

DNA Replication

Is about...

Quick and correct copying of the chromosomes in a cell's nucleus.
This duplication occurs only during the synthesis phase of Interphase.
Replication must happen before mitosis.

Step 1

Separating the double helix

What happens...

DNA helicase breaks the hydrogen bonds in the middle of the double helix.
Allows the nucleotide sequences of the original strands to be read

Step 2

Add new nucleotides

What happens...

Two strands of new DNA are added, but in opposite directions.
End result is one continuous strand and one fragmented strand

Step 4

Realization of two new strands

What happens...

Completely replicated strands separate, each with half original and half new DNA.

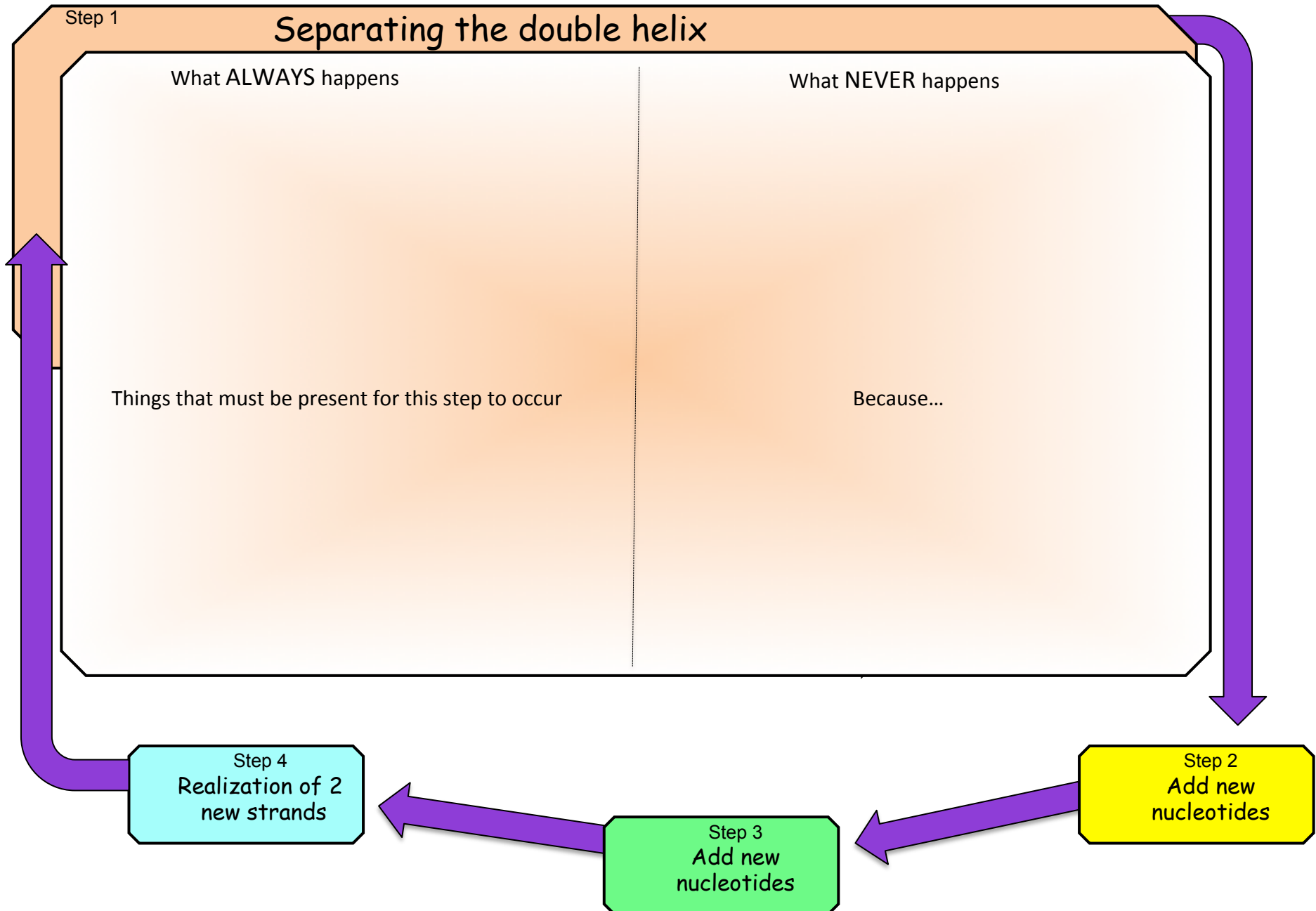
Step 3

Proofread and Binding

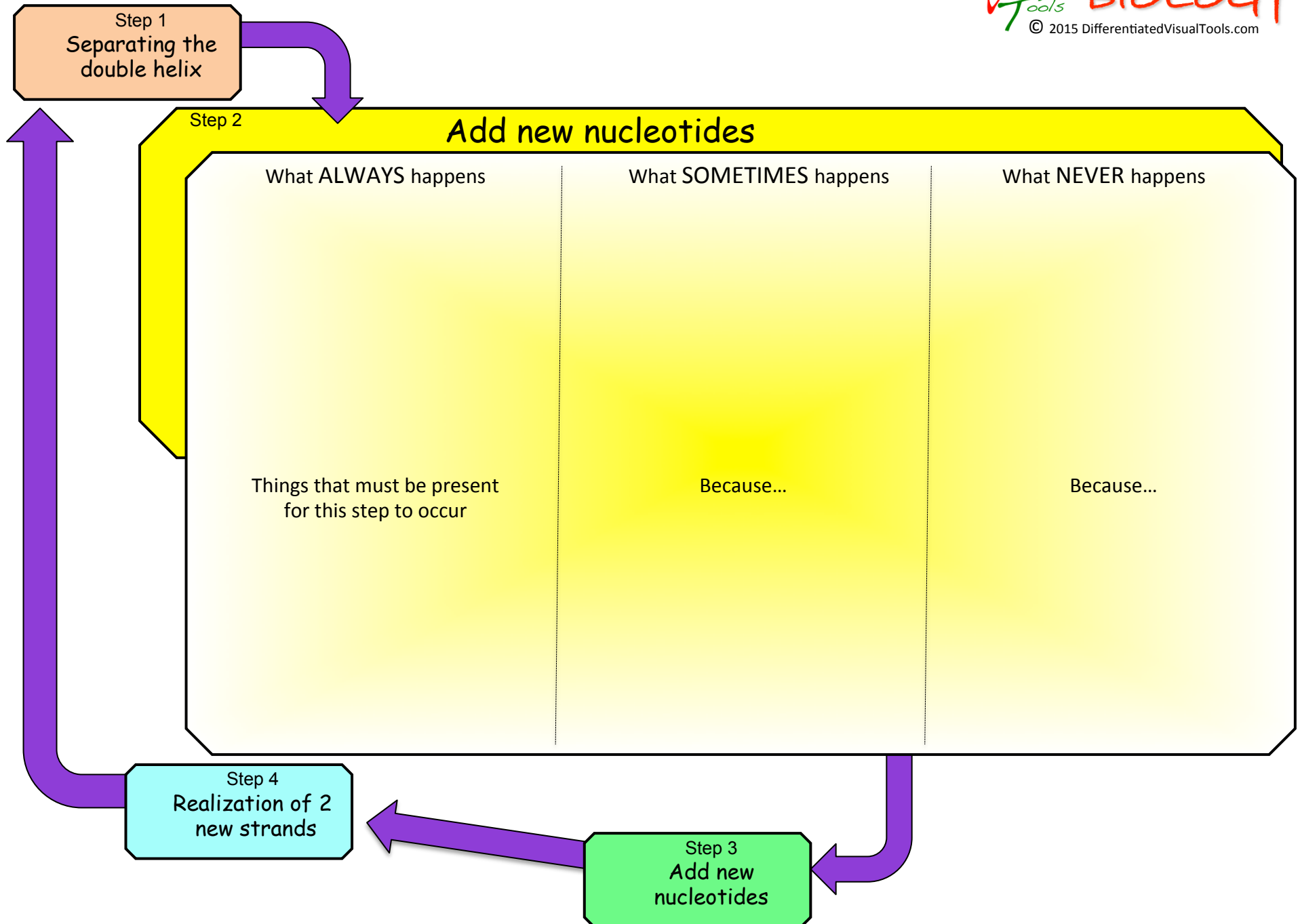
What happens...

Polymerase checks the new sequences for accuracy while Ligase fills in gaps in the fragmented strand.

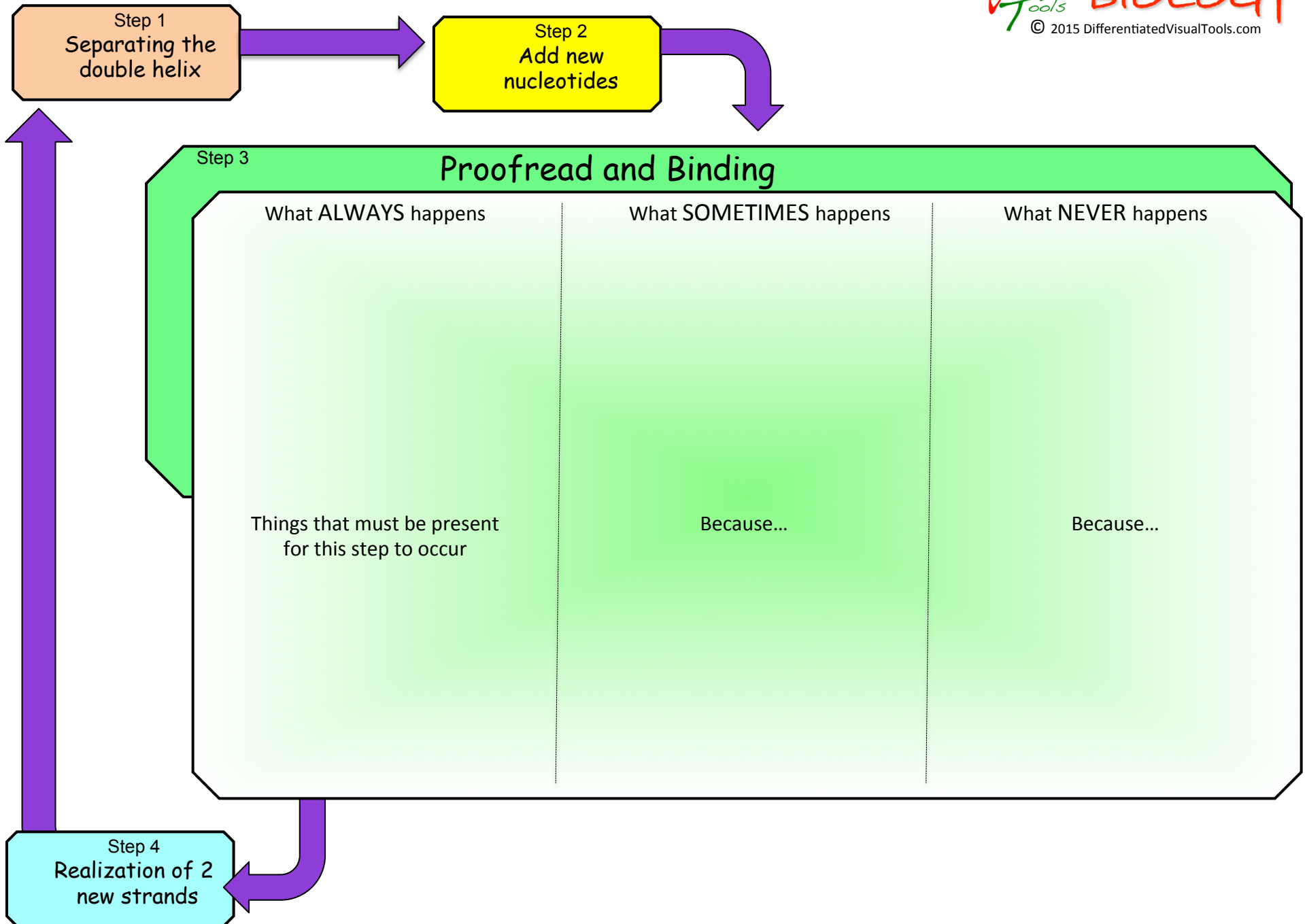
Step 1 of 4-STEP Cycle



Step 2 of 4-STEP Cycle



Step 3 of 4-STEP Cycle



Step 4 of 4-STEP Cycle

