

# Lesson 2: Base R vs Tidy R - Homework

Instructor: Emily Markowitz (Emily.Markowitz@noaa.gov)

January 19, 2021

## Questions:

### 1. Let's explore Tidyverse!

- Think of Tidyverse as a family of packages. Which packages are loaded with `{tidyverse}`? What do each of these packages do? Check out: <https://tidyverse.tidyverse.org/>
- Which package is `pivot_wider` from?
- Which package is `rename` from?
- Can you use `{tidyverse}` without `{base}` R?:

### 2. Let's play with some data!

You can view the dataset `CO2` in more detail using `view(CO2)` and learn about it using `?CO2`. `CO2` comes from the `{datasets}` package which should already be automatically loaded in your R.

Some info about the `CO2` dataset: "The `CO2` data frame has 84 rows and 5 columns of data from an experiment on the cold tolerance of the grass species *Echinochloa crus-galli*."

```
C02<-datasets::CO2  
kable(head(C02))
```

Plant	Type	Treatment	conc	uptake
Qn1	Quebec	nonchilled	95	16.0
Qn1	Quebec	nonchilled	175	30.4
Qn1	Quebec	nonchilled	250	34.8
Qn1	Quebec	nonchilled	350	37.2
Qn1	Quebec	nonchilled	500	35.3
Qn1	Quebec	nonchilled	675	39.2

a. `rename()` the “conc” column to “Concentration mL/L” and “treatment” column to “condition”. The new name for the conc column is not a great name (dare I say ‘tidy’ name?) so we’ll fix that in the next question.

b. Use the `{janitor}` function `clean_names` on the CO2 data. What does it do? How did `{janitor}` change our “Concentration mL/L” column?

c. Use `pivot_wider` make columns of uptake (`value_from`) for each plant (`names_from`).

This is not a ‘tidy’ way of looking at data, but is good practice!

d. Use `pivot_longer` to undo what you did in 2c.

To see how to get the old names back, check out the `names_to` and `values_to` variable in `?pivot_longer`. This will likely incur some new rows with NAs, so you’ll need to remove that here with `values_drop_na`. You can check if you actually got it back to original form by seeing if the dimensions of the `data.frame` are the same as the original dataset. As stated earlier, `dim(datasets::CO2)` was 84 rows and 5 columns.