

Week-3

- Frequency Table
- Bar Chart
- Pie Chart
- Frequency Distribution
- Relative Frequency Distribution
- Histogram/ Frequency Polygon
- Cumulative Frequency Distribution

Describing Data with Charts, Tables and Graphs

A	A	В	C	D
1	Age	Profit	Location	Vehicle-Type
2	21	\$1,387	Tionesta	Sedan
3	23	\$1,754	Sheffield	SUV
4	24	\$1,817	Sheffield	Hybrid
5	25	\$1,040	Sheffield	Compact
6	26	\$1,273	Kane	Sedan
7	27	\$1,529	Sheffield	Sedan
8	27	\$3,082	Kane	Truck
9	28	\$1,951	Kane	SUV
10	28	\$2,692	Tionesta	Compact
11	29	\$1,206	Sheffield	Sedan
12	29	\$1,342	Kane	Sedan
13	30	\$443	Kane	Sedan
14	30	\$754	Olean	Sedan

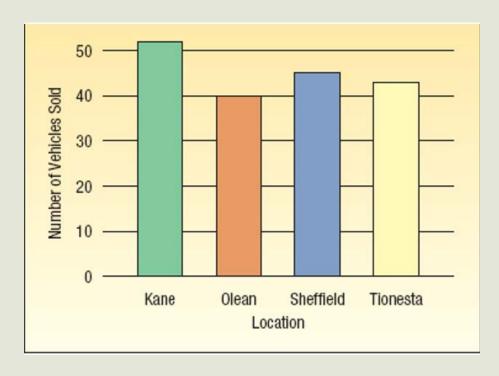
The Applewood Auto Group (AAG) sells a wide range of vehicles

Frequency Table

Location	Number of Cars
Kane	52
Olean	40
Sheffield	45
Tionesta	43
Total	180

Frequency Table for Vehicles Sold Last Month at Applewood Auto Group by Location

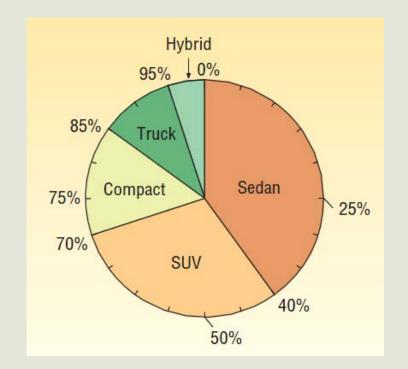
Bar Charts



Number of vehicles sold by location

Pie Charts

Vehicle Type	Number Sold	Percent Sold
Sedan	72	40
SUV	54	30
Compact	27	15
Truck	18	10
Hybrid	9	5
Total	180	100

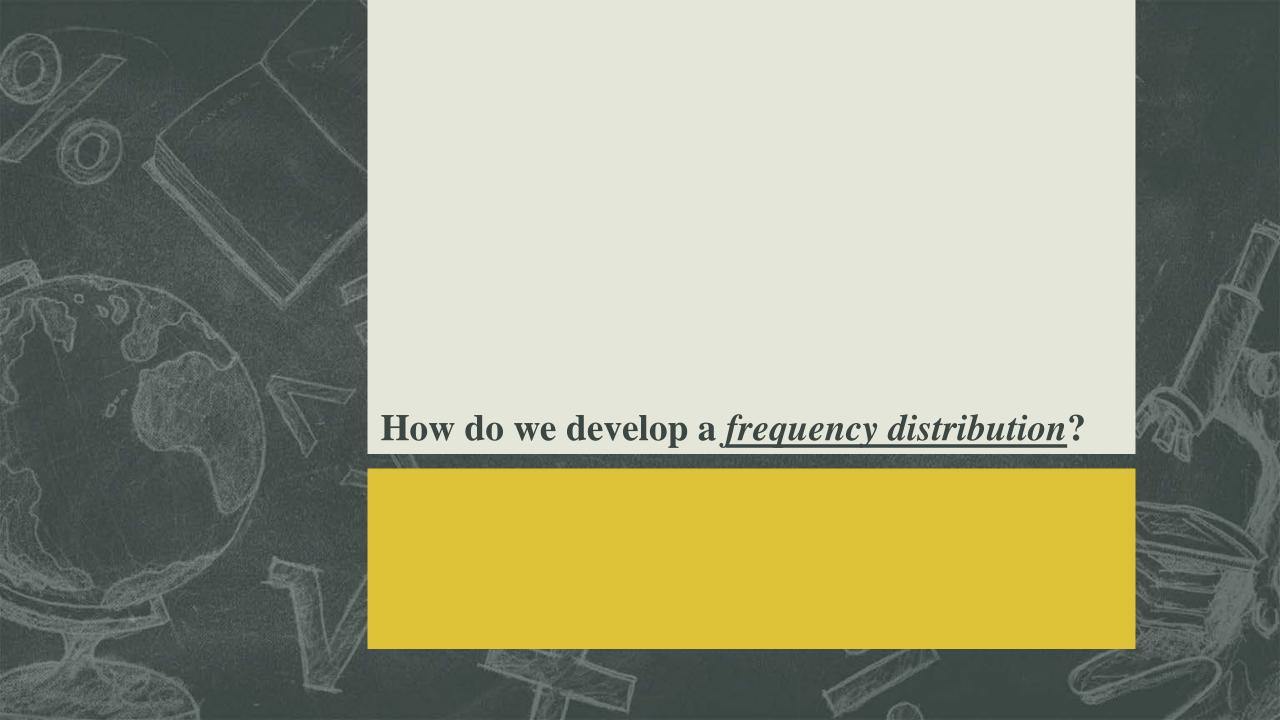


Vehicles sales by type at Applewood Auto Group

Relative Class Frequencies

Location	Number of Cars	Relative Frequency
Kane	52	.289
Olean	40	.222
Sheffield	45	.250
Tionesta	43	.239
Total	180	1.000

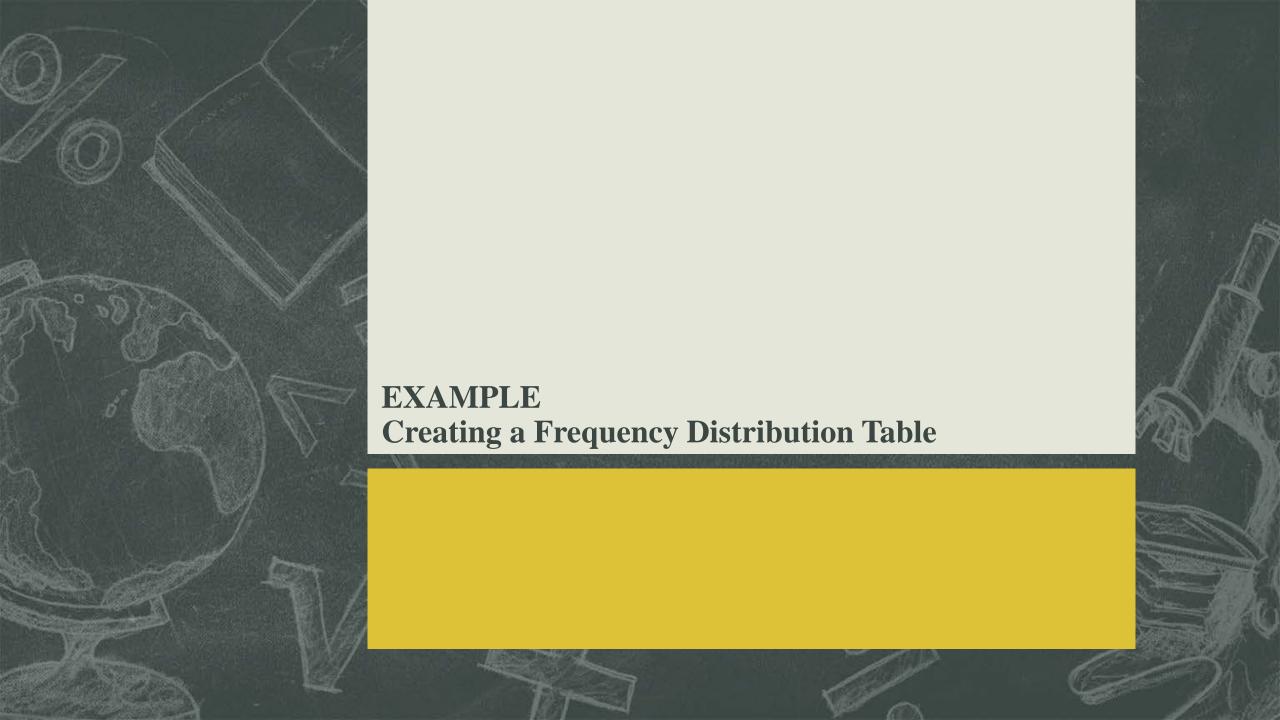
Relative frequency table of vehicles sold at AAG



Frequency Distribution

- > Class interval
- > Class frequency
- > Class midpoint

Profit	Midpoint	Frequency		
\$ 200 up to \$ 600	\$ 400	8		
600 up to 1,000	800	11		
1,000 up to 1,400	1,200	23		
1,400 up to 1,800	1,600	38		
1,800 up to 2,200	2,000	45		
2,200 up to 2,600	2,400	32		
2,600 up to 3,000	2,800	19		
3,000 up to 3,400	3,200	4		
Total		180		



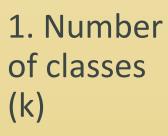
Constructing a Frequency Table– Example

Applewood Auto Group wants to show the typical profit for each sale.

- •What is the typical profit on each sale?
- ■What is the largest profit on any sale?
- •What is the lowest profit on any sale?
- •Around what value did the profits tend to cluster?

BLE Z-4	Profit on	Vehicles S	old Last M	onth by th	e Applewoo	d Auto Gi	oup	Highes
1,387	\$2,148	\$2,201	\$ 963	\$ 820	\$2,230	\$3,043	\$2,584	\$2,37
1,754	2,207	996	1,298	1,266	2,341 /	1,059	2,666	2,63
1,817	2,252	2,813	1,410	1,741	3,292	1,674	2,991	1,42
1,040	1,428	323	1,553	1,772	1,108	1,807	934	2,94
1,273	1,889	352	1,648	1,932	1,295	2,056	2,063	2,14
1,529	1,166	482	2,071	2,350	1,344	2,236	2,083	1,97
3,082	1,320	1,144	2,116	2,422	1,906	2,928	2,856	2,50
1,951	2,265	1,485	1,500	2,446	1,952	1,269	2,989	78
2,692	1,323	1,509	1,549	369	2,070	1,717	910	1,53
1,206	1,761	1,638	2,348	978	2,454	1,797	1,536	2,33
1,342	1,919	1,961	2,498	1,238	1,606	1,955	1,957	2,70
443	2,357	2,127	294	1,818	1,680	2,199	2,240	2,22
754	2,866	2,430	1,115	1,824	1,827	2,482	2,695	2,59
1,621	732	1,704	1,124	1,907	1,915	2,701	1,325	2,74
870	1,464	1,876	1,532	1,938	2,084	3,210	2,250	1,83
1,174	1,626	2,010	1,688	1,940	2,639	377	2,279	2,84
1,412	1,761	2,165	1,822	2,197	842	1,220	2,626	2,43
1,809	1,915	2,231	1,897	2,646	1,963	1,401	1,501	1,64
2,415	2,119	2,389	2,445	1,461	2,059	2,175	1,752	1,82
1,546	1,766	335	2,886	1,731	2,338	1,118	2,058	2,48

Steps of a Frequency Distribution



- "2 to the k rule"
- $2^k > n$

2. Class width

• $i \ge \frac{H-L}{k}$

3. Class limits

4. Tally the observation into the classes

5. Count the number of items in each class

Graphic Presentation of a Frequency Distribution

	No.					Lowest
\$23,197	\$23,372	\$20,454	\$23,591	\$26,651	\$27,453	\$17,266
18,021	28,683	30,872	19,587	23,169	35,851 /	19,251
20,047	24,285	24,324	24,609	28,670	15,546	15,935
19,873	25,251	25,277	28,034	24,533	27,443	19,889
20,004	17,357	20,155	19,688	23,657	26,613	20,895
20,203	23,765	25,783	26,661	32,277	20,642	21,981
24,052	25,799	15,794	18,263	35,925	17,399	17,968
20,356	21,442	21,722	19,331	22,817\	19,766	20,633
20,962	22,845	26,285	27,896	29,076 \	32,492	18,890
21,740	22,374	24,571	25,449	28,337	20,642	23,613
24,220	30,655	22,442	17,891	20,818	26,237	20,445
21,556	21,639	24,296				
					Highest	

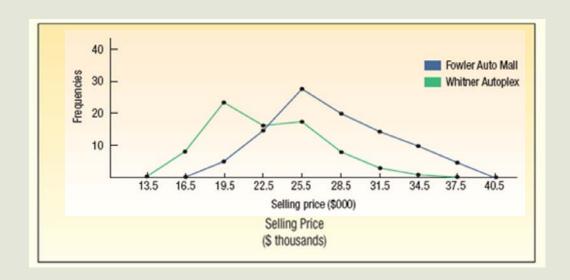
Prices of Vehicles Sold Last Month

Frequency Distribution



Profit on 180 vehicles sold last month

Frequency Polygon



Questions?

