Cupcake, You’re Out!
Question

What will happen if you leave an ingredient out of a cupcake recipe?
I think that each ingredient in the recipe is important and if you leave one out it will ruin the cupcake.
Variables

Independent: The ingredient left out of the cupcake recipe
Dependent: The cupcake’s taste, smell, batter, consistency, and appearance
Controlled: Dry cake mix, baking time and temperature
Materials

- 4 Boxes of Cake Mix
- Water
- Eggs
- Vegetable Oil
- 4 Mixing Bowls
- Mixer
- Spoon
- Cupcake Wrappers
- Oven
- Muffin Tin
Procedures

Heat oven to 350°F.

Mix Cake Mix, water, oil, and eggs in a large bowl with mixer.

Place cupcake wrappers in cupcake pan and pour batter into pan.

Bake for 15 minutes.

Repeat 3 more times, leaving out one ingredient of oil, water, and eggs.

Record your observations.
### Collection Tool

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>No Eggs</th>
<th>No Water</th>
<th>No oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batter:</td>
<td>light yellow, good consistency, smells yummy</td>
<td>Batter: white, slightly thick, smells good</td>
<td>Batter: yellow, very thick (hard to stir), smells normal</td>
<td>Batter: yellow, very runny, smells normal</td>
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<tr>
<td>Cupcake:</td>
<td>soft, normal, moist, tastes delicious</td>
<td>Cupcake: Falling apart, soft, fluffy, puffy, yummy</td>
<td>Cupcake: Did not bake completely, dry, hard, can taste veg. oil</td>
<td>Cupcake: looks most like the control group, spongy, dry, flavorless</td>
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Aha!

My discoveries

My prediction was right and wrong. Leaving out one ingredient did not totally ruin the taste, shape, appearance, and smell in all cases. However, each ingredient plays an important role in creating the perfect cupcake.
Eggs provide cupcakes with their shape, richness, color and flavor.
Oil makes cupcakes tender, keeps them moist and allows them to turn brown. It also helps to move heat into the cupcake.
Water mixes with flour and helps to give the cupcake a good consistency. It helps to balance the other ingredients too.
Good Bye
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By Niyel Reddock
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## Data Collection Tool

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