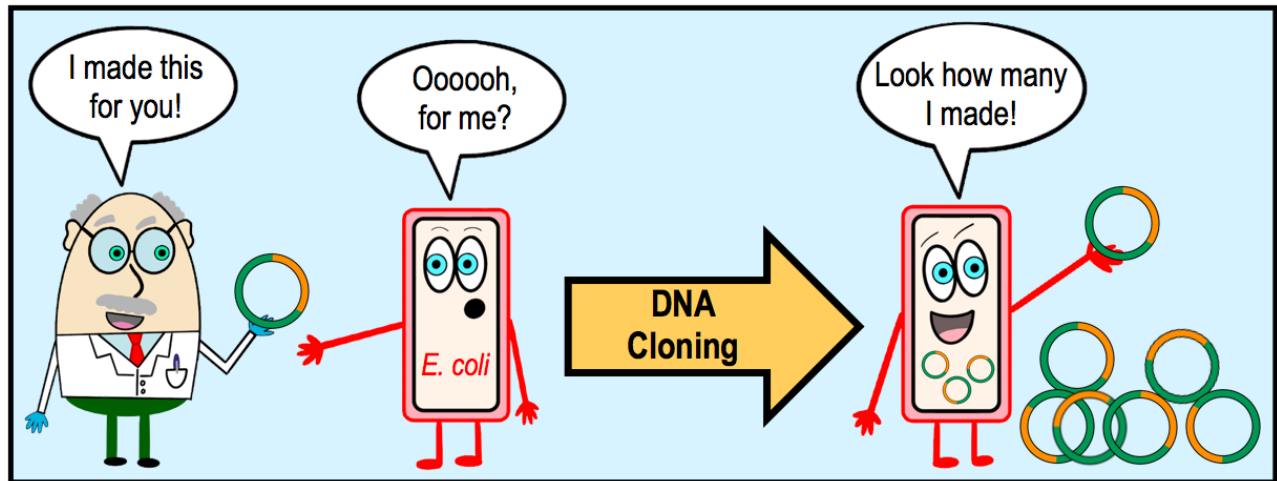


CONCEPT: INTRODUCTION TO DNA CLONING

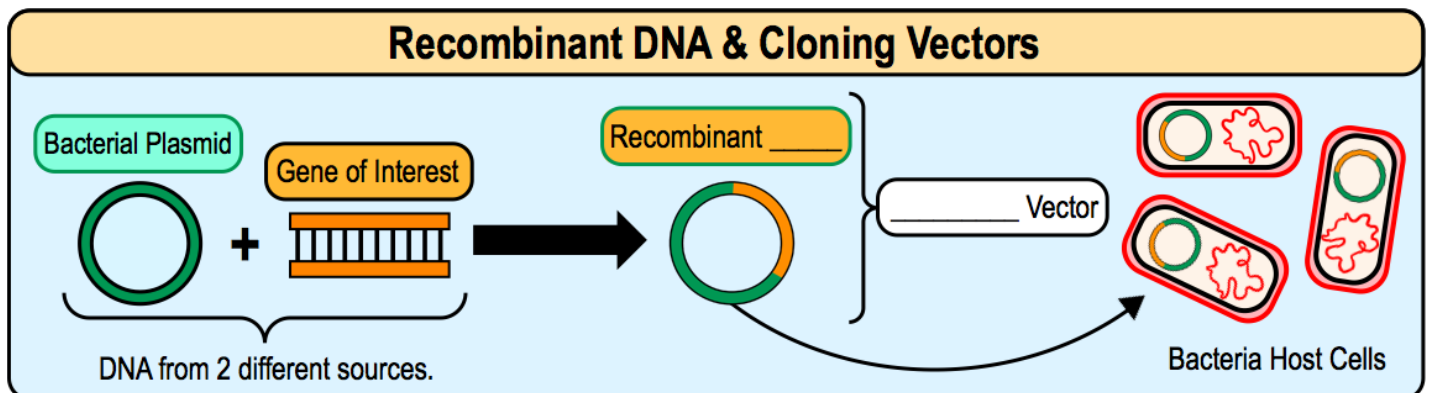
- **DNA _____**: the process of creating many *identical* copies of DNA (ex. a gene) *inside* a *cell*.
- There are a series of *biochemical reactions* researchers use to produce DNA containing a **specific sequence** of interest.
 - Cloned DNA is transferred into a host cell where it is _____ many times.



Cloning with Recombinant DNA

- Scientists tend to create & clone *recombinant DNA* for genetic experiments.
 - **_____ DNA**: a molecule that contains the DNA from two _____ sources.
 - These sources are often different _____.
- **Bacterial _____**: small *circular* DNA molecules replicated independent from the organism's genome.
 - Used as **cloning _____**: **plasmids** that carry a **gene of interest** (ex. *foreign DNA*) into a host cell.

EXAMPLE: Creating recombinant DNA plasmids to be used as cloning vectors.



- In other words, cloning vectors are forms of **recombinant DNA** that carry the *foreign DNA* into a host cell to be replicated.

CONCEPT: INTRODUCTION TO DNA CLONING

PRACTICE: Small accessory rings of DNA that replicate independently of an organism's genome are called ____.

- a) Recombinant DNA.
- b) Plasmids.
- c) Clones.
- d) Transposons.

PRACTICE: In DNA technology, the term “vector” can refer to:

- a) The enzyme that cuts DNA into restriction fragments.
- b) The sticky end of a DNA fragment.
- c) A SNP marker.
- d) A vehicle used to transfer DNA into a living cell.

PRACTICE: What is recombinant DNA made of?

- a) Restriction enzymes and target DNA.
- b) Target DNA and DNA ligase.
- c) DNA from two different sources.
- d) A bacterial chromosome and a bacterial plasmid.
- e) None are correct.