## **Workshop 3 Solutions Charge and Resonance**

1. 
$$H_{3}C - \overset{\bigcirc}{\bigcirc} \bullet \overset{\bigcirc}{\bigcirc} \qquad H_{3}C - \overset{\bigcirc}{\bigcap} \bullet \overset{\bigcirc}{\bigcirc} C + \overset{\bigcirc}{\bigcirc} \bullet \overset{\bigcirc}{\bigcirc} \overset{\bigcirc}{\bigcirc} \bullet \overset{\bigcirc}{\bigcirc} \overset{\bigcirc}{\bigcirc} \bullet \overset{\bigcirc}{\bigcirc} \overset{\bigcirc}{\bigcirc}$$

In my opinion, the best way to keep track of this is to look for a number of bonds that doesn't match the typical valency of an atom (2 for oxygen, 3 for nitrogen).

2.

Bad: Unfilled octet.

Good: Negative charge on electronegative atom.

atom.

Bad: Negative charge on electropositive atom.

consensus structure

Bad: Multiple, opposite charges where they don't need to be.

very minor

very minor

 $\begin{array}{c} {\rm O}^{\,\delta^{-}} \\ {\rm H}_{3}{\rm C} - {\rm S}^{\,\frac{\delta^{+}}{3}} {\rm CI} \\ {\rm O}_{\,\delta^{-}} \end{array}$ 

consensus structure Very Bad: Positive charge on most electronegative atom.