What's Going On?

Checking In

Minds on   Check Your Pulse

Action!   Histograms

Consolidation   Intervals and Interval Lengths

Learning Goal - I will be able to interpret and represent one-variable data!

Unit 4 - Statistics

Day 1: One-Variable Data

There will be no test this unit.

Instead, there will be a final unit assignment where you will apply all of the unit skills.

It will be open book.

So take notes, keep worksheets!!!

Minds on

Check Your Pulse.

Find your pulse.

We are going to count out our pulses for a period of 1 minute.

Minds on

Class Heart Rates

80	40	62	94	70	68	74	
94	80	76	84	100	36	78	
104	64	100	98	106	72		

Minds on

Class Heart Rates Continued

Now we will create a Frequency Distribution Table and a Histogram to represent this **one variable data** .

Step 1: Identify the **Minimum** and **Maximum** values.

Min : 36

Max : 106

Step 2: Determine the **Range**

Range = ___Max___ - ___Min___

= 106 − 36

= 70

Minds on

Class Heart Rates Continued

Step 3: Use the ~range~ to determine how to split our data into **intervals**. (How many bars do we want?) <u>Typically between 5 and 20 bars.</u>

70        $\dfrac{70}{5}$ 14

Divide the range by 5
AND

$\dfrac{70}{20}$ 3.5

Divide the range by 20

We will have intervals between ___3.5 bpm___

and ___14 bpm___.

Minds on

Class Heart Rates Continued

Step 4:   Decide on the **interval length** .
(Pick a round number, 5, 10, 15, ...)

Avoid overlap Insert a decimal place.

Pick a "nice" number between
the numbers we found in Step 3.

Add a decimal place to avoid
overlap. Choose 10

Minds on

Class Heart Rates Continued

Now we will create a **Frequency Distribution Table** to represent this **one variable data**.

Heart Rate (x)	Frequency (f)	Cumulative Frequency
30.5 - 40.5	2 → 2	2
40.5 - 50.5	0	2
50.5 - 60.5	0	2
60.5 - 70.5	4	6
70.5 - 80.5	6	12
80.5 - 90.5	1	13
90.5 - 100.5	5	14
100.5 - 110.5	2	20 ✓

Action!

Class Heart Rates Continued

Now we will create a **Histogram**
to represent this **one variable data**.
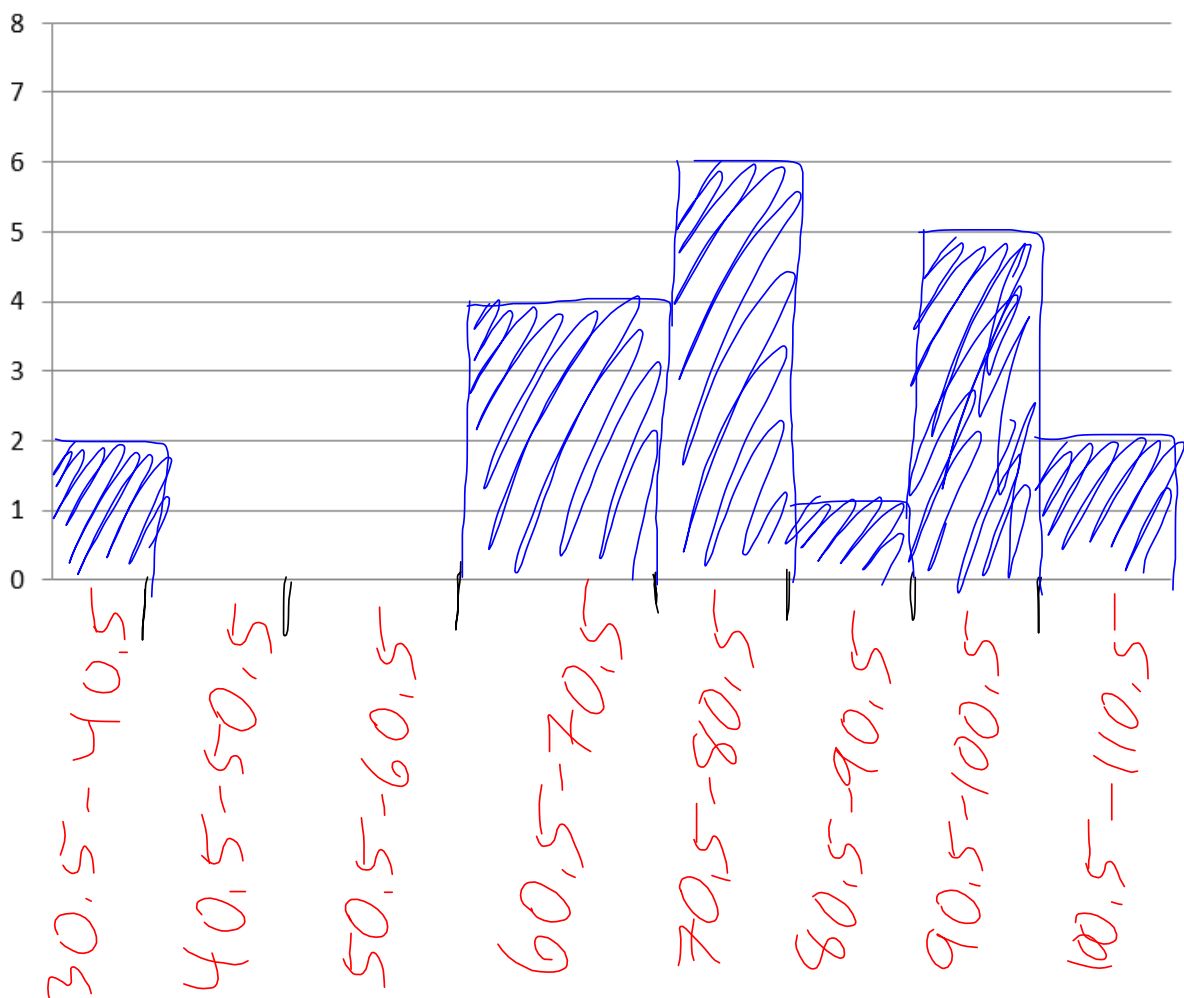
Consolidation

Intervals

Use the procedure outlined to determine appropriate intervals to represent this data.

59	70	86	56
95	65	72	67
70	93	76	92
85	82	84	52 min
69	58	90	93
57	56	81	96 max

$$range = 96 - 52$$
$$= 44$$

$$\frac{5 \, bars}{44} \quad \frac{44}{5} = 8.8 \qquad \frac{20 \, bars}{44} \quad \frac{44}{20} = 2.2$$

let's use intervals of 5!

Consolidation

Intervals

Use the procedure outlined to determine appropriate intervals to represent this data.

66	79	53	81	84
76	76	67	64	83
92	56	67	77	91
61	71	86	73	87
71	67	71	81	86
72	62	77	91	72

$$Range = 92 - 53$$
$$= 39$$

$$\frac{5 \; bars}{39} = 7.8$$

$$\frac{20 \; bars}{39} = 1.95$$
$$\frac{39}{20} = 1.95$$

Let's use interval lengths of 5... again!

Consolidation

Intervals

Use the procedure outlined to determine appropriate intervals to represent this data.

47	94	78	42	89	68
46	51	93	88	51	77
91	97	93	76	69	41
84	55	75	97	52	83
69	80	79	85	59	30
74	95	92	51	67	23
52	86	75	58	81	91
81	66	78	54	53	

$$\text{Range} = 97 - 23$$
$$= 74$$

$$\frac{5 \text{ bars}}{74} \qquad \frac{74}{5} = 14.8$$

$$\frac{20 \text{ bars}}{74} \qquad \frac{74}{20} = 3.7$$

use intervals of 10

Consolidation

Worksheet