

## Input DNA

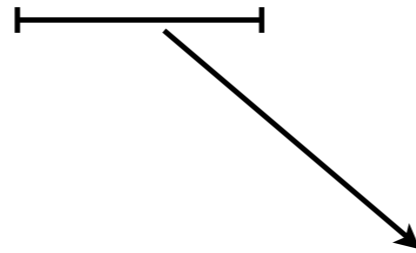
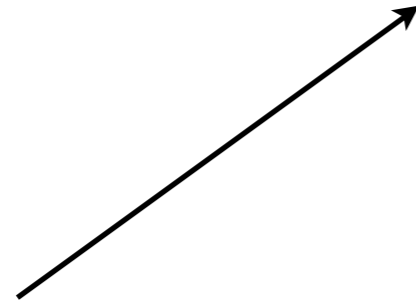
CCATAGTATATCTCGGCTCTAGGCCCTCATTTTTTT  
CCATAGTATATCTCGGCTCTAGGCCCTCATTTTTTT  
CCATAGTATATCTCGGCTCTAGGCCCTCATTTTTTT  
CCATAGTATATCTCGGCTCTAGGCCCTCATTTTTTT

## Cut into snippets

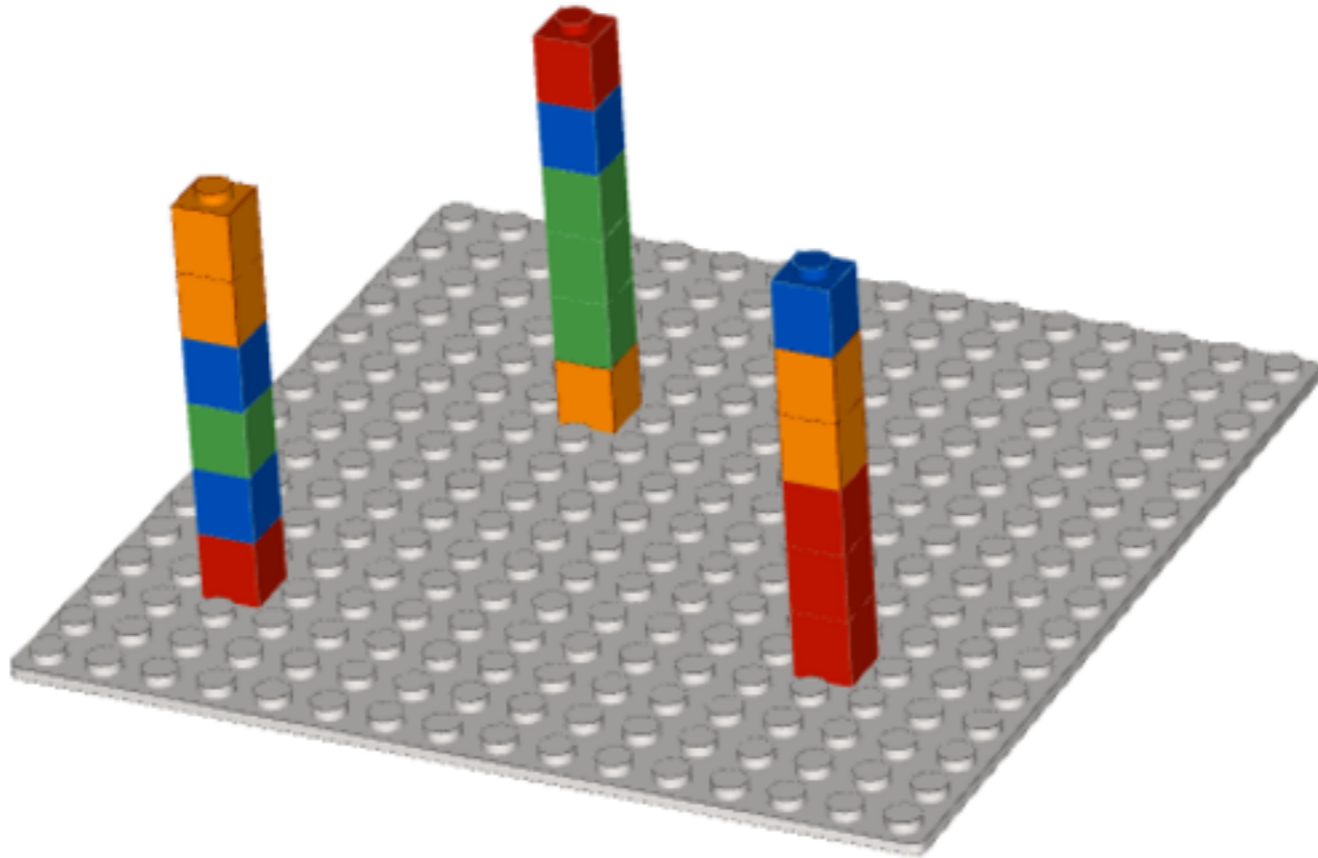
CCATAGTA TATCTCGG CTCTAGGCCCTC ATTTTTT  
CCA TAGTATAT CTCGGCTCTAGGCCCTCA TTTTTT  
CCATAGTAT ATCTCGGCTCTAG GCCCTCA TTTTTT  
CCATAG TATATCT CGGCTCTAGGCCCT CATTTTTTT

## Deposit on slide

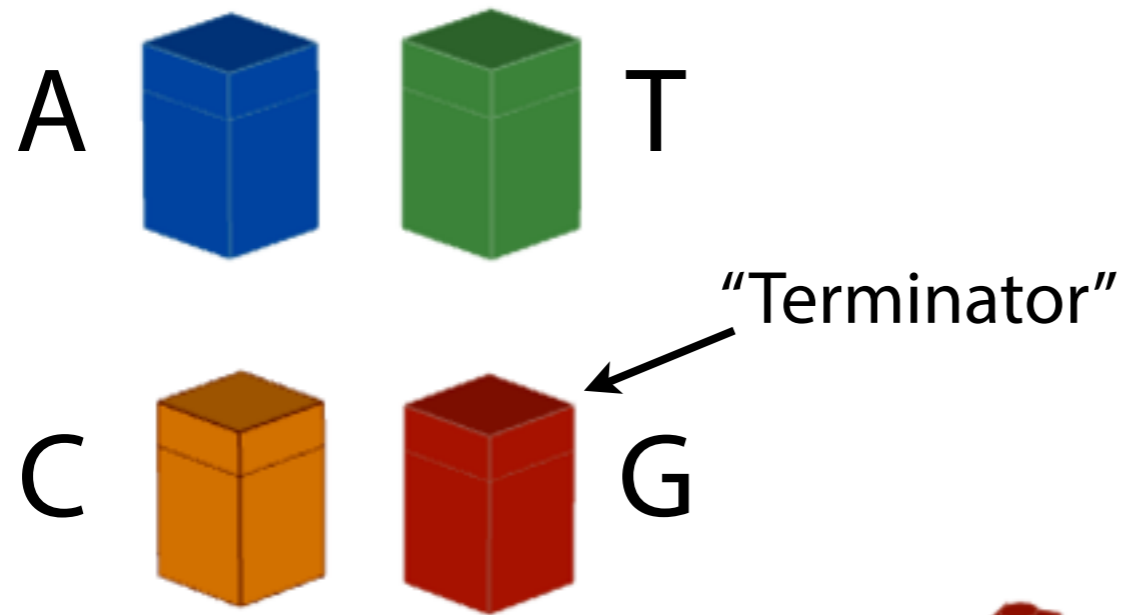
CCATAG



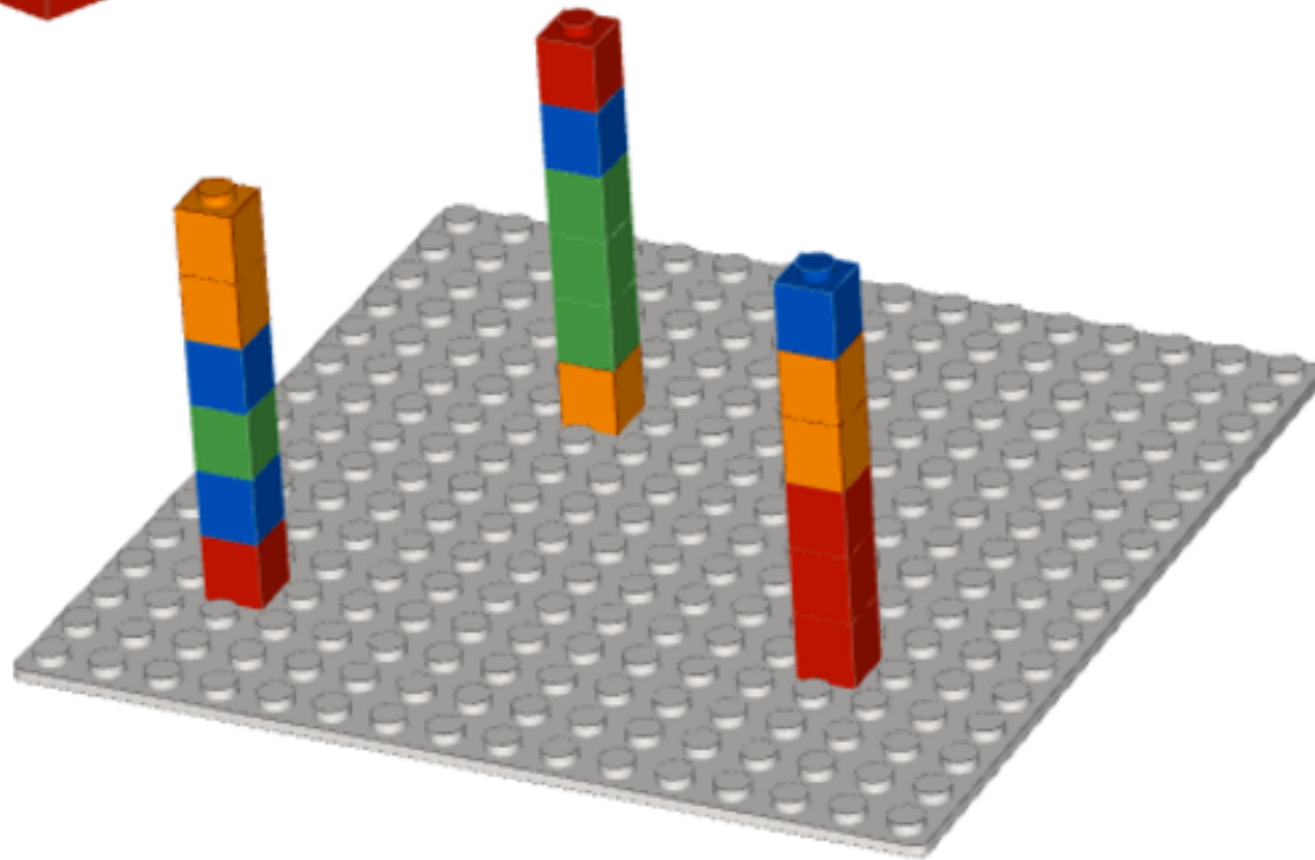
Template  
(billions of them!)

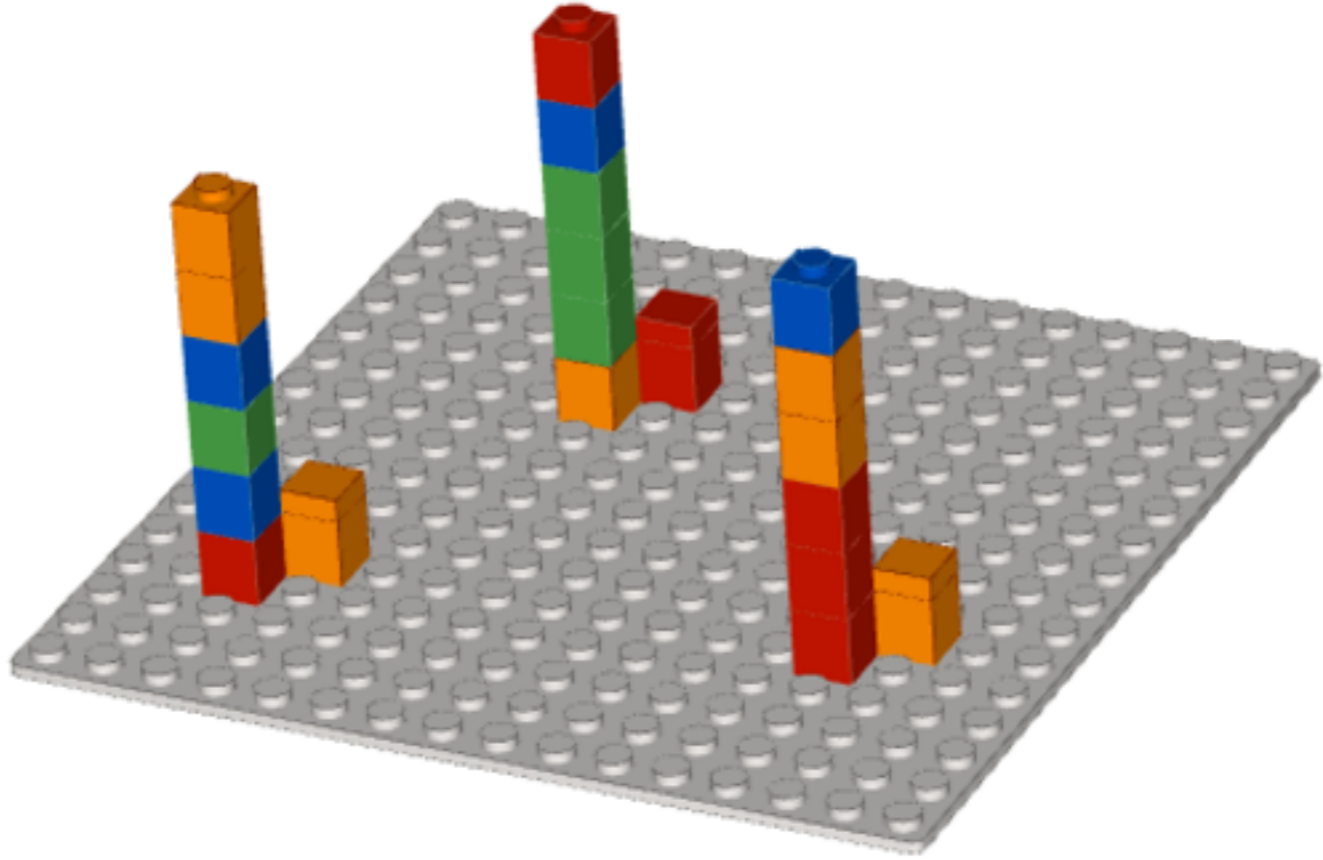


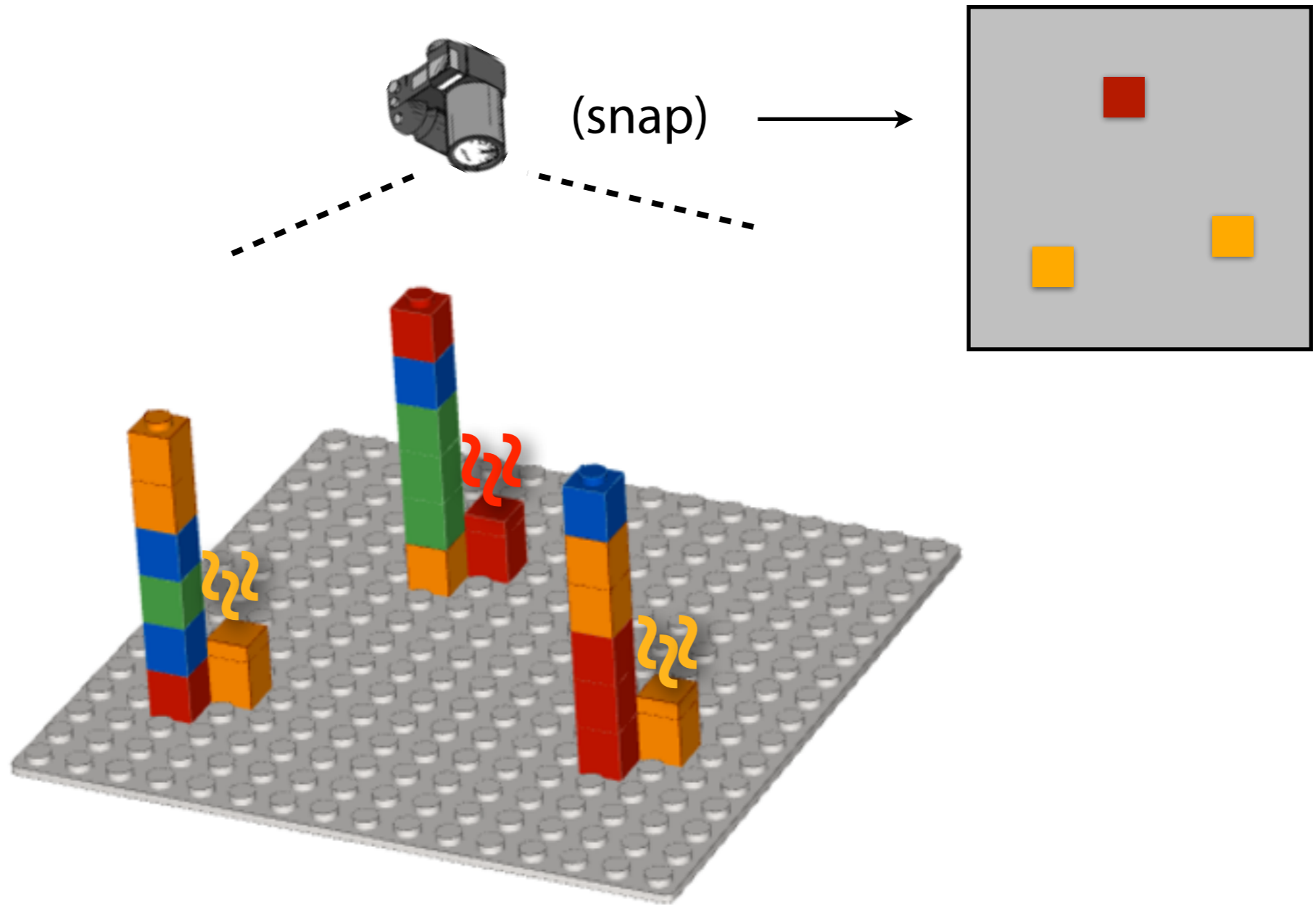
Slide

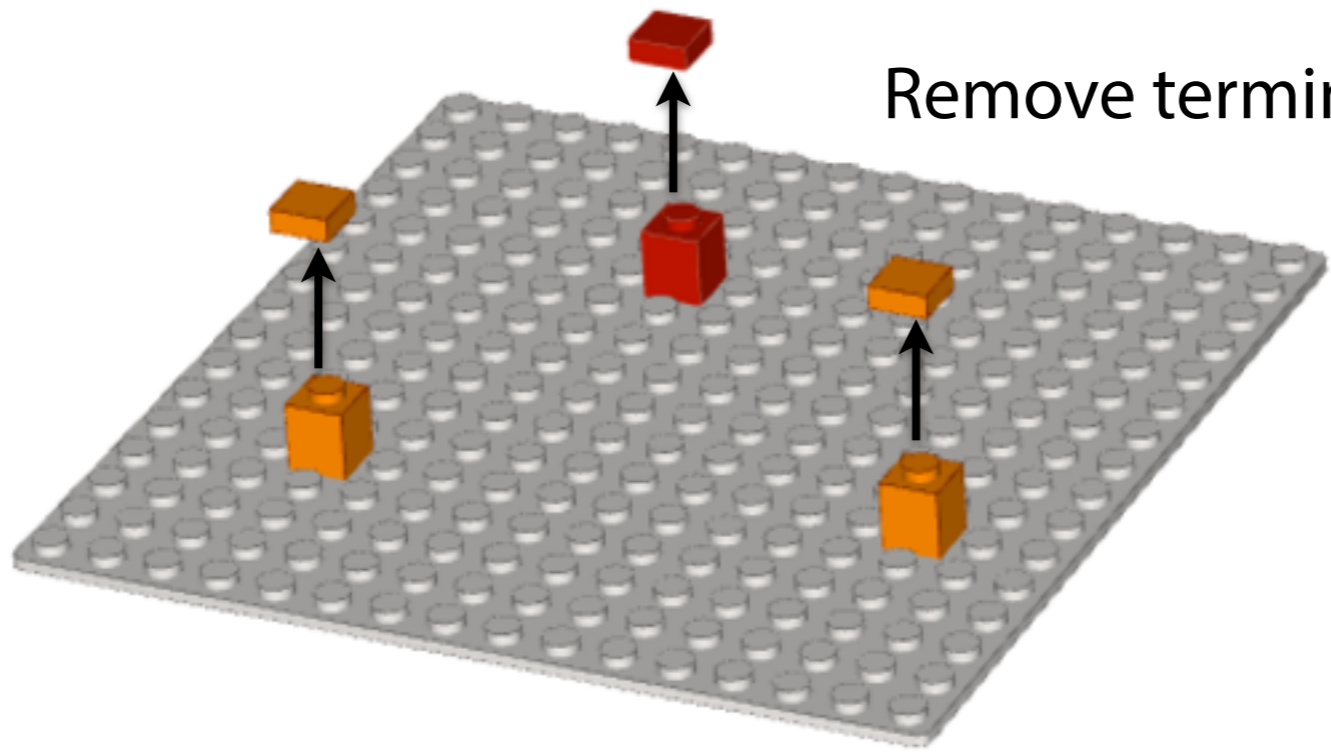


DNA polymerase

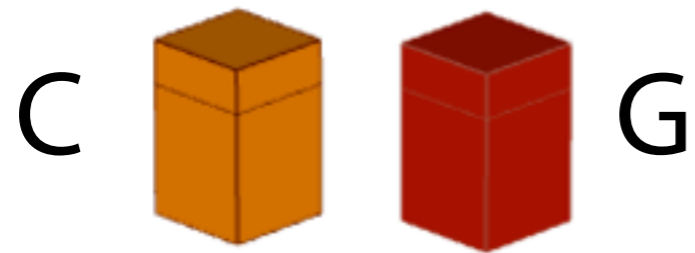




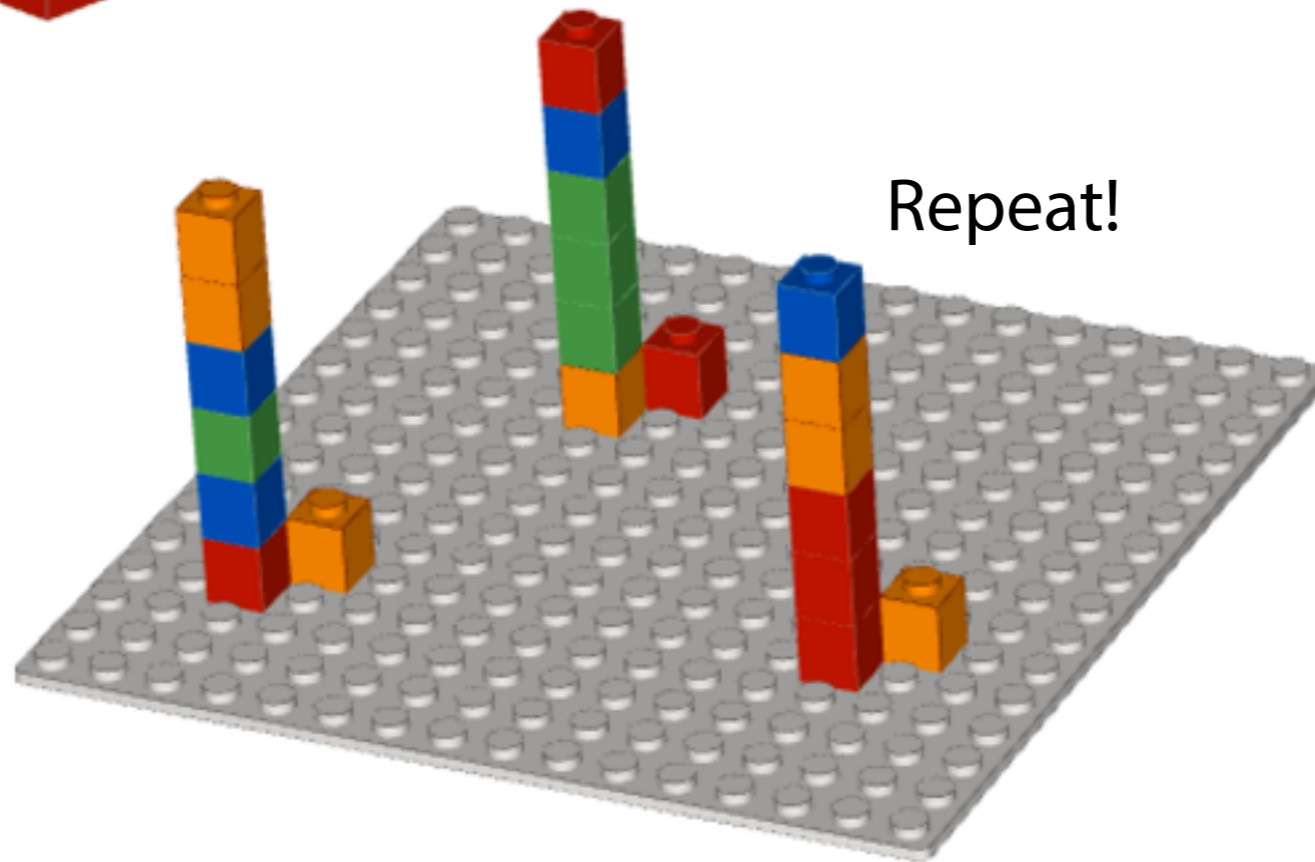


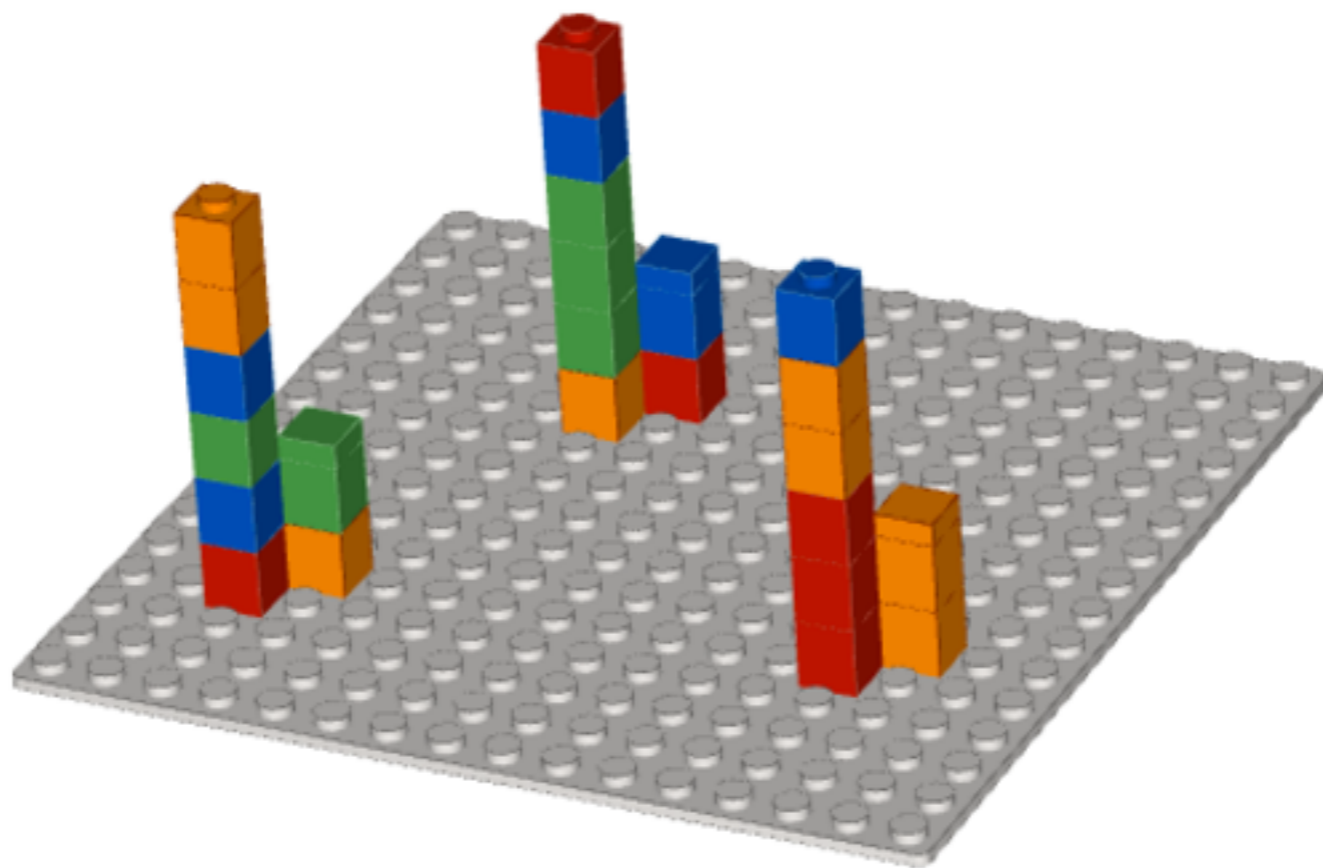


Remove terminators

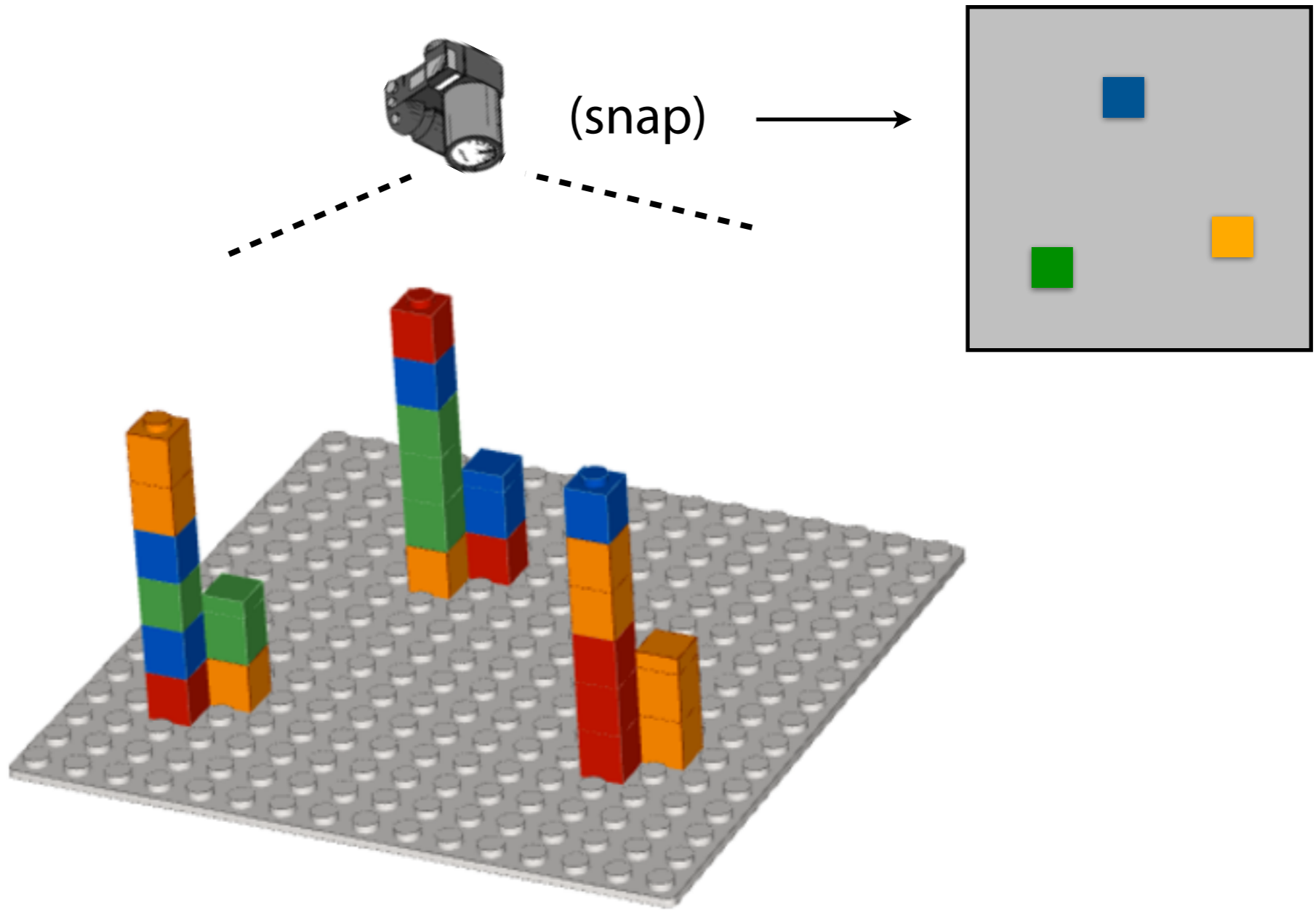


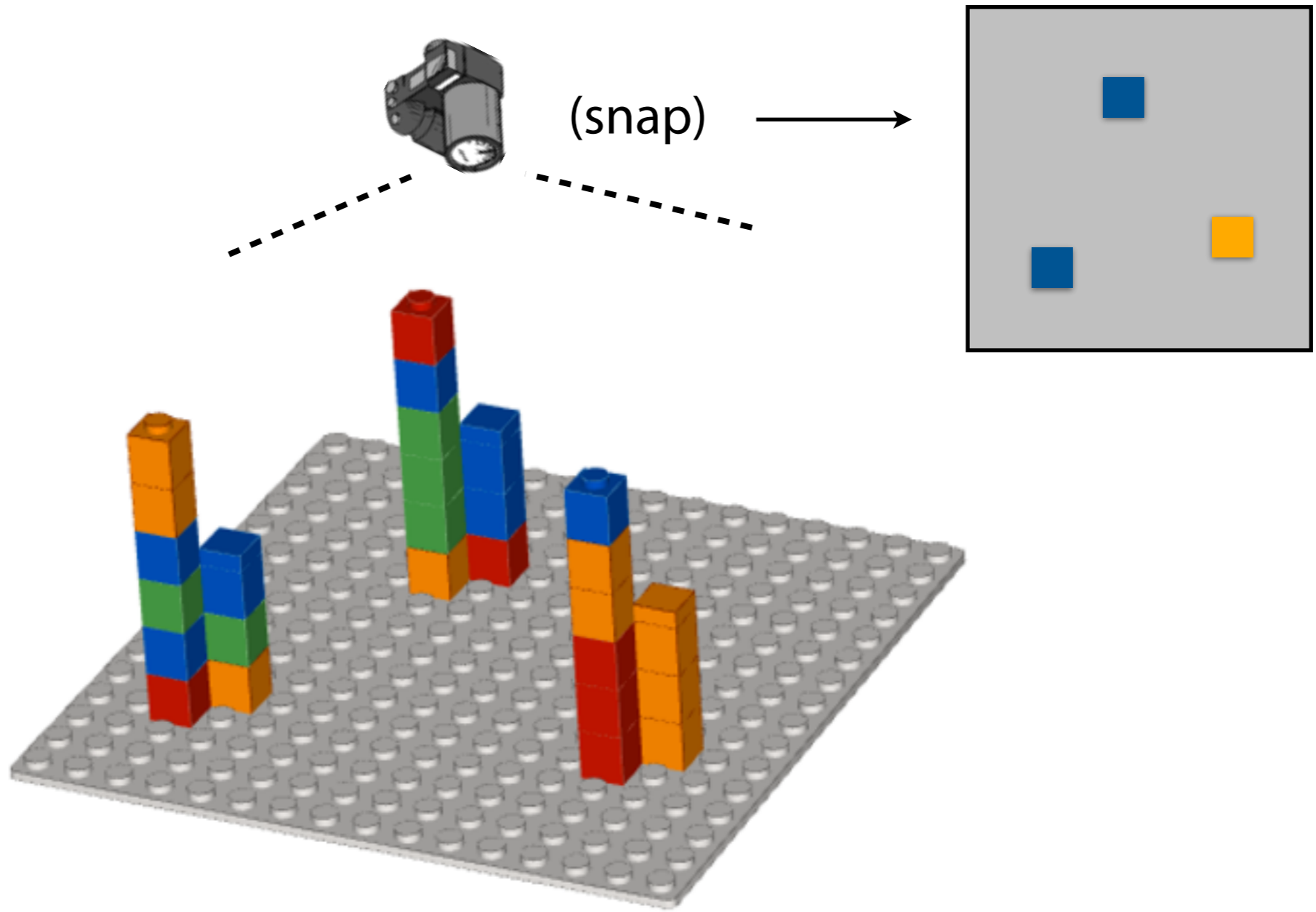
DNA polymerase

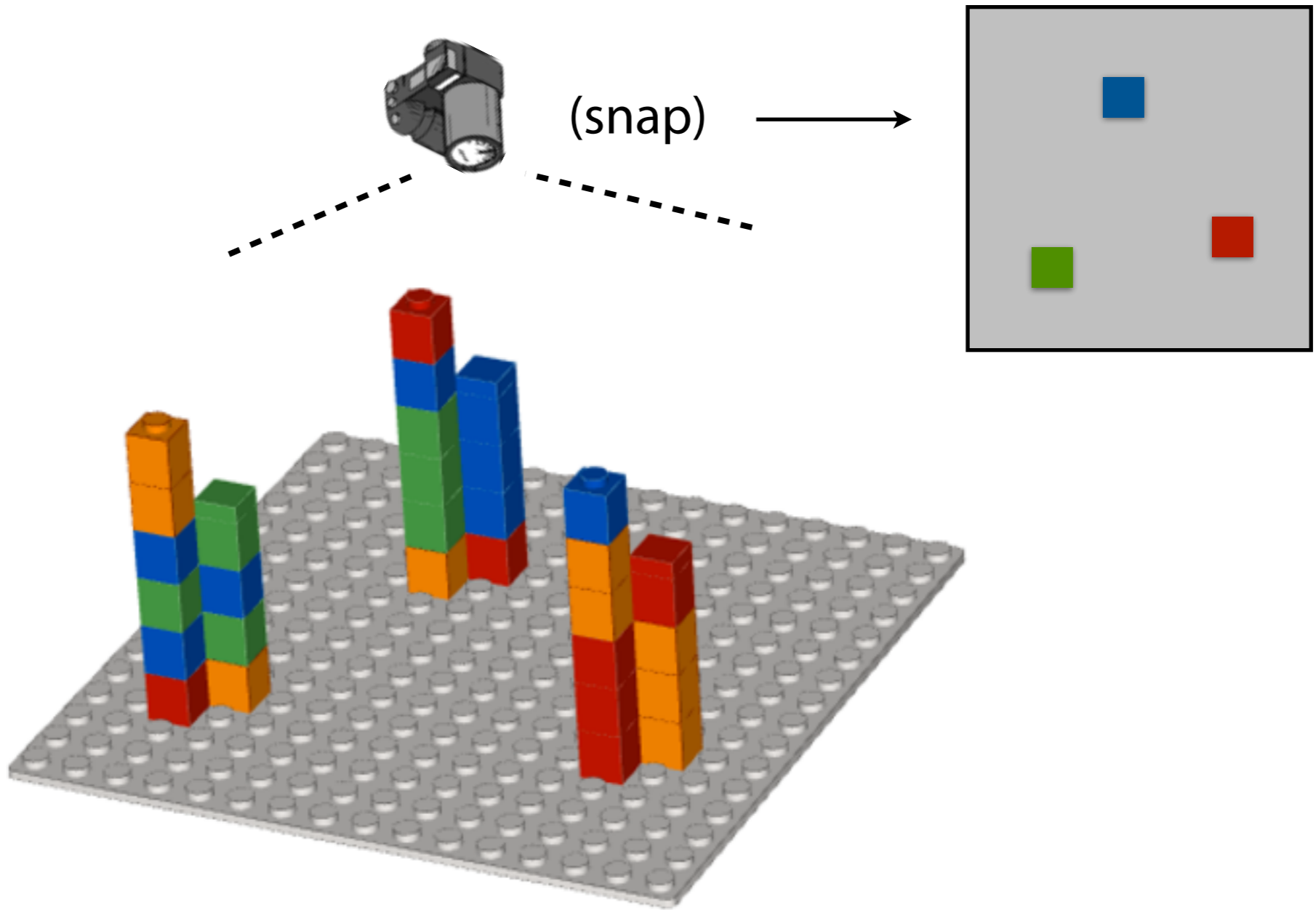


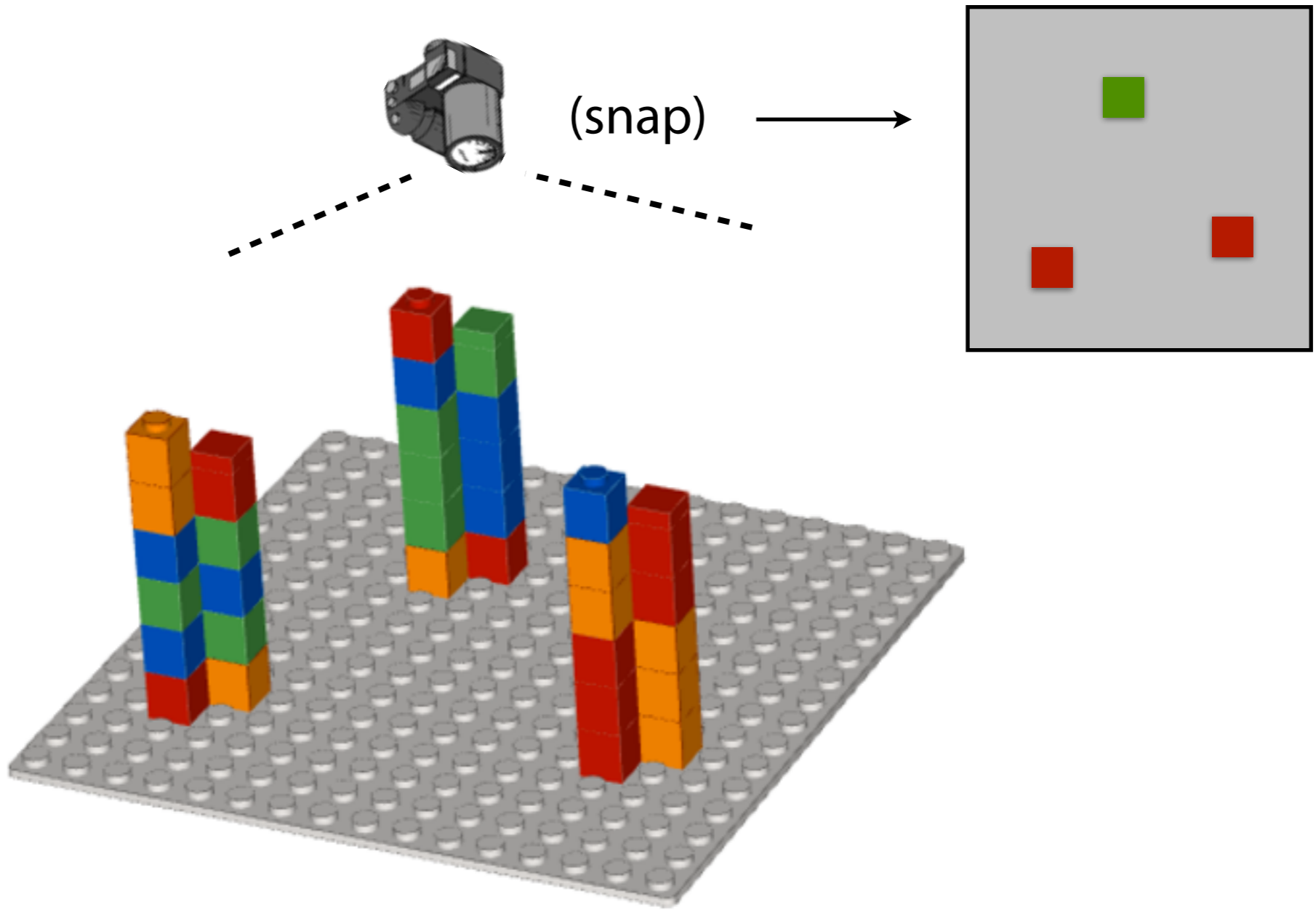


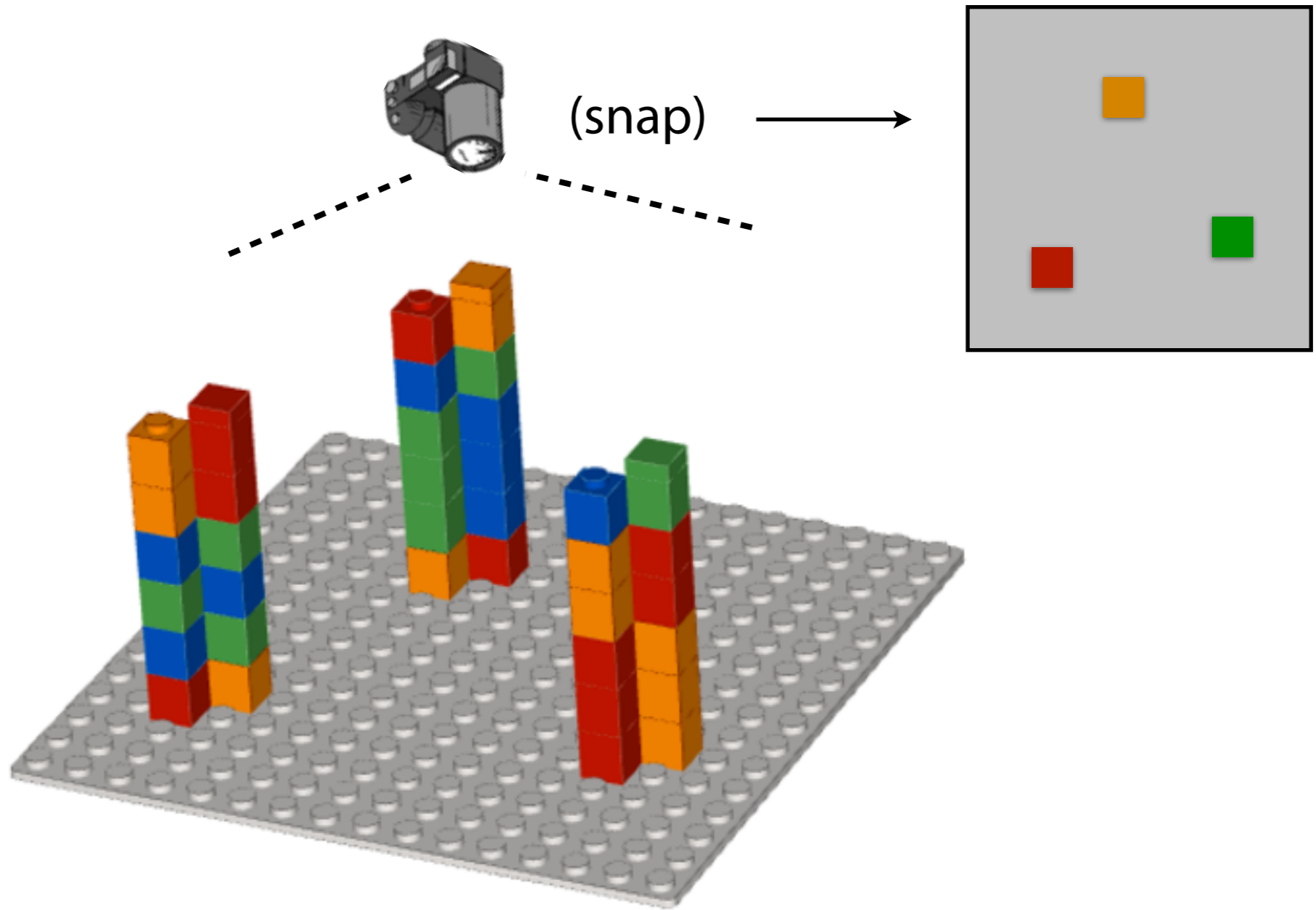






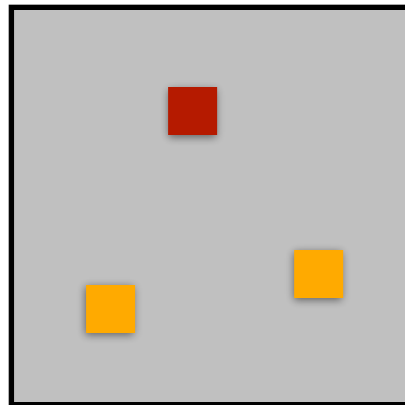




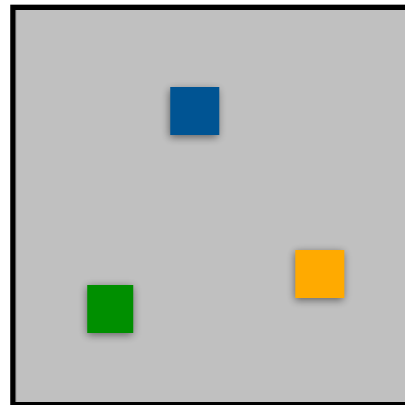


# Sequencing by synthesis

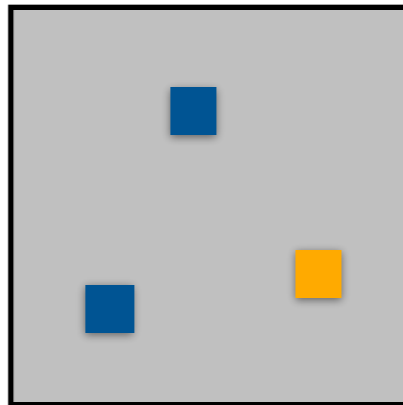
Cycle 1



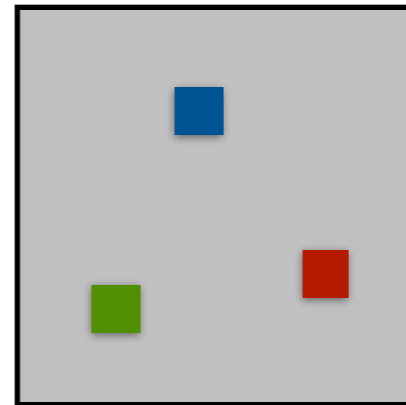
Cycle 2



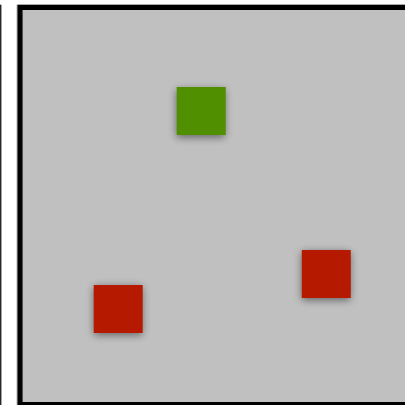
Cycle 3



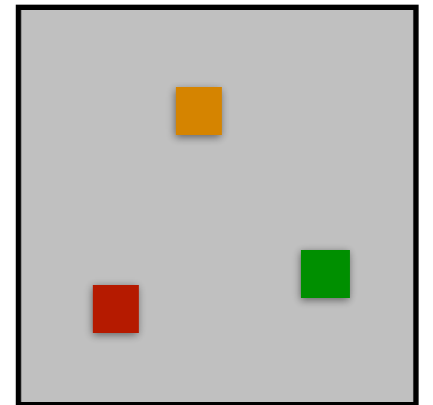
Cycle 4



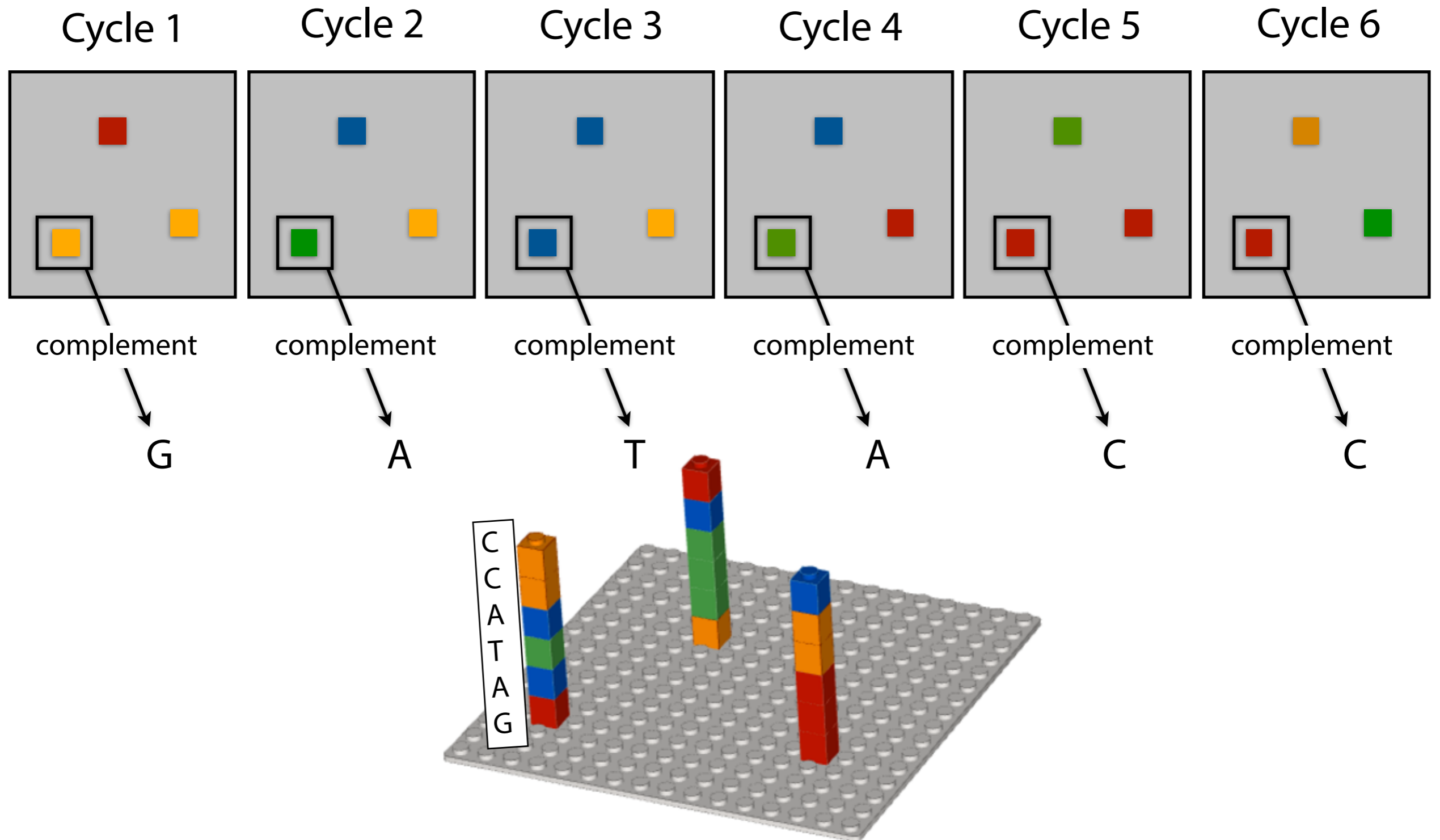
Cycle 5



Cycle 6



# Sequencing by synthesis



# Sequencing by synthesis

Billions of templates on a slide

Massively parallel: photograph captures all templates simultaneously

Terminators are “speed bumps,” keeping reactions in sync

