

Chapter 5: Statistics

5.2 Histograms and Frequency Polygons

Example: Chilliwack River

River flow rate in June (measured at Vedder Crossing) in m^3/s

1952	102	1982	158
1953	124	1983	121
1954	170	1984	147
1955	188	1985	166
1956	152	1986	124
1957	125	1987	98
1958	104	1988	121
1959	135	1989	125
1960	105	1990	130
1961	184	1991	128
1962	128	1992	72
1963	95	1993	105
1964	189	1994	82
1965	125	1995	94
1966	129	1996	91
1967	213	1997	168
1968	151	1998	136
1969	152	1999	174
1970	129	2000	164
1971	157	2001	96
1972	223	2002	205
1973	107	2003	110
1974	243	2004	103
1975	165	2005	55
1976	141	2006	159
1977	105	2007	144
1978	119	2008	190
1979	88	2009	147
1980	98	2010	116
1981	107	2011	188

Step #1: Find the Range:

Step #2: Choose Even Categories

Step #3: Make Frequency Chart

Source: Environment Canada

<http://www.wsc.ec.gc.ca/applications/H2O/report-eng.cfm?yearb=&yeare=&station=08MH001&report=monthly&year=2009>

Step #4: Draw Histogram or Frequency Chart

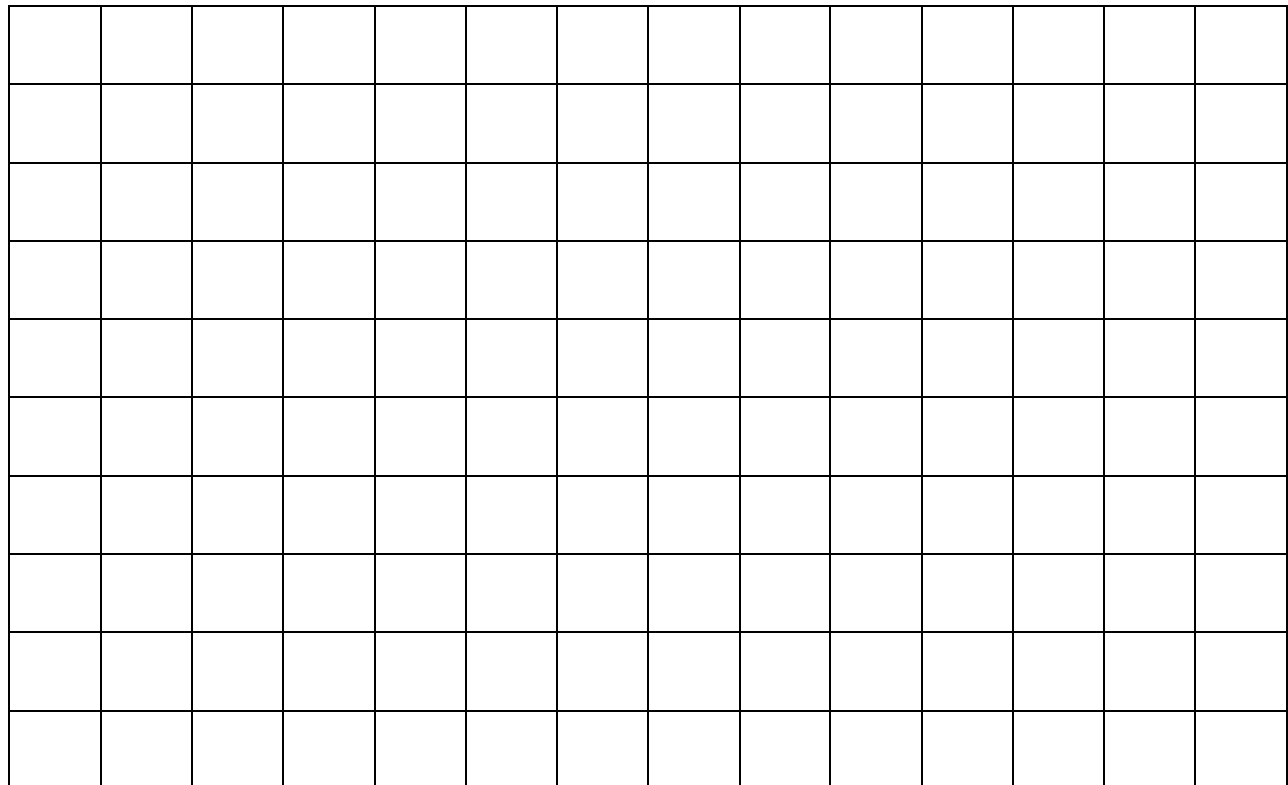
Step #5: Find Mean/Median/Mode

Assignment:

1) Jerry uses the Internet to help him complete his homework. He recorded the time he spent online each day for one month. He grouped the data in a frequency table.

Internet Time (h)	Frequency
0.5-1.0	0
1.0-1.5	4
1.5-2.0	6
2.0-2.5	7
2.5-3.0	8
3.0-3.5	1
3.5-4.0	1
4.0-4.5	1
4.5-5.0	0
5.0-5.5	2
5.5-6.0	1

Use the grid provided to create a frequency polygon representing the data. Describe how the data is distributed.



2) A Macintosh apple orchard has 40 trees with these heights, given in metres.

1.1 1.3 1.4 1.2 1.5 1.7 1.6 1.3
 1.5 2.0 2.1 1.8 1.9 2.3 2.2 2.1
 1.7 2.0 2.2 2.5 2.3 2.4 1.9 1.8
 3.1 3.2 3.3 2.7 2.8 2.6 2.5 2.3
 3.0 2.4 2.7 2.4 2.6 2.8 2.2 2.1

Complete this frequency table to organize the heights into eight equal intervals.

Height (m)	Frequency
1.0-1.3	
1.3-1.6	

Use the grid provided to construct a histogram of the data.

Which range of heights occurs most frequently? _____
 Which occurs least frequently? _____

3) Farooq is an apprentice at a bakery. The times he spends after school at the bakery, in hours, over one month are shown.

2.5 3.0 3.5 4.0 5.0 5.0
 1.5 2.0 3.0 3.0 5.0 6.0
 1.0 2.5 2.5 2.5 4.0 4.0
 3.0 3.0 3.0 2.0 3.5 7.0
 3.0 2.0 2.5 2.5 7.0 8.0

Decide on an interval and make a frequency distribution table.

Height (m)	Frequency

Use the grid provided to construct a histogram of the data.

4) Tamiko works after school at her father’s convenience store. The hours she worked some days after school and on weekends in February are shown.

2.0 2.5 3.0 4.0 2.0 2.5 3.5 4.0
 3.0 2.5 3.0 4.0 1.0 0.5 2.5 3.0
 5.0 7.0 4.5 6.0 3.5 4.0 8.0 7.5

Decide on an interval and make a frequency distribution table.

Hours (h)	Frequency

Use the grid provided to construct a frequency polygon of the data.

Answer Key

