

# 3D Scatterplot

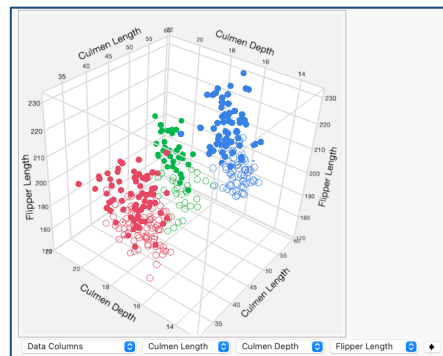
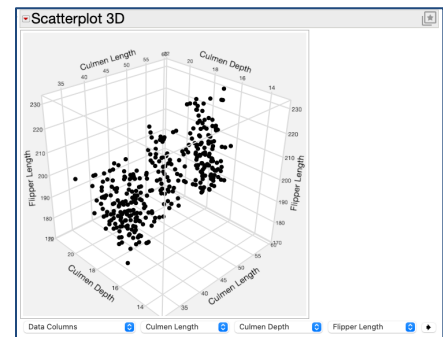
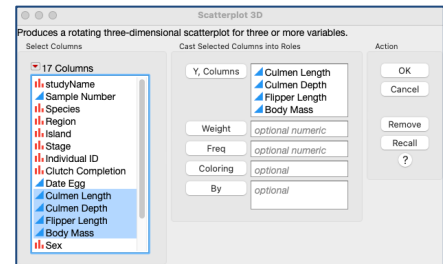
Use to explore relationships between three numeric variables.

## 3D Scatterplot

1. Select **Graph > Scatterplot 3D**.
  2. Select 3 or more continuous variables from the **Columns list**, and add to **Y, Columns**. Click **OK**.
    - An interactive rotatable scatterplot will be produced using the first 3 variables in the list. Variables can be selected for each axis from the drop-down menus. Clicking the arrow will rotate through every possible 3 variable combination of all the variables being used.
- Culmen Length
  - ✓ Culmen Length
  - Culmen Depth
  - Flipper Length
  - Body Mass
  - Other

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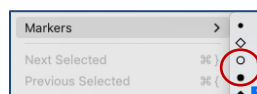
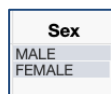
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  - Body Mass
  - Other
- Click on the graph and move your mouse to rotate the graph in 3 dimensions.
  - Right-click on the graph to open up controls to change the appearance of the graph.



## Incorporating Categorical Variables

- Categorical variables can be incorporated into a 3D Scatterplot by utilizing **row states**. Here we used different colors for the three penguin species and used open circles or closed circles to represent female and male penguins. To add **row states** to the data table:
  1. Select **Rows > Color or Mark by Columns**. Choose the variable you wish to use for the different colors. Here we chose the variable 'Species'. Click **OK**.
 

**Note:** the default colors can be changed by right-clicking on the colors in the dialog box and choosing desired ones.
  2. To incorporate a second categorical variable, as we wish to do here, select all the rows that correspond to one of the sexes. One way to do this is to open up the Column Header. Go to the column for 'Sex'. Select one of the sexes and go to **Rows > Markers** and choose the desired marker. Repeat for the other sex. Any graph already made or will be made will incorporate these row states.



	Species	Sex
1	Adelie	MALE
2	Chinstrap	FEMALE
3	Gentoo	FEMALE
4	Adelie	FEMALE
5	Chinstrap	MALE
6	Gentoo	MALE
7	Adelie	FEMALE
8	Chinstrap	MALE

Visit **Discovering JMP > Visualize Your Data > Compare Multiple Variables**, and **Essential Graphing > Scatterplot Matrix** in **JMP Help** to learn more.