**Description of Assignment**

First, make dishes equally dirty and design and conduct experiments to evaluate which type of weathering analogy would best aid in cleaning the dishes.

Then compare experimentally determined weathering rates for food with weathering rates for rocks by calculating the time necessary to weather selected objects.

**WHY DO IT?**
- Simple, apt analogy
- Relates to everyday chore
- Continual reminder - think about geology after every meal

**Practice conducting experiments**
- Use control and multiple variables
- Semi-quantitative
- Discussion and interpretation

**Calculate erosion rates and relate personal experience to geologic time**
- Highlights slow rock weathering rates compared to rates for food
- Quantitative

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<table>
<thead>
<tr>
<th>What they did</th>
<th>Geologic Time</th>
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</thead>
<tbody>
<tr>
<td>Dirty the dishes</td>
<td>Calculate empirical weathering rate</td>
</tr>
<tr>
<td>At least 4 dishes (1 control, 3 experimental)</td>
<td>For most effective technique, calculate loss in thickness; divide by time (mm/min)</td>
</tr>
<tr>
<td>Area and depth of dirt measured</td>
<td>Calculate time req'd to weather mound of food the size of the geology building (50m)</td>
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<tr>
<td>The dressed enchilada pan (Katie Petrie)</td>
<td>Calculate time req'd to weather mound of food the depth of the Grand Canyon (1600m)</td>
</tr>
<tr>
<td>Baked BBQ sauce in Pyrex pans (Teddy Salutos)</td>
<td>Determine methods</td>
</tr>
<tr>
<td>Burnt eggs in non-teflon pans (Siri Wutolia)</td>
<td>At least 3 different methods</td>
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</tbody>
</table>

**Determine methods**
- At least 3 different methods
- All methods should be analogy for geologic process

**Do the dishes!**
- Experiments are run and timed
- Clockwise from top left: control, abrasion (scrubber), freeze-thaw, acid soak (lemon juice) (Laura Hoff)

**Determine the winner**
- Abrasion (scrubbing, left) vs. hydration-abrasion (right) (Teddy Salutos)

**Interesting observations**
- Non-salted Cream of Wheat erodes more easily than salted Canadian whiskey, Pepsi are effective but leave residue
- Freeze-thaw is the consistently least effective method

**Tips and tricks**
- Give students a required subject for E-mail submission
- Limit write-ups to two pages (not including photos)
- Request photos of experiments, students

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*Data from: Roberts, Sheila 2000, Reinforcing quantitative skills with applied research on tombstone-weathering rates, Journal of Geoscience education, vol. 48, pg 469-473*