6: INSIDE A CELL

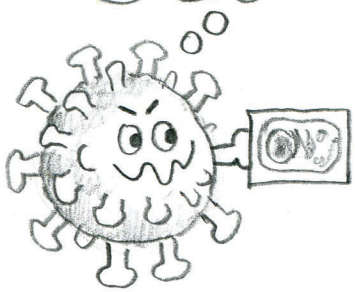
What does a cell look like from a virus's viewpoint?

What materials and tools are available?

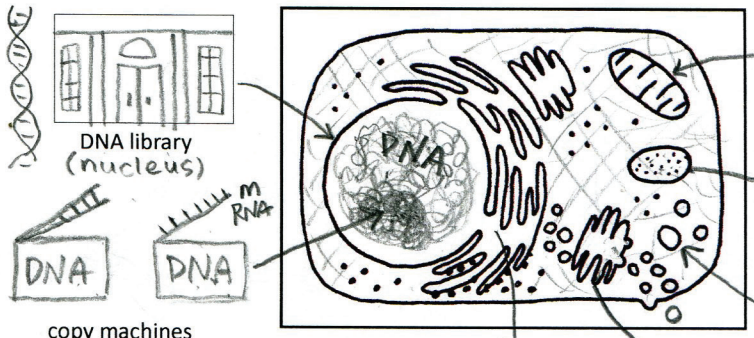
Where are the best locations to work?

Are there any dangers?

Will the cell's neighbors find out that I'm here?



CELL "MAP" showing organelles



RAW MATERIALS

Most structures in our environment are made from metal, glass, plastics, and plant fibers. Cells have 4 basic materials that all their stuff is made of.

0) H_2O, O_2, salts

1) amino acids

2) sugars

3) lipids (fats) carbon atoms

4) nucleotides A T C G U

INSTRUCTIONS

1) DNA (A,T,C,G)

2) RNA (A,U,C G)

TOOLS/"TASK ROBOTS" (need energy)

They are usually made of protein but can have one of the other ingredients mixed in. Tools/robots can only operate on ONE type of molecule.

scissors staplers folders

editors (spell checkers) fixers pumps

vehicles shredders

copiers RNA polymerase keys clips

STRUCTURES

Not all cellular structures are similar to the structures in our own environment but a surprising number are.

cables microtubules

string actin

hooks flags anchors

mailboxes letters labels

LIPID

walls (membrane) bags vesicles tubes (ER)

The energy to run these tools comes from the cell's "rechargeable batteries."

ATP

Energy is released when the third phosphate is popped off. Energy is needed to put it back on.