6.0	0.0	310.0					
Snickers [M&M Mars]											
1 bar, 2.07 oz=58.7 g	280.0	4.0	14.0	35.0	1.0	140.0					
Skittles [Mars]											
1 bar, 2.17 oz=61.5 g	240.0	0.0	2.5	54.0	0.0	10.0					
Ruffles, Sour Cream and On	ion [Frito ]	Lay]									
11 chips, 1 oz=28 g	160.0	2.0	10.0	14.0	1.0	190.0					
Redvines, Jumbo Red Twists	[American	Licorio	e]								
2 twists, 1.4 oz=40 g											
	140.0	1.0	0.0	34.0	Ν	20.0					
Pretzels [Frito Lay Rold Go	old]										
9 pretzels, 1 oz=28 g	110.0	2.0	1.0	23.0	1.0	560.0					
Potato Crisps, Barbeque, ba	aked [Frito	Lay	2 0	22.0	2 0	010 0					
II chips, I oz=28 g	120.0	2.0	3.0	22.0	2.0	210.0					
Popcorn, microwave, Butter	LOLATING K	'S] T	2 0	1 0	т	EE O					
Depart oil popped white	35.0	Ц	2.0	4.0	Ц	55.0					
1  cup=237  m  or  0.39	55 0	1 0	3 1	63	1 1	97 2					
Popcorn air-popped white	55.0	1.0	5.1	0.5	1.1	51.2					
1 cup=237 ml	30 6	1 0	03	62	1 2	03					
Pop Tarts, Brown Sugar Cinr	amon. Fros	ted [Ke	lloggl	0.2	1.0	0.5					
1 Pop Tart, 1.8 oz=50 g	210.0	3.0	7.0	34.0	1.0	180.0					
Pistachio Nuts, raw in shel	lls [Trader	Joe'sl		5110	1.0	100.0					
1/2 cup=118 ml	180.0	6.0	13.0	9.0	3.0	15.0					
Pizza, Cheese [DiGiorno]											
1/6 pizza, 4.7 oz=133 g	320.0	16.0	11.0	40.0	3.0	820.0					
Pecan Pie											
1/6 of 8"=20.3 cm pie	452.0	4.5	20.9	64.6	4.0	479.1					
Oreo Cookies [Nabisco]											
3 cookies, 1.2 oz=34 g	160.0	2.0	7.0	24.0	1.0	210.0					
Pancake or Waffle Mix [Bett	ty Crocker]										
1/3 cup=79 ml or	200.0	5.0	2.5	39.0	1.0	540.0					
Oatmeal, Instant, Maple & H	Brown Sugar	- pack	tet [Qua	aker]							
1 packet, without milk	160.0	4.0	2.0	32.0	3.0	260.0					
Nilla Wafers [Nabisco]											
8 wafers, 1.1 oz=30 g	140.0	1.0	6.0	21.0	0.0	115.0					
Muffin, Blueberry [F.G. Mey	yers]										
1/2 multin, 2.3 oz=64 g	240.0	3.0	12.0	31.0	1.0	240.0					
M&M'S [M&M Mars]	240 0	2 0	10 0	24 0	1 0	20.0					
I package, 1.69 02	240.0	2.0	10.0	34.0	1.0	30.0					
Jerry Beans, Various Havon	IND O	erry]	0 0	27 0	NT	10 0					
Ttalian Galad Drogging [Var	140.0 5f+1	0.0	0.0	51.0	IN	T0.0					
2 then or 1 1 or-21 a	70 0	0 0	6 0	3 0	0 0	310 0					
Herchev Bar Milk Chocolat	, u.u a with Almo	ਹ.ਹ nde ਧਿ	v.v	5.0	0.0						
1 har 1 45 $\sigma = 41 \sigma$	230 0	5 0	14 0	20 0	1 0	35 0					
Granola Bars, Chocolate Chi	ip [Ouaker]	5.0	0	20.0	±.0	55.0					
, 0110001000 011	+ • × ······										

1 bar, 1 oz=28 g	120.0	2.0	4.0	21.0	1.0	70.0
Goldfish Crackers, Cheddar	[Pepper	idge Far	m ]			
55 crackers, 1.1 oz=30 g	150.0	3.0	6.0	19.0	L	250.0
Frosted Flakes [Kellogg]						
3/4 cup without milk	120.0	1.0	0.0	28.0	1.0	150.0
French Toast with Butter						
2 slices, 4.8 oz=135 g	356.4	10.3	18.8	36.0	М	513.0
Doritos [Frito Lay]						
13 chips, 1 oz=28 g	140.0	2.0	7.0	18.0	1.0	120.0
Cup Cakes [Hostess]						
1 cup cake, 1.8 oz=50 g	180.0	2.0	6.0	30.0	1.0	290.0
Coke, Diet [Coca-Cola]						
1 cup=240 ml	0.0	0.0	0.0	0.0	М	30.0
Coke, Coca-Cola Classic [C	oca-Cola	.]				
1 cup=240 ml	100.0	0.0	0.0	27.0	М	35.0
Chips Ahoy Chocolate Chip	Cookies	[Nabisco	]			
3 cookies, 1.1 oz=32 g	160.0	2.0	8.0	21.0	1.0	105.0
Cheerios, Honey Nut [Gener	al Mills	:]				
1 cup without milk	120.0	3.0	1.5	24.0	2.0	270.0
Cheerios [General Mills]						
1 cup without milk	110.0	3.0	2.0	22.0	3.0	210.0
Caesar Salad Dressing [Kra	ft]					
2 tbsp or 1 oz=29 g	110.0	L	11.0	L	0.0	310.0
Apple Jacks [Kellogg]						
1 cup without milk	130.0	1.0	0.5	30.0	1.0	150.0
Almonds, raw [Trader Joe's	]					
1/4 cup	170.0	7.0	15.0	5.0	4.0	0.0
Almond Joy, Peter Paul [He	rshey]					
l package, 1.61 oz=45 g	220.0	2.0	12.0	27.0	2.0	65.0

For different food groups, I want you to store the caloric content into a variable. For example

```
> salad.dressing = c(70, 70, 110)
> names(salad.dressing) = c("thousand","italian","ceasar")
```

The last line assigns names to the numbers. These show up when we type the variable name.

```
> salad.dressing
thousand italian ceasar
70 70 110
```

- 1. Store all the candy amounts in candy
- 2. Store all the chip amounts in chips
- 3. Store all the beverage amounts in beverage
- 4. Store all the junk food amounts in junk. (You can put candy and chips together with c(candy,chips).

The values are numeric data. We can make stem and leaf plots of the data. For example

```
> stem(salad.dressing)
The decimal point is 1 digit(s) to the right of the |
7 | 00
```



8 | 9 | 10 | 11 | 0

1. Make a stem and leaf plot of candy, chips, beverage and junk.

Now make histograms of each.

> hist(salad.dressing)

We can make it so the total area adds to 1 by adding prob=T as an argument.

> hist(salad.dressing, prob=T)

If we do this, then a density estimate can be layered on top of the histogram with

> lines(density(salad.dressing))

The density estimate nicely shows the variation in the data in a manner that is easy to sketch and quick to understand (although the exact calculation is not easy).

1. Make a histogram and density estimate of candy, chips, beverage and junk.

Histograms are good at summarizing data when there is a lot of data. Usually, if we type in data, there isn't so much so a stem and leaf plot or dot plot is a good alternative as we can see all the data. Let's download a big data set, and see that the histogram is then much better.

First, type this exactly as shown, to download the data.

```
> f = "http://www.math.csi.cuny.edu/st/R/Diet.R"
> source(url(f))
```

If it worked you might get a warning, or nothing. An error message means you missed something.

If it all worked, you downloaded a big dataset into a variable diet. Just typing data will flood your screen. We can see pieces of the data set with a few useful commands:

```
> names(diet)
[1] "calories" "protein" "carbs" "total.fat" "sat.fat"
[6] "mono.fat" "poly.fat" "fiber" "alcohol"
> dim(diet)
[1] 235 9
```

The last says there are 235 rows and 9 columns. For each row a person was asked about their food intake the day before. There are 9 columns for answers. This data comes from the NHANES survey conducted by the CDC www.cdc.gov.

To access the data, you need to learn one last trick to use the named variables in the diet dataset. You can "attach" their names using the command attach().



Do the above, then

- 1. Make a histogram of calories with a density estimate. Estimate what percent of people had more than 2200 calories (the recommended amount for a male).
- 2. Make a histogram of total.fat with a density estimate. Estimate the percentage of people who had more than 50 grams of total fat.
- 3. Saturated fat is not good, mono- and poly-unsaturated fat is okay. To make a histogram of percentage of saturated fat is done with

```
hist(sat.fat/total.fat*100)
```

Do the same with polyunsaturated fat (poly.fat).

