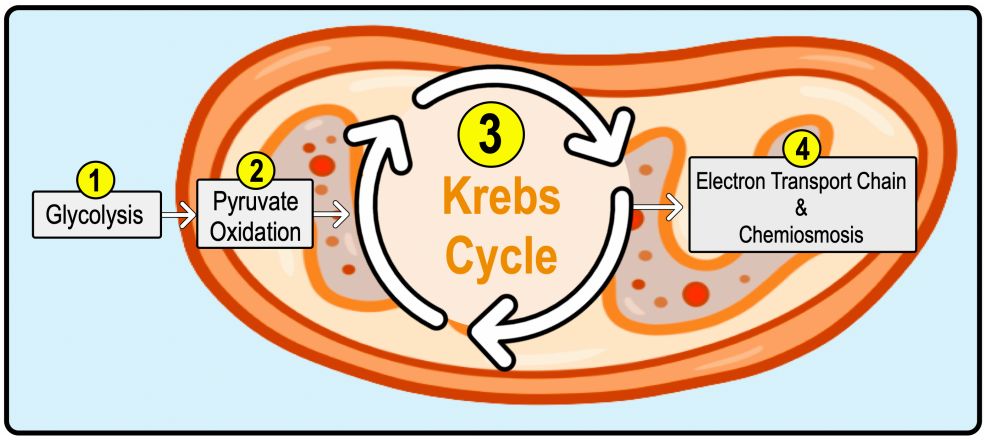
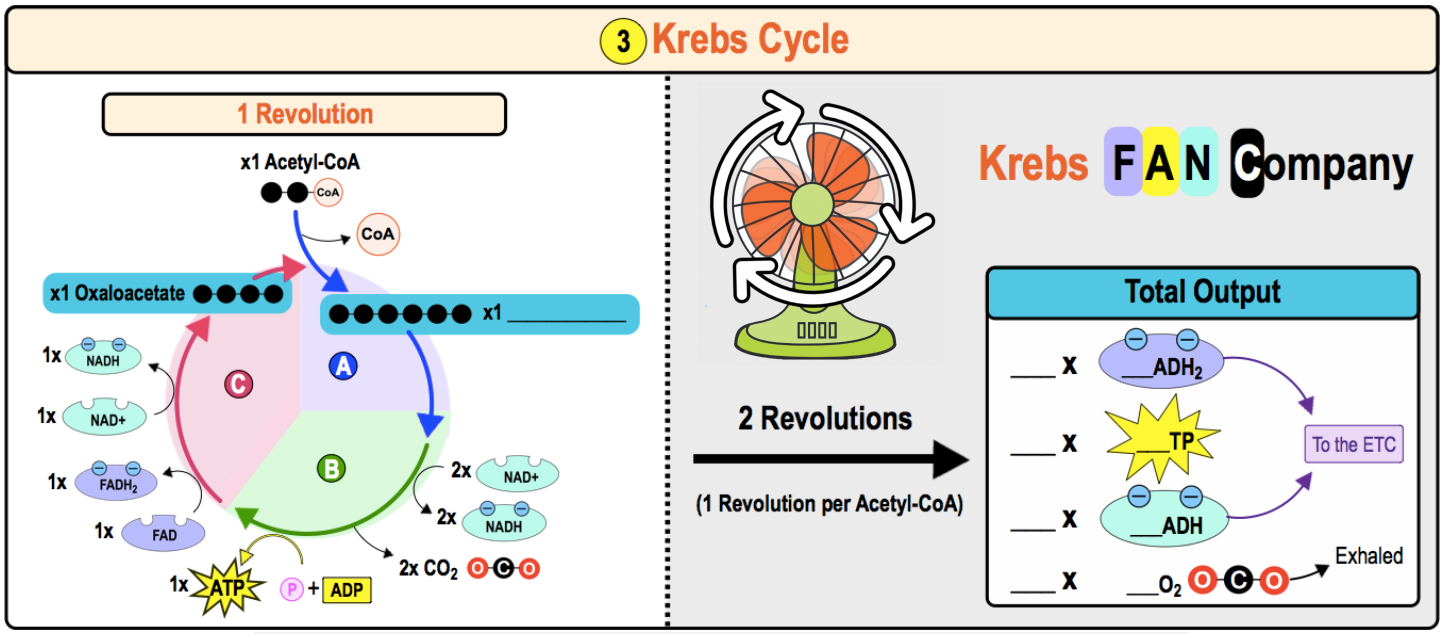
**CONCEPT:** KREBS CYCLE

- _____ **Cycle**: 3rd stage of aerobic cellular respiration; also known as the ***Citric Acid Cycle*** & the ***TCA Cycle***.
  - □ Oxidizes acetyl-CoA *producing* energy in the form of ATP, NADH, & $FADH_2$.




## Phases of The Krebs Cycle

- Krebs Cycle consists of a series of *multiple* reactions, which can be grouped into _____ phases:
  - **A** **Acetyl-CoA Entry**: *2 carbons* of Acetyl-CoA enter & react with *oxaloacetate*, producing _____.
    - □ NOTE: "CoA" does _____ enter the Krebs Cycle (just the _____ carbons enter).
  - **B** **Citrate Oxidation**: Rearrangement & _____ of *citrate*.
    - □ Produces of 1 ATP & 2 NADH, & 2 $CO_2$ molecules.
  - **C** **Oxaloacetate Regeneration**: _____ of *oxaloacetate* by *oxidation*.
    - □ Produces 1 NADH & 1 $FADH_2$ molecule.
- _____ rounds of the Krebs Cycle occur for every 1 glucose molecule (1 round of Krebs Cycle per acetyl-CoA).



**CONCEPT:** KREBS CYCLE

**EXAMPLE:** How many turns of the Krebs Cycle are needed to completely break down one molecule of glucose?

a) 2. b) 3. c) 1. d) 4. e) 5.

**PRACTICE:** Which product of the Krebs cycle is also used as a reactant in the Krebs cycle?

a) Citrate.
b) ATP.
c) Acetyl-CoA.
d) Oxaloacetate.

**PRACTICE:** Taking one molecule of glucose through glycolysis, pyruvate oxidation, and the Krebs cycle generates:

a) 6 $CO_2$, 8 NADH, 2 $FADH_2$ and 4 ATP**.**
b) 6 $CO_2$, 8 NADH, 1 $FADH_2$ and 2 ATP.
c) 6 $CO_2$, 10 NADH, 2 $FADH_2$ and 4 ATP.
d) 6 $CO_2$, 10 NADH, 2 $FADH_2$ and 2 ATP.