Problem, Research and Hypothesis Handout
Exploring the Electromagnetic Spectrum and Phosphorescence with Design Intent

**Problem:** To create a phosphorescent bioplastic by using the following reaction scheme:

\[
\text{corn starch + water + vinegar + glycerin + phosphorescent powder} \rightarrow \text{polymer bioplastic}
\]

**Objective/Design Challenge:** You want your bioplastic to glow, but also have structural integrity.

What does structural integrity mean to you?

______________________________________________________________________________

**Procedure:** The class will be divided into groups. Each group will be in charge of manipulating one of the reactants in the scheme by increasing its concentration from a provided standard/control bioplastic procedure.

The reactant that your team will be manipulating: ________________________________

**Reactant Research**

**Hypothesis**

<table>
<thead>
<tr>
<th>independent variable</th>
<th>dependent variables</th>
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Using your research and prior knowledge, construct a hypothesis that includes both your variable and how it will change in the experiment: