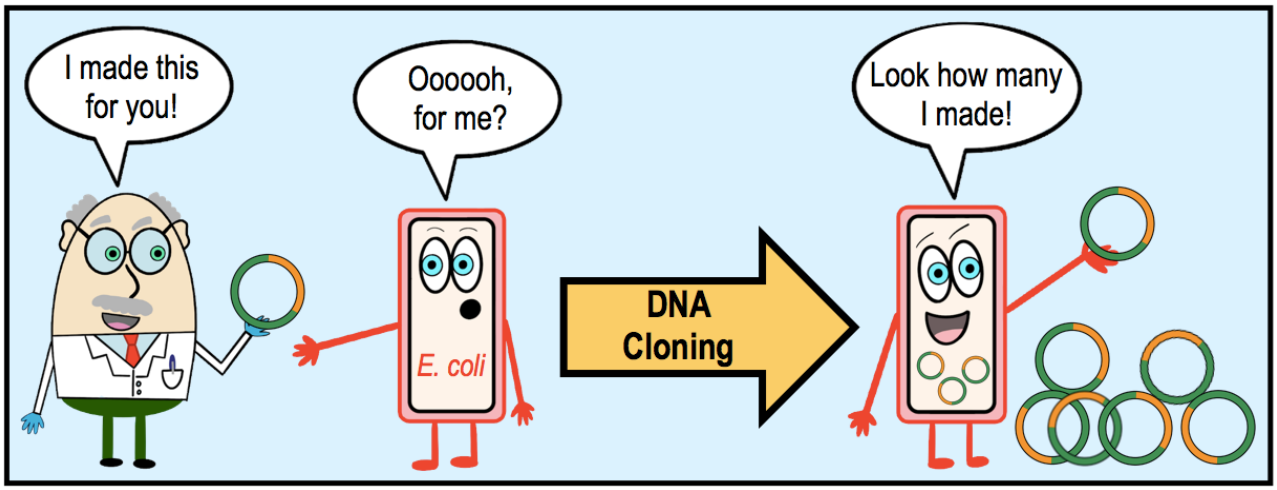
CONCEPT: INTRODUCTION TO DNA CLONING

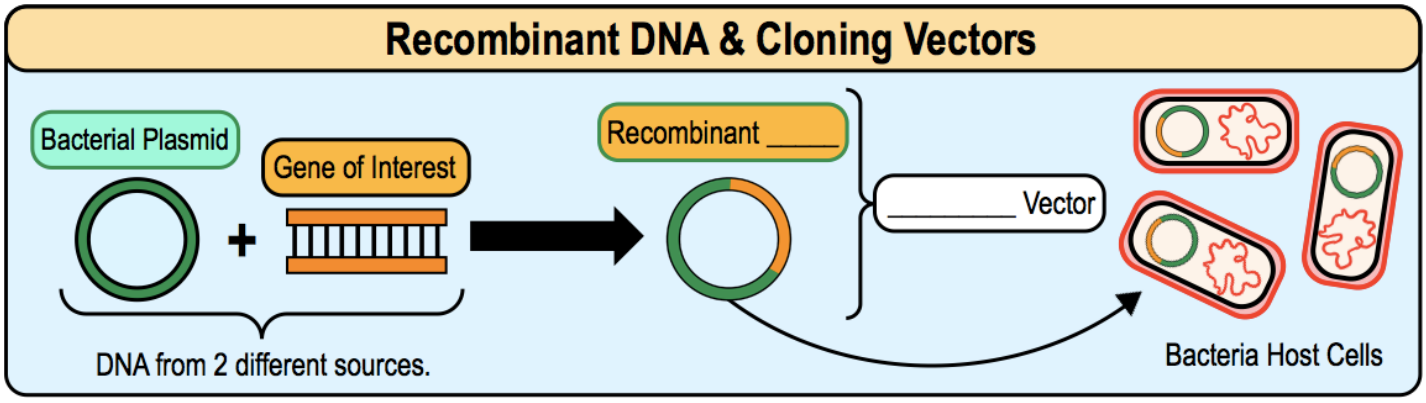
- **DNA _____:** the process of creating many *identical* copies of DNA (ex. a gene) *inside* a *cell*.
- There are a series of *biochemical reactions* researchers use to produce DNA containing a ***specific* sequence** of interest.
  - □ Cloned DNA is transferred into a host cell where it is _____ many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