Designing a Procedure for Product Testing

Background
Your company prides itself on the idea that it creates the “best” coatings for common everyday items. Your job as the company’s research engineer is to be able to back up these claims by providing reasoning and evidence from the lab testing you perform in your lab.

As the lead researcher, you must create the detailed list of procedures required for your employees to complete. You must also create the data table for them to fill in to be able to compare the results from these different types of tests.

Pre-Activity Questions
For each of the following pieces of data, state whether it is qualitative or quantitative:
1. temperature of a glass of water
2. color of paint on a house
3. time it takes a person to run a mile
4. number of M&M’s in a bag
5. behavior of a bird in a tree

Procedure
1. Your teacher will assign you or your group a type of coating that you will have to create a list of stresses that would impact it.
2. Once the stresses have been identified, you are to create a detailed procedure for how to test that variable on your coating.
3. Your group must decide on at least 3 pieces of qualitative data and 3 pieces of quantitative data that can be collected to answer the question above.
4. You will need to develop a step-by-step, detailed procedure for testing each property, and create one comprehensive data table that could be used to record all your findings.

Detailed Procedure
Write your procedure below:
Data
Create your data table below:

Analysis
1. Which of your experimental procedures provided qualitative data?

2. Which of your experimental procedures provided quantitative data?

3. What challenges did your team face in creating your procedures?

Conclusion
Describe in one sentence how this activity reinforces what happens in the real world and in industries.