**The Beginning of Scientific Research**

**Problem Statement::**

Over the past several months, ecologists along the South Carolina shore line have been noticing a new species.  Diopatra cuprea is an intertidal worm that burrows into the sand along the beach’ shore line.  When the tide comes in, the worm is inundated by water.  During this time, the worm comes out of its burrowed hole in the sand through its feeding tube and feeds on small zooplankton.  When the tide goes back out the worm goes back into the hole.  Lately scientists have noticed that the tube the worm lives inside of has been covered with a new species of algae.  Gracilaria vermicophelia is an algae believed to be indigenous to China.  The plant attaches to the worm’s tube that sticks out approximately an inch above the sand.  This is the perfect place for the algae to live since it gets the perfect amount of sunlight and water.  The algae however pulls very hard against the worm’s tube when the tide goes out.  If the tide or current is very strong it can cause the worm’s tube to break.  The worm has to rebuild this tube in order to come out during high tides and feed.  It takes the worm a lot of time and energy to rebuild the tube but without the tube the worm will drown or starve.  Scientists are not sure what this symbiotic relationship will do the Diopatra cuprea population.

1. **New Words:** (List and define the words in the paragraph you did not know)

1. **Background:** (List any background information you would need to research more about to really understand this problem)

knows need to knows

1. **Purpose statement:**  Summarize the central idea of  this issue into one sentence.

1. **Hypothesis:** (If we as scientists measure …………. then we expect ……… to happen)  This should be a rational and logical explanation of what you expect to happen to one of these organisms based on this information you have received)