1. **Exam Review, Entering Focus of Class: Reaction Mechanisms, Next Time: Carboxylic Acids**

   **Intro to Mechanisms**

   **Bond-Breaking:** "Homolytic" (Each gets 1 e⁻)
   "Heterolytic" (One gets 2, one gets none)

   - **Homo:** No formal charge, but there are incomplete octets
   - **Hetero:** AKA polar (or ionic) reactions

2. **NuCl/E**

   - Identify NuCl/E indicators

   **Table 6.3: A Summary of Some Common Nucleophilic Centers and Electrophilic Centers**

   - | Nucleophiles | Electrophiles |
   - | Feature | Example | Feature | Example |
   - | Inductive effects | H₂⁻ | Inductive effects | H⁺ |
   - | Lone pair | Empty p orbital |

   **Common Final Groups → Sort Post-Its**

   - **Hydroxide**
   - **Natal**
   - **Cyanoide**
   - **Bromide**
   - **Alcohol**
   - **Amine**
   - **Alkene**
   - **Alkene**

   - **Carboxylation**: Carbon with +1 charge can be used to add to nucleophiles.
   - **Ketone**
   - **Acid Chloride**
   - **Alkyl Chloride**
   - **Alkyl Bromide**

3. **Bond-Forming**

   - **NuCl Attacks E**
   - **Proton Transfer:** "Picks up" H + "Kicks off" E
   - **Leaving Group:** "Kicked Off"
6.11 For each of the following cases, read the curved arrows and identify which arrow-pushing pattern is utilized:

(a) The curved arrow indicates a hydride shift, which is a type of carbonium rearrangement.
(b) The curved arrow indicates a nucleophilic attack. In this case, water functions as a nucleophile and attacks the carbonium.
(c) The curved arrow indicates a proton transfer. In this case, water functions as the base that removes the proton.
(d) The curved arrow indicates a nucleophilic attack. In this case, one of the lone pairs on the oxygen acts as a nucleophile that attacks the electrophilic center.
(e) The curved arrow indicates loss of a leaving group (Cl).

IN GENERAL: SHOW MECH OF RXN (ONE OF 3 TYPES)
- DETERMINING IF RXN HAPPENS: CONSIDER STABILITY OF PRODUCTS
- EXPECT TO SHOW FOR EACH STEP: ID WHICH TYPE

Draw the curved arrows that accomplish the following transformation:

6.15 Draw the curved arrows that accomplish each of the following transformations:

(a) 

(b) 

(c) 

PREDICTING & IDING MECHS:

6.31. The sequence of arrow-pushing patterns is as follows:

NUCLEOPHILIC ATTACK

LOSS OF A LEAVING GROUP

6.35. The sequence of arrow-pushing patterns is as follows:

NUCLEOPHILIC ATTACK

LOSS OF A LEAVING GROUP

NUCLEOPHILIC ATTACK

PROTON TRANSFER