Resonance, VSEPR, and Bronsted-Lowry
Supplemental Instruction
Iowa State University

Leader: Katherine
Course: CHEM 231
Instructor: Jeffries-EL
Date: Wednesday, September 2

Review of material covered in lecture Monday, August 31:

**Resonance**
CLUES for RESONANCE

```
\[
\begin{align*}
\text{Resonating structures:} \\
\text{A representative structure:}
\end{align*}
\]
```

**VSEPR Theory**

<table>
<thead>
<tr>
<th>Hybridization</th>
<th>Number of hybrid orbitals</th>
<th>Name of “p” orbitals</th>
<th>Bond Angles</th>
<th>Clues to Identify</th>
</tr>
</thead>
<tbody>
<tr>
<td>sp(^3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sp(^2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sp</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Acids and Bases
BRONSTED-LOWRY...

ACID →
BASE →
C. ACID →
C. BASE →

\[ \text{HCO}_3^- + \text{H}_2\text{O} \rightarrow \text{H}_2\text{CO}_3 + \text{OH}^- \]

\[ \text{H}_2\text{SO}_4 + \text{H}_2\text{O} \rightarrow \text{H}_3\text{O}^+ + \text{HSO}_4^- \]

Challenge Question

For each carbon…

CIRCLE if it is sp\(^3\)
BOX if it is sp\(^2\)
ARROW if it is sp