## Making a 3 Bubble Venn Diagram

1. Put just the data that you want into a spreadsheet tab. Cut and paste, deleting extras.

| 1 | A | B | C | D | E | F | G |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Algonquin Park Wildlife Counts |  |  |  |  |  |  |
| 2 | Year | Moose | Deer | Loon |  |  |  |
| 3 | 1995 | 435 | 125 | 234 |  |  |  |
| 4 | 1996 | 432 | 135 | 236 |  |  |  |
| 5 | 1997 | 430 | 142 | 243 |  |  |  |
| 6 | 1998 | 426 | 150 | 231 |  |  |  |
| 7 | 1999 | 426 | 152 | 224 |  |  |  |
| 8 | 2000 | 422 | 155 | 218 |  |  |  |
| 9 | 2001 | 420 | 161 | 214 |  |  |  |
| 10 | 2002 | 416 | 163 | 216 |  |  |  |
| 11 | 2003 | 412 | 169 | 218 |  |  |  |
| 12 | 2004 | 411 | 169 | 221 |  |  |  |
| 13 | 2005 | 409 | 177 | 227 |  |  |  |
| 14 | 2006 | 405 | 180 | 229 |  |  |  |

2. Add a space $A B O V E$ your dataset.

Calculate min, q1, median, q3, max, mean for your dataset.

The formulas that I used:
=MIN(B9:B20)
=QUARTILE.EXC(B9:B20,1)
=MEDIAN(B9:B20)
=QUARTILE.EXC(B9:B20,3)
$=\mathrm{MAX}(\mathrm{B9}: \mathrm{B} 20)$
=AVERAGE(B9:B20)

|  | A |  | B | C |
| :--- | :--- | ---: | ---: | ---: |

3. Add columns for some calculations.

Pick your $A, B$ and $C$ events. I use medians and Q3 values to pick mine.

| $\triangle$ | A | B | C | D | E | F | G | H | I | J | K | L |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Algonquin | Park W | Wildlife | Counts |  |  |  |  |  |  |  |  |
| 2 | min | 405 | 125 | 214 |  |  |  |  |  |  |  |  |
| 3 | q1 | 411.25 | 144 | 218 |  |  |  |  |  |  |  |  |
| 4 | median | 421 | 158 | 226 |  | A Event | B Event | C Event |  |  |  |  |
| 5 | q3 | 429 | 169 | 233 |  | Moose over | Deer over | Loon over |  |  |  |  |
| 6 | max | 435 | 180 | 243 |  | 429 | 169 | 226 |  |  |  |  |
| 7 | mean | 420.33 | 157 | 226 | counts |  |  |  |  |  |  |  |
| 8 | Year | Moose | Deer | Loon |  | A? | B? | C? | A and B | B and C | A and C | A and B and C |
| 9 | 1995 | 435 | 125 | 234 |  |  |  |  |  |  |  |  |
| 10 | 1996 | 432 | 135 | 236 |  |  |  |  |  |  |  |  |
| 11 | 1997 | 430 | 142 | 243 |  |  |  |  |  |  |  |  |
| 12 | 1998 | 426 | 150 | 231 |  |  |  |  |  |  |  |  |
| 13 | 1999 | 426 | 152 | 224 |  |  |  |  |  |  |  |  |
| 14 | 2000 | 422 | 155 | 218 |  |  |  |  |  |  |  |  |
| 15 | 2001 | 420 | 161 | 214 |  |  |  |  |  |  |  |  |
| 16 | 2002 | 416 | 163 | 216 |  |  |  |  |  |  |  |  |
| 17 | 2003 | 412 | 169 | 218 |  |  |  |  |  |  |  |  |
| 18 | 2004 | 411 | 169 | 221 |  |  |  |  |  |  |  |  |
| 19 | 2005 | 409 | 177 | 227 |  |  |  |  |  |  |  |  |
| 20 | 2006 | 405 | 180 | 229 |  |  |  |  |  |  |  |  |

4. Calculate $\mathrm{A}, \mathrm{B}, \mathrm{C}$.

| - | A | B | C | D | E | F | G | H | I | In F9: |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Algonquin Park Wildlife Counts |  |  |  |  |  |  |  |  | =B9>\$F\$6 |
| 2 | min | 405 | 125 | 214 |  |  |  |  |  | $\begin{aligned} & \text { In G9: } \\ & \text { =C9>\$G\$6 } \end{aligned}$ |
| 3 | q1 | 411.25 | 144 | 218 |  |  |  |  |  |  |
| 4 | median | 421 | 158 | 226 |  | A Event | B Event | C Event |  |  |
| 5 | q3 | 429 | 169 | 233 |  | Moose over | Deer over | Loon over |  | $\begin{aligned} & \text { In H9: } \\ & \text { =D9>\$H\$6 } \end{aligned}$ |
| 6 | max | 435 | 180 | 243 |  | 429 | 169 | 226 |  |  |
| 7 | mean | 420.33 | 157 | 226 | counts |  |  |  |  |  |
| 8 | Year | Moose | Deer | Loon |  | A? | $B$ ? | C? | $A$ and |  |
| 9 | 1995 | 435 | 125 | 234 |  | TRUE | FALSE | TRUE |  |  |
| 10 | 1996 | 432 | 135 | 236 |  |  |  |  |  |  |
| 11 | 1997 | 430 | 142 | 243 |  |  |  |  |  |  |
| 12 | 1998 | 426 | 150 | 231 |  |  |  |  |  |  |

5. Calculate the next columns:

| - | A | B | C | D | E | F | G | H | I | J | K | L |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Algonquin Park Wildlife Counts |  |  |  |  |  |  |  |  |  |  |  |
| 2 | min | 405 | 125 | 214 |  |  |  |  |  |  |  |  |
| 3 | q1 | 411.25 | 144 | 218 |  |  |  |  |  |  |  |  |
| 4 | median | 421 | 158 | 226 |  | A Event | B Event | C Event |  |  |  |  |
| 5 | q3 | 429 | 169 | 233 |  | Moose over | Deer over | Loon over |  |  |  |  |
| 6 | max | 435 | 180 | 243 |  | 429 | 169 | 226 |  |  |  |  |
| 7 | mean | 420.33 | 157 | 226 | counts |  |  |  |  |  |  |  |
| 8 | Year | Moose | Deer | Loon |  | A? | $B$ ? | C? | A and B | $B$ and C | A and C | $A$ and $B$ and $C$ |
| 9 | 1995 | 435 | 125 | 234 |  | TRUE | FALSE | TRUE | FALSE | FALSE | TRUE | FALSE |
| 10 | 1996 | 432 | 135 | 236 |  |  |  |  |  |  |  |  |
| 11 | $1 \mathrm{nn7}$ | 120 | 112 | 219 |  |  |  |  |  |  |  |  |
|  |  |  | 19 (A | and B) |  | In J9 (B and | d C) | In K9 (A | and C) | In L9 | (all three) |  |
|  |  |  | AND( | F9,G9) |  | =AND(G9, | H9) | =AND(F) | 9,H9) | =AND | (F9,G9,H9) |  |

6. Fill Down.

| 4 | A | B | C | D | E | F | G | H | 1 | J | K | L |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Algonquin Park Wildlife Counts |  |  |  |  |  |  |  |  |  |  |  |
| 2 | min | 405 | 125 | 214 |  |  |  |  |  |  |  |  |
| 3 | q1 | 411.25 | 144 | 218 |  |  |  |  |  |  |  |  |
| 4 | median | 421 | 158 | 226 |  | A Event | B Event | C Event |  |  |  |  |
| 5 | q3 | 429 | 169 | 233 |  | Moose over | Deer over | Loon over |  |  |  |  |
| 6 | max | 435 | 180 | 243 |  | 429 | 169 | 226 |  |  |  |  |
| 7 | mean | 420.33 | 157 | 226 | counts |  |  |  |  |  |  |  |
| 8 | Year | Moose | Deer | Loon |  | A? | $B$ ? | C? | $A$ and $B$ | $B$ and $C$ | $A$ and $C$ | A and B and C |
| 9 | 1995 | 435 | 125 | 234 |  | TRUE | FALSE | TRUE | FALSE | FALSE | TRUE | FALSE |
| 10 | 1996 | 432 | 135 | 236 |  | TRUE | FALSE | TRUE | FALSE | FALSE | TRUE | FALSE |
| 11 | 1997 | 430 | 142 | 243 |  | TRUE | FALSE | true | FALSE | FALSE | TRUE | FALSE |
| 12 | 1998 | 426 | 150 | 231 |  | FALSE | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE |
| 13 | 1999 | 426 | 152 | 224 |  | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 14 | 2000 | 422 | 155 | 218 |  | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 15 | 2001 | 420 | 161 | 214 |  | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 16 | 2002 | 416 | 163 | 216 |  | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 17 | 2003 | 412 | 169 | 218 |  | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 18 | 2004 | 411 | 169 | 221 |  | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 19 | 2005 | 409 | 177 | 227 |  | FALSE | true | TRUE | FALSE | TRUE | FALSE | FALSE |
| 20 | 2006 | 405 | 180 | 229 |  | FALSE | TRUE | TRUE | FALSE | TRUE | FALSE | FALSE |

Note: all of my A and B and C column was false. That's not going to make a good Venn Diagram. So...I went back and fiddled with my events.

7. Use the countif formula to summarize your events.

| 4 | A | B | C | D | E | F | G | H | I | J | K | L |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Algonquin Park Wildlife Counts |  |  |  |  |  |  |  |  |  |  |  |
| 2 | min | 405 | 125 | 214 |  |  |  |  |  |  |  |  |
| 3 | q1 | 411.25 | 144 | 218 |  |  |  |  |  |  |  |  |
| 4 | median | 421 | 158 | 226 |  | A Event | B Event | C Event |  |  |  |  |
| 5 | q3 | 429 | 169 | 233 |  | Moose over | Deer under | Loon over |  |  |  |  |
| 6 | max | 435 | 180 | 243 |  | 421 | 169 | 218 |  |  |  |  |
| 7 | mean | 420.33 | 157 | 226 | counts | 6 | 8 | 8 | 6 | 5 | 5 | 5 |
| 8 | Year | Moose | Deer | Loon |  | A? | B? | C? | A and B | $B$ and C | A and C | $A$ and $B$ and $C$ |
| 9 | 1995 | 435 | 125 | 234 |  | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| 10 | 1996 | 432 | 135 | 236 |  | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| 11 | 1997 | 430 | 142 | 243 |  | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| 12 | 1998 | 426 | 150 | 231 |  | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| 13 | 1999 | 426 | 152 | 224 |  | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE | TRUE |
| 14 | 2000 | 422 | 155 | 218 |  | TRUE | TRUE | FALSE | TRUE | FALSE | FALSE | FALSE |
| 15 | 2001 | 420 | 161 | 214 |  | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 16 | 2002 | 416 | 163 | 216 |  | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 17 | 2003 | 412 | 169 | 218 |  | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 18 | 2004 | 411 | 169 | 221 |  | FALSE | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE |
| 19 | 2005 | 409 | 177 | 227 |  | FALSE | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE |
| 20 | 2006 | 405 | 180 | 229 |  | FALSE | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE |

The formula in F6: =COUNTIF(F9:F20,TRUE)
Fill Right.
8. Use the numbers to build a 3 Bubble Venn Diagram on your PowerPoint.


My example would result in a Venn Diagram like this:


The completed Spreadsheet:

| - | A | B | C | D | E | F | G | H | 1 | J | K | L |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Algonqui | n Park W | Wildlife | Counts |  |  |  |  |  |  |  |  |
| 2 | min | 405 | 125 | 214 |  |  |  |  |  |  |  |  |
| 3 | q1 | 411.25 | 144 | 218 |  |  |  |  |  |  |  |  |
| 4 | median | 421 | 158 | 226 |  | A Event | B Event | C Event |  |  |  |  |
| 5 | q3 | 429 | 169 | 233 |  | Moose over | Deer under | Loon over |  |  |  |  |
| 6 | max | 435 | 180 | 243 |  | 421 | 169 | 218 |  |  |  |  |
| 7 | mean | 420.33 | 157 | 226 | counts | 6 | 8 | 8 | 6 | 5 | 5 | 5 |
| 8 | Year | Moose | Deer | Loon |  | A? | B? | C? | $A$ and $B$ | $B$ and $C$ | $A$ and $C$ | $A$ and $B$ and $C$ |
| 9 | 1995 | 435 | 125 | 234 |  | true | true | true | TRUE | true | true | TRUE |
| 10 | 1996 | 432 | 135 | 236 |  | true | true | true | true | true | true | true |
| 11 | 1997 | 430 | 142 | 243 |  | true | true | true | true | true | true | true |
| 12 | 1998 | 426 | 150 | 231 |  | true | true | true | true | true | true | true |
| 13 | 1999 | 426 | 152 | 224 |  | true | true | true | true | true | true | true |
| 14 | 2000 | 422 | 155 | 218 |  | true | true | FALSE | TRUE | FALSE | FALSE | FALSE |
| 15 | 2001 | 420 | 161 | 214 |  | FALSE | true | FALSE | FALSE | FALSE | FALSE | FALSE |
| 16 | 2002 | 416 | 163 | 216 |  | FALSE | true | FALSE | FALSE | FALSE | FALSE | FALSE |
| 17 | 2003 | 412 | 169 | 218 |  | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE | FALSE |
| 18 | 2004 | 411 | 169 | 221 |  | FALSE | FALSE | true | FALSE | FALSE | FALSE | FALSE |
| 19 | 2005 | 409 | 177 | 227 |  | FALSE | FALSE | true | FALSE | FALSE | FALSE | FALSE |
| 20 | 2006 | 405 | 180 | 229 |  | FALSE | FALSE | TRUE | FALSE | FALSE | FALSE | FALSE |

