Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pd: \_\_\_ Ast#: \_\_\_\_\_

**PRACTICE OF SCIENCE NOTES**

1. **The Process of Science**
   1. What phrases should we use to replace “THE scientific method”?
   2. Not ALL scientific knowledge comes from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; they are only one type of scientific investigation.
2. **Choosing a Topic**
3. List a few tips to choosing a topic for your investigation below:
4. **Research Question**
5. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is one that can be answered with data you gather.
6. What is the format of an effective research question?
7. **Variables**
8. What characterizes a controlled experiment?
9. Independent Variable - the factor being \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to see \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
10. Dependent Variable – the factor being \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to see \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. Constants – all other factors must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ so they don’t \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. **Researching Your Topic**
13. Use your research to narrow down \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
14. A hypothesis is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the phenomenon.
15. A prediction is a statement of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
16. Which of these is most like an “educated guess”?
17. How are a hypothesis and a prediction related to one another?
18. **Planning Your Investigation**
19. List a few questions you’ll need to consider when planning your investigation:
20. Data: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ you gather during your investigation, consisting of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
21. Evidence: data that has been \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in support of a claim.
22. What is the goal of scientific confirmation?
23. Repetition: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    * 1. How do you know when you have run enough trials?
24. Replication: someone else is able to \_\_\_\_\_\_\_\_\_\_\_\_\_ your investigation with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
25. What do repetition and replication have in common?
26. **Analysis**
27. List a few questions you’ll need to consider when analyzing your data:
28. **Conclusions**
29. Scientific \_\_\_\_\_\_\_\_\_\_ must be supported by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Evidence must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with accepted scientific principles.
30. Scientific explanations are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (open to \_\_\_\_\_\_\_\_\_\_\_\_).
31. There is NO SUCH THING AS \_\_\_\_\_\_\_\_\_\_\_\_\_ in science.
    * 1. What words/prases should we use to replace the words, “prove”, “proof”, or “proven”?