Name: ______________________

Junior Technologist of Floor Care

Background
The Senior Technologist of Floor Care has applied finishes to the floor tiles. The finishes include: Acrylic–Polymers, Resin, Plasticizers, and Wax emulsion, which are all meant to shine and protect the floor. Scientists (like the Senior Technologist) use trial and error to find the right solution for the problems they are attempting to solve. Today you are helping the Senior Technologist see how well his chemical finish works on the tile.

Objective
You will perform 2 types of test to determine which chemical performs at the highest level. The chemicals that were placed on the tile are on display in the front of the room. The tiles and the finishes are labeled Tile A, Tile B, and Tile C. On your activity sheet you will list your data that your team has collected from each test.

Materials
- Student Activity Sheet
- Pencil
- 3 Tiles for your group
- Penny
- Water
- Paper Towel

Procedure
1. One member will gather materials and distribute to team members.
2. Each student will complete a scratch test on each tile sample. To do this, Use a penny, and scratch the edge of the penny on the surface of the tile sample several times, in multiple directions.
3. Discuss what each member observed during their individual scratch testing. Record your results in the table below and determine a rating number based on the scale provided.
4. Each student will complete a water test. To do this, wet a paper towel so that it is extremely wet. Wipe the wet towel across the surface of the tile. Wait for the water to begin to dry and observe any changes.
5. Discuss what each member observed during their individual water testing. Record your results in the table below and determine a rating number based on the scale provided.

Rating Scale

<table>
<thead>
<tr>
<th>Scratch Test</th>
<th>Water Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating “1” = No scratch observed</td>
<td>Rating “1” = No change/evidence of water after it dries</td>
</tr>
<tr>
<td>Rating “2” = Light marking, little scratches are noticed</td>
<td>Rating “2” = Light cloudy covering, see through, transparent residue</td>
</tr>
<tr>
<td>Rating “3” = Heavy dark marks, pulled material, indentation in the tile</td>
<td>Rating “3” = Heavy white cloud covering, non-transparent residue</td>
</tr>
</tbody>
</table>
### Data

<table>
<thead>
<tr>
<th>Sample</th>
<th>Scratch Test Result</th>
<th>Water Test Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tile A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tile B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tile C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Analysis

1. How did your group determine the rank for each tile?

2. Did team members have a consistent/same ranking for each tile, why or why not?

3. Why do you think different coating have different results from the scratch test and the water test?

4. As the Junior Technologist of Floor Care, which coating do you think is the best for use on floor tile?