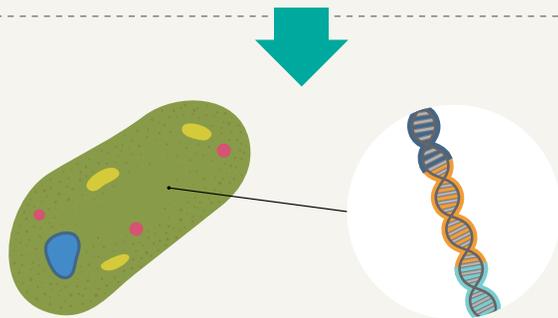
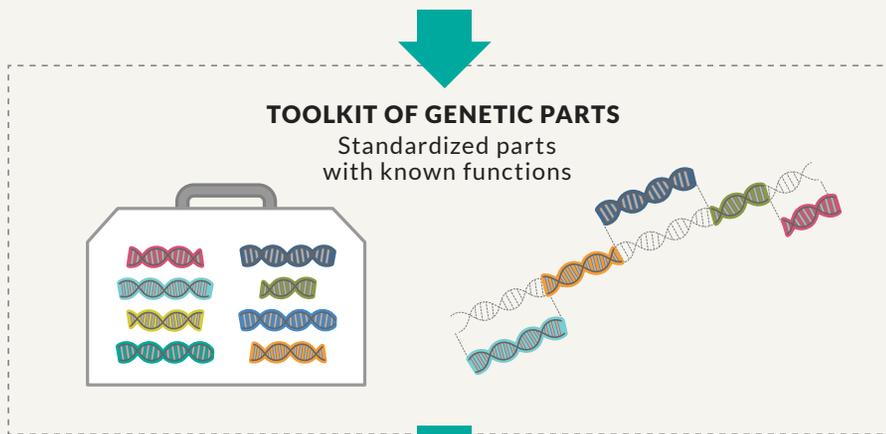
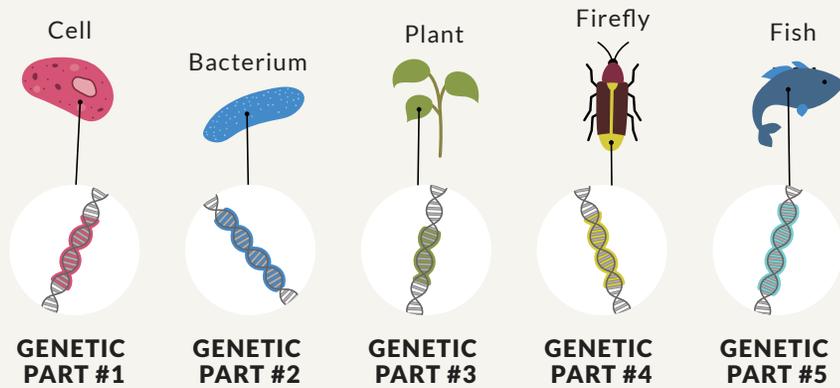


# Synthetic Biology



**Synthetic biology** combines tools and knowledge from biology and engineering to build new living organisms and materials. Scientists are developing a library of standardized biological parts with known functions, which can be mixed and matched to create new or modified living organisms. With synthetic biology, modified bacteria, algae, and yeast cells can be programmed to become tiny factories that produce new materials.

## EXAMPLES:

Synthetic biology may provide solutions to problems in areas such as food security, healthcare, energy, and the environment.



### Antimalarial drug

A key ingredient can be grown from modified yeast



### Glowing plant

Glow-in-the-dark plants can be made using an enzyme from fireflies



### More sustainable detergents

Ingredients can be grown from modified algae



### Food flavoring

Synthetic vanilla can be grown from modified yeast