Steps in a data analysis

DEFINE THE QUESTION

General question

Concrete question

DEFINE THE IDEAL DATA SET   DATA TO BE ACCESSED   TERMS OF SERVICE

Descriptive	○	*Exploratory*	○	*Existing data - Free*	○
Inferential	○	*Predictive*	○	*Existing data - Paid*	○
Causal	○	*Mechanistic*	○	*Generate new data*	○

OBTAIN THE DATA   CLEAN THE DATA

Raw Data	○	Do you understand the data?	☐
Processed Data	○	Do you understand the source of the data?	☐
Source		Are data good enough?	☐
Date/Time		*Notes*	

EXPLORATORY DATA ANALYSIS

Summaries ☐

Plots ☐

Analysis ☐

STATISTICAL PREDICTION/MODELING

Results ☐

Methods ☐

Processing ☐

Uncertainty ☐

INTERPRET RESULTS

| Description | ○ | Causal | ○ | Coefficients | ☐ | [_____] |
| Association | ○ | Prediction | ○ | Uncertainty | ☐ | [_____] |

CHALLENGE RESULTS

Question	☐	[_____]
Data source	☐	[_____]
Processing	☐	[_____]
Analysis	☐	[_____]
Conclusions	☐	[_____]
Uncertainty	☐	[_____]
Terms	☐	[_____]
Alt. analyses	☐	[_____]

SYNTHESIZE/WRITE UP RESULTS

THE ANALYSIS…

Lead with the question?	☐
Is summarized into the story	☐
Is needed for the story?	☐
Is needed to address a challenge?	☐
Is ordered according the story?	☐
Did you include pretty figures that contribute to the story?	☐

CREATE REPRODUCIBLE CODE

| Can your code be reproduced? | ☐ |