**Study Guide – First Sixweeks Test**

**Terms:**

1. **Scientific Method –** a step by step method to answer a question or solve a problem
2. **Inference –** a conclusion based on evidence and prior knowledge
3. **Hypothesis –** an educated guess to answer the question or solve a problem
4. **Conclusion –** a decision based on reasoning or outcome
5. **Analyze –** to examine or look closely to see why it works or not work
6. **Variable –** any factor or object that can affect an experiment
7. **Independent Variable –** What “I” change in an experiment
8. **Dependent Variable –** The Result of what “I” changed
9. **Control –** the group that DOES NOT get the CHANGE
10. **Experimental Group –** the group that the CHANGES are MADE TO
11. **Trial -** Repeating the EXPERIMENT each time is CALLED a TRIAL
12. **Engineering Design Process –** A step by step process to develop a NEW TECHNOLOGY or MEDICINE
13. **Adaptive Technology –** CHANGES the Person/animal PERMANENTLY or causes a LIFESTYLE CHANGE
14. **Assistive Technology –** Helps the Person/animal WITHOUT a permanent change
15. **Controlled Experiment –** TESTS only ONE Variable at a TIME
16. **Technological Design –** The steps/process of inventing and building products/technology or systems to MEET HUMAN NEEDS and SOLVE PROBLEMS
17. **Implementation –** Putting the plan to into Action
18. **Evaluation –** Is the plan successful (THE same as analyzing
19. **Technology –** The use of science to solve problems and make people’s lives easier
20. **Engineer –** A person who designs, constructs, or operates new forms of technology
21. **Risks –** How technology may harm or endanger people or the environment
22. **Prototype –** A working model of a new technology
23. **Performance Testing –** Taking the prototype out into the real world to see how it works
24. **Proposal –** A possible solution for a human need or problem
25. **Bioengineering –** The development of technology in the fields of biology and medicine
26. **Intended Benefits –** The purpose of the technology to meet the need or solve a problem
27. **Unintended Consequences –** The risks (side effect) or bad effects that are a result of a technology
28. **Error –** A mistake in drawing a conclusion, may be due to inaccurate measurements, opinions, or changing conditions
29. **Misleading Data –** Data that is incorrect and leads to Error
30. **Bias –** A wish or expectation in an experiment that leads to specific conclusion on purpose - error
31. **Constraints –** one of more factors/variables in an experiment that do NOT CHANGE or allowed to vary

**KNOW:**

**Steps to the Scientific Method: Engineering Design Process**

1. **Make an Observation to ASK a QUESTION 1. ASK (What is the PROBLEM or NEED)**
2. **Make a HYPOTHESIS (Educated Guess) 2. IMAGINE (What is the solution)**
3. **DO an EXPERIMENT (TEST IT) 3. PLAN and CREATE (build prototype)**
4. **RECORD and ANALYZE your DATA 4. IMPROVE (What can you change to**
5. **Come to a CONCLUSION make it BETTER)**
6. **SHARE your RESULTS 5. SHARE your RESULTS**

**Word clues for Steps:**

1. **ASK - Wondered, Why, What, When Where, How?**
2. **Hypothesis – Thought, Believed, guessed, imagined**
3. **Experiment – (will give the procedures in sentence form)**
4. **Record – Measurement (is Data to be recorded) NOTED (to write)**
5. **Analyze – to make sense of, saw,**
6. **Conclusion – concluded, explanation, showed, shows**
7. **Share – sent to newspaper, called and reported, wrote an article, appeared on TV to report**

**\*\*\*\*\*\* KNOW THE TOOLS FOR SCIENCE!!!!!**

**\*\*\*\*\*\*\*\*\*\*KNOW HOW TO APPLY STEP TO SCIENTIFIC METHOD TO GIVEN EXAMPLES!!!!!!!!**

**\*\*\*\*\*\*\*\*\*\*\*READ YOUR JOURNAL!!!!!!!**

**Practice terms on:** [**http://sheiladunphy.weebly.com**](http://sheiladunphy.weebly.com)

**\*\*\*\* Go to Science then Embedded Technology and Engineering, Find the buttons that link to Quizlet to practice terms with**

**Online textbook:** [**https://my.hrw.com**](https://my.hrw.com) **We are in Chapter One!**

**User name: sdunphy30**

**Password: p8a2b**

**There is an interactive Chapter Review on pages 38 -39**

**PRACTICE INDENTIFING THE TYPES OF VARIABLES, BENEFITS, CONSEQUENCES, AND MATCHING STATEMENTS FROM AN EXPERIMENT OR PROCESS TO THE STEPS OF THE SCIENTIFIC METHOD OR ENGINEERING DESIGN!!!!**

**(YOU HAVE EXAMPLES IN YOUR JOURNAL!!!)**