Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Ms. Taylor- Living Environment Summer 2017

**Williamsburg HS for Architecture and Design**

Hello future science students! Please take the time to complete the following tasks to get you ready for Living Environment in September. Start warming up your brain now to think like a scientist! **READ THROUGH THE ENTIRE PACKET BEFORE YOU BEGIN!**

**Background Information:**

Every scientific discovery was inspired by an observation. Observations are things you notice and give thought to. A good scientist thinks of something that nobody has thought yet, while looking at something that everybody sees.

**Qualitative Observations**- Observations that describe the physical characteristics of something.

* Texture, color, smell, size, and shape are all quantitative observations.
* *For example*, just looking at this page you might observe that the paper is rectangular, white, and smooth. It has black letters. The font is small.

**Quantitative Observations**- Observations that involve measurements. There *MUST be a number* for an observation to be quantitative.

* Number, height, weight, time, length, and speed are all quantitative observations.
* *For example*, looking at this page you might observe that the paper is 8.5 x 11 inches, there are 324 words on the page, and the paper weighs .35 grams.

**TASK 1- Make observations!**

*Go somewhere*- your kitchen, your bedroom, the sidewalk, in your refrigerator, the park, ANYWHERE, and make some observations.

Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Qualitative observations:** *Physically* describe 5 different objects that you see. (*Ex.- blue car, soft square pillow, brown furry dog, et*c.)

1.

2.

3.

4.

5.

**Quantitative observations:** *Count/measure* 5 different objects that you see. (Ex.- *1 jar of pickles with 8 pickles inside, 3 trees, 4 ounces of cheese, etc.*)

6.

7.

8.

9.

10.

**TASK 2- Ask Questions!**

A good scientist asks questions about the things they observe. All scientific experiments begin with a question. **Ask a question about each of your observations!!!!!!** No question is a bad question- dare to be creative!! (For example- *How fast can the blue car drive? Can the brown furry dog swim? How many pickles can I eat in 1 minute? How long does it take to chop down a tree? At what temperature does cheese melt?*)

**Questions:**

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**TASK 3- Take a Guess!**

Scientists use their knowledge to come up with educated guesses about their questions. A possible answer to a question is called a hypothesis. Try to answer each of the questions you asked! THERE IS NO WRONG ANSWER! In science, every hypothesis is considered a good hypothesis, because every hypothesis can lead to further research.

**Examples:**

*Question 1: How fast can the blue car drive? Hypothesis: I think the blue car can drive 120 mph.*

*Question 2: Can the brown furry dog swim? Hypothesis: I think the brown furry dog can swim.*

*Question 3: How many pickles can I eat in 1 min? Hypothesis: I think that I can eat 8 pickles in 1 minute.*

**Your Turn! Write a hypothesis for each of your 10 questions.**

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**Task 4: Can You Find the Answers?**

Extra credit if you can figure out the answers to your questions. Is your hypothesis (your educated guess) correct? There are some questions you might not be able to answer, some questions you might be able to look up, and some questions you might be able to answer by testing it out! **Write your answer AND how you got your answer (Internet, asking someone, experimenting, etc.).** If you were unable to answer a question, please write that.

**Example:**

***Hypothesis:*** *I think that I can eat 8 pickles in 1 minute.*

***Answer:*** *I tried it, and I actually ate 6 pickles in 1 minute.*

**My Answers:**

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