Aldehydes and Ketones

- The functional group C=O is called the **carbonyl group**
- For **aldehydes**, the carbonyl functional group is at the **end** of the molecule
    - i.e., the carbon in C=O is bonded to **one** or **zero** carbon atoms
- For **ketones**, the carbonyl functional group is **inside** the molecule
    - i.e., the carbon in C=O is bonded to **two** carbon atoms

Naming Aldehydes

1. Identify the parent alkane chain.
2. Replace the final "e" with an "al".

E.g.

Naming Ketones

1. Identify the parent alkane chain.
2. Replace the final "e" with an "one".
3. Indicate which carbon has the double bonded O using a number in front of the name.

E.g.

Properties of Aldehydes and Ketones

Aldehydes

- Aldehydes are **SMELLY**! **Small** ones smell **gross** (formaldehyde). **Big** ones smell **nice** (flowers, essential oils).

Ketones

- Ketones are nearly **odourless**. Pheremones are an example of ketones.
    - Another example is propanone (a.k.a. acetone, which is in nail polish remover)

*** Both aldehydes and ketones are **polar** and **dissolve in water**. ***

- but the **bigger** they get, the more **non-polar** they become

Aldehydes and Ketones

- The functional group C=O is called the _____
- For _____, the carbonyl functional group is at the ___ of the molecule
    - i.e., the carbon in C=O is bonded to ____ or _____ carbon atoms
- For _____, the carbonyl functional group is _____ the molecule
    - i.e., the carbon in C=O is bonded to _____ carbon atoms

Naming Aldehydes

1. Identify the parent alkane chain.
2. Replace the final “e” with an “al”.

E.g.

Naming Ketones

1. Identify the parent alkane chain.
2. Replace the final “e” with an “one”.
3. Indicate which carbon has the double bonded O using a number in front of the name.

E.g.

Properties of Aldehydes and Ketones

Aldehydes

- Aldehydes are _____! _____ ones smell _____ (formaldehyde). _____ ones smell _____ (flowers, essential oils).

Ketones

- Ketones are nearly _____. Pheromones are an example of ketones.
    - Another example is propanone (a.k.a. acetone, which is in nail polish remover)

*** Both aldehydes and ketones are _____ and _____. ***

- but the _____ they get, the more _____ they become