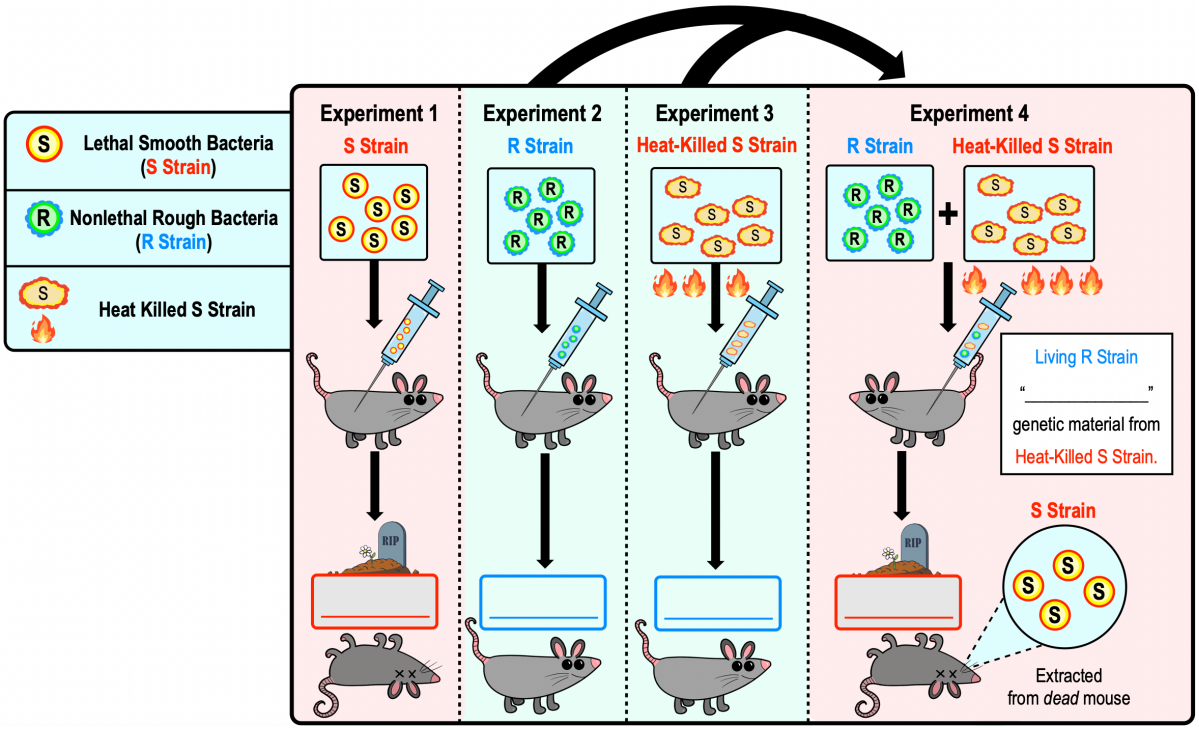
CONCEPT: THE GRIFFITH EXPERIMENT

●In 1928, Frederick Griffith's experiment identified that some *unknown* genetic "factor" controls the traits of organisms.

□ Griffith showed that bacteria have the ability to _____ genetic material.

□ **Transformation**: the _____ of external DNA, resulting in a genotypic & phenotypic change.

EXAMPLE: Griffith's Experiment Showed Bacteria Can Transform the Genetic Material.



●Later work by Oswald Avery, Maclyn McCarty, & Colin MacLeod identified the *transforming substance* as _____.

□ Many scientists still remained skeptical & felt that *proteins* were a better candidate for the genetic material.

PRACTICE: The bacteria that Griffith experimented with were termed "R" and "S" bacteria because:

a) Of the way they grew on artificial media.
b) The "S" bacteria formed smooth appearing colonies.
c) The "R" bacteria formed rough appearing colonies.
d) All are correct.

PRACTICE: In his transformation experiments, what phenomenon did Griffith observe?

a) Mixing a heat-killed pathogenic strain of bacteria with a living nonpathogenic strain converts the living cells into the pathogenic form.
b) Mixing heat-killed nonpathogenic bacteria with a living pathogenic strain makes the living strain nonpathogenic.
c) Infecting mice with nonpathogenic strains of bacteria makes them resistant to pathogenic strains.
d) Mice infected with a pathogenic strain of bacteria can spread the infection to other mice.