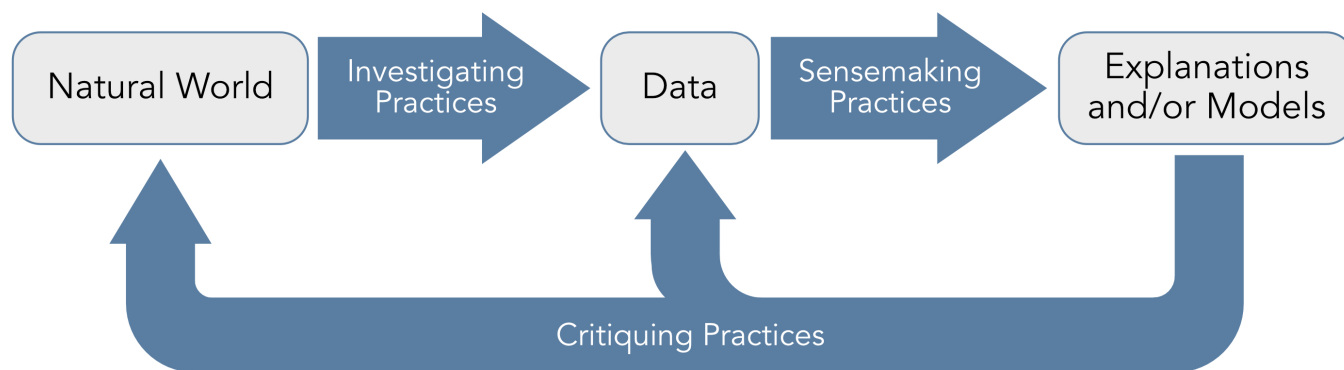


Science Practices Diagram

Grouping the 8 Science Practices into Investigating, Sensemaking, and Critiquing

When thinking about the science practices, we find that it can be overwhelming (particularly for those new to NGSS) to think about each of the eight practices. In addition, the science practices are not independent, but rather they overlap and work synergistically in classrooms (Bell, Bricker, Tzou, Lee & Van Horne, 2012). Consequently, we developed 3 groups for the practices: Investigating Practices, Sensemaking Practices and Critiquing Practices (McNeill, Katsh-Singer & Pelletier, 2015).



The *Investigating Practices* focus on asking questions and conducting experiments about the *Natural World*. The product of those investigations is *Data*. The *Sensemaking Practices* analyze the data looking for patterns and relationships in order to develop *Explanations* and *Models*. A key element of science, which is often left out of k-12 instruction, is critique. The *Critiquing Practices* focus on evaluating and arguing about the different explanations and models in order to develop a stronger understanding of the natural world.

The table below illustrates one way to group the eight science practices into – *Investigating Practices*, *Sensemaking Practices* and *Critiquing Practices*.

| | Investigating Practices | Sensemaking Practices | Critiquing Practices |
|-------------------|--|------------------------------------|---|
| Science Practices | 1. Asking questions | 2. Developing and using models | 7. Engaging in argument from evidence |
| | 3. Planning and carrying out investigations | 4. Analyzing and interpreting data | 8. Obtaining, evaluating, and communication information |
| | 5. Using mathematical and computational thinking | 6. Constructing explanations | |