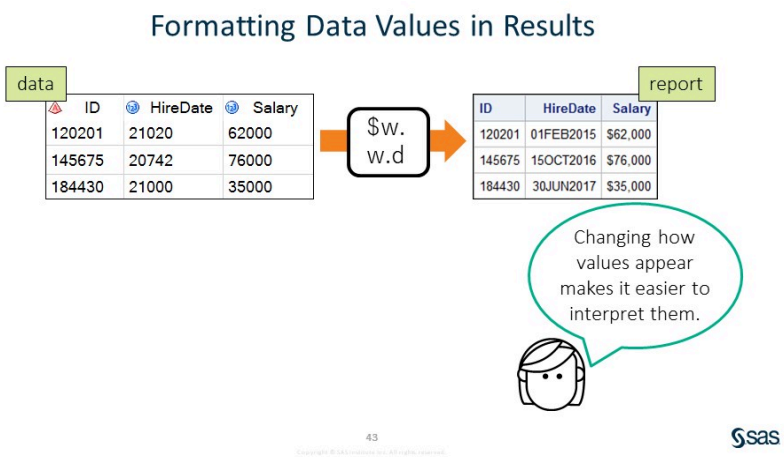
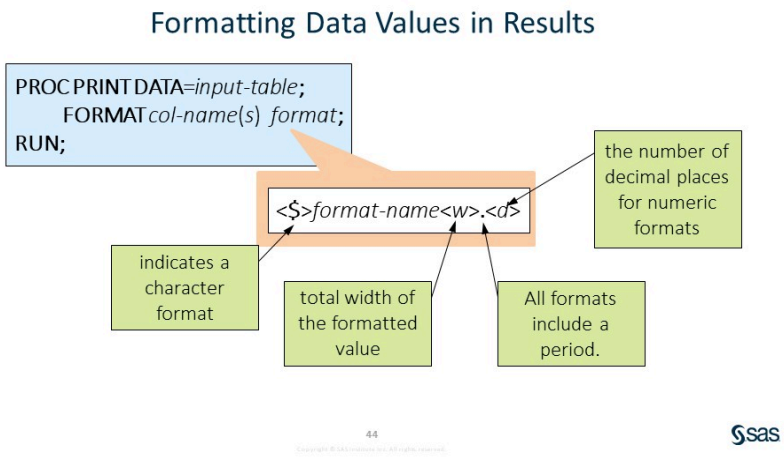
B3.3 - Formatting Columns



Sometimes when you're exploring data, it can be difficult to interpret the raw values in the data. For example, it's impossible to visually evaluate SAS date values such as **HireDate** in their raw form, so in your report, you might want to display the value in a date format that is easy to understand. Numeric columns such as **Salary** store only digits and decimal points, but we might want to display those numbers with commas or currency symbols to make them easier to interpret quickly.



To control how values appear in your reports, you can apply SAS formats to columns by adding the FORMAT statement to your PROC PRINT step. You use the keyword FORMAT, followed by the column and the SAS format that you want to apply to the column.

You specify the format using this general syntax. The dollar sign indicates a character format and precedes the name of the SAS format. Then you specify the total format width, including decimal places and special characters. The period is a required delimiter, and for numeric formats, it can be followed by the number of decimal places.

Common Formats for Numeric Values

Format Name	Example Value	Format Applied	Formatted Value
w.d	12345.67	5.	12346
w.d	12345.67	8.1	12345.7
COMMA*w.d*	12345.67	COMMA8.1	12,345.7
DOLLAR*w.d*	12345.67	DOLLAR10.2	$12,345.67
DOLLAR*w.d*	12345.67	DOLLAR10.	$12,346
YEN*w.d*	12345.67	YEN7.	¥12,346
EUROX*w.d*	12345.67	EUROX10.2	€12.345,67

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sas

SAS has dozens of formats you can use. Let's look at some of the most common formats and see the effect they have on the numeric value.

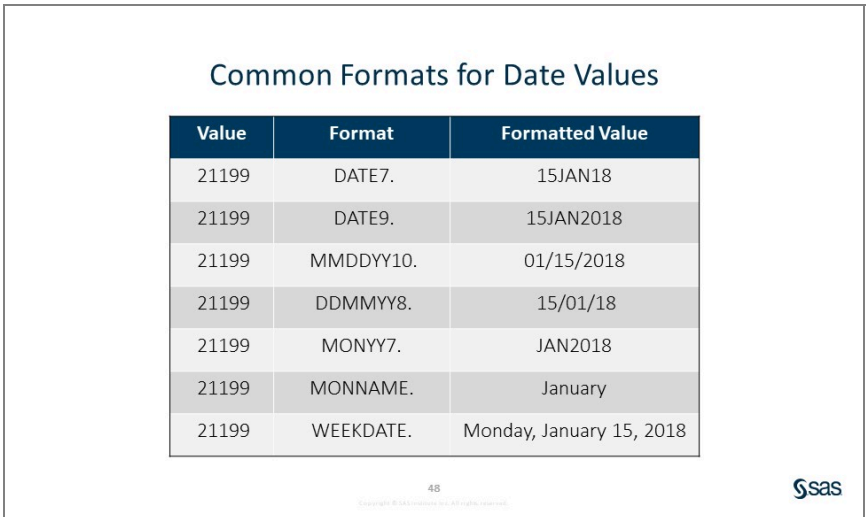
The *w.d* format specifies the width and number of decimal place. The 5. format applied here is the same as 5.0, so no decimal places are displayed. SAS rounds the displayed value to the nearest integer. By applying the 8.1 format, the value is displayed rounded to one decimal place. It's okay that the format width is 8, even though the digits and decimal point fill only seven positions.

The COMMA format inserts a comma. Specifying a width of 8.1 rounds the value to the nearest tenth. The DOLLAR format inserts a dollar sign in the displayed value. Keep in mind that the width must accommodate the total width of the displayed value, including the dollar sign, commas, decimal point, and decimal places. If you specify DOLLAR 10.2, the entire value is displayed. If we just use DOLLAR10., the formatted value is rounded to the nearest dollar. Similarly, the YEN format rounds to the nearest whole number and adds the Yen symbol. Lastly, in the EUROX format, a euro symbol is inserted in the displayed value, and decimal points and commas are transposed. Specifying EUROX10.2 formats the entire value. Please be aware that these international formats just add the symbol to the values. The formats do not convert values from one currency to another.

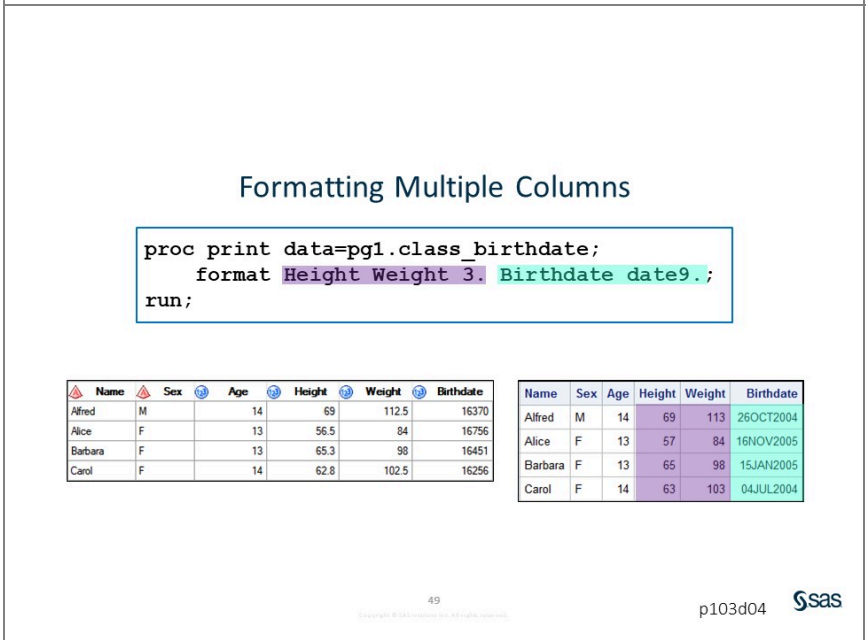
Activity 3.04

1. Go to **support.sas.com/documentation (https://support.sas.com/documentation/)** . Click **9.4** after **SAS Language Elements by Name, Product, and Category.**
2. Expand the **Formats** section and click **Alphabetical Listing**.
3. What does the Zw.d format do?

Click here for Solution.



SAS also offers a large variety of date formats. Although numeric SAS date values are perfect for calculations, we probably never want to look at those raw date values in our results. Here are a few examples of the same date value formatted with different date formats. Notice in the two DATE format examples that you can control the display of a two- or four-digit year by adjusting the width.



Let's look at a code example. Here we are printing **class_birthdate**. You can format several columns using either the same format or different formats in a single FORMAT statement. Here we are formatting the columns **height** and **weight** with 3., which rounds the value to the nearest whole number, and we are formatting **Birthdate** with the DATE9. format. These formats impact the way the values are displayed in the procedure results, but they do not change the raw data values themselves.

Demo: Formatting Data Values in Results

3_3 - Demo - Formatting Data Values in Results.pdf
(https://clemson.instructure.com/courses/237270/files/23074694/download?wrap=1)
(https://clemson.instructure.com/courses/237270/files/23074694/download?download_frd=1)

Activity 3.06

Open **p103a06.sas** from the **activities** folder and perform the following tasks:

1. Highlight the PROC PRINT step and run the selected code. Notice how the values of **Lat**, **Lon**, **StartDate**, and **EndDate** are displayed in the report.
2. Change the width of the DATE format to 7 and run the PROC PRINT step. How does the display of **StartDate** and **EndDate** change?
3. Change the width of the DATE format to 11 and run the PROC PRINT step. How does the display of **StartDate** and **EndDate** change?

4. Highlight the PROC FREQ step and run the selected code. Notice that the report includes the number of storms for each **StartDate**.
5. Add a FORMAT statement to apply the MONNAME. format to **StartDate** and run the PROC FREQ step. How many rows are in the report?

Click here for Solution.