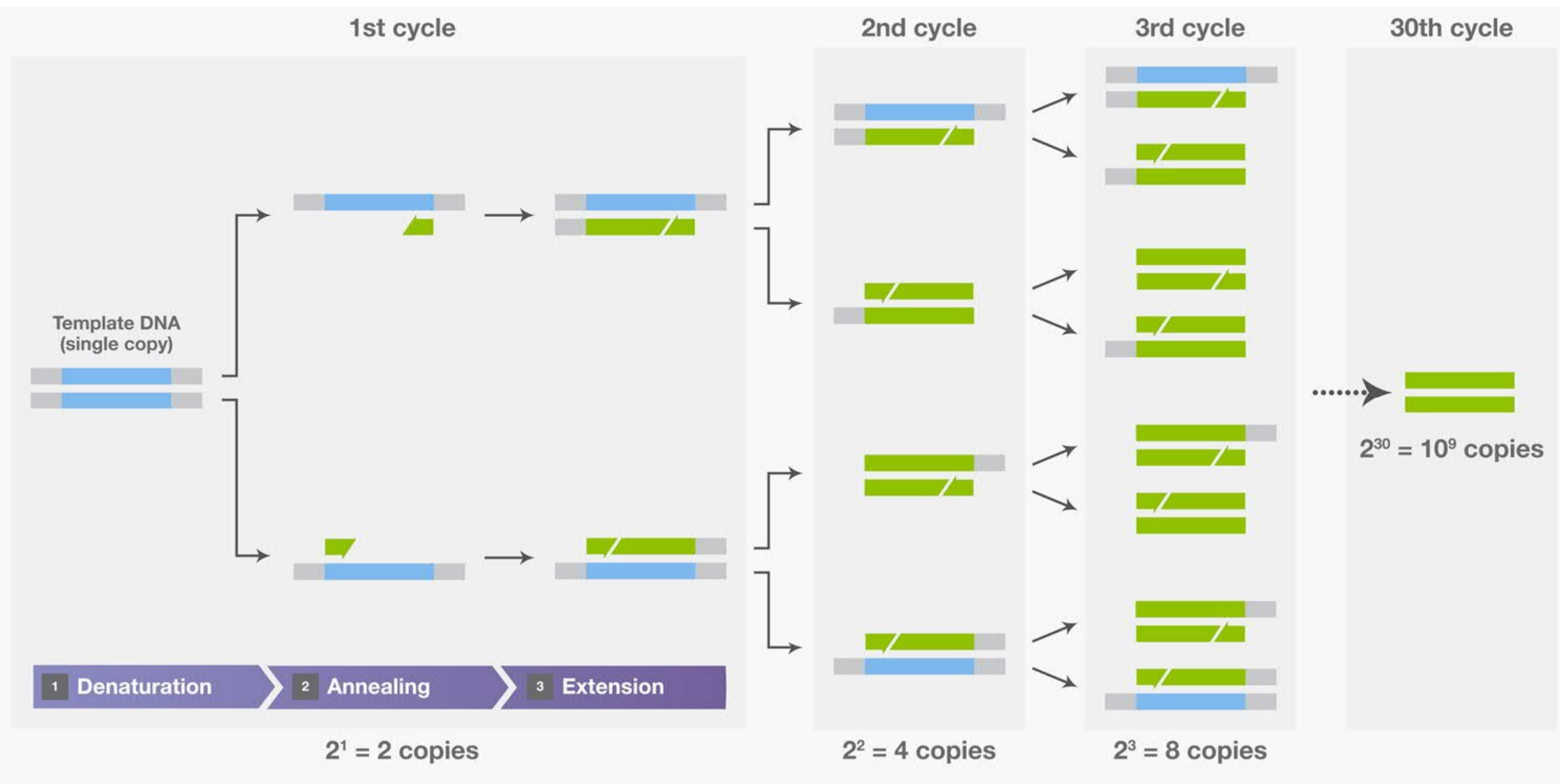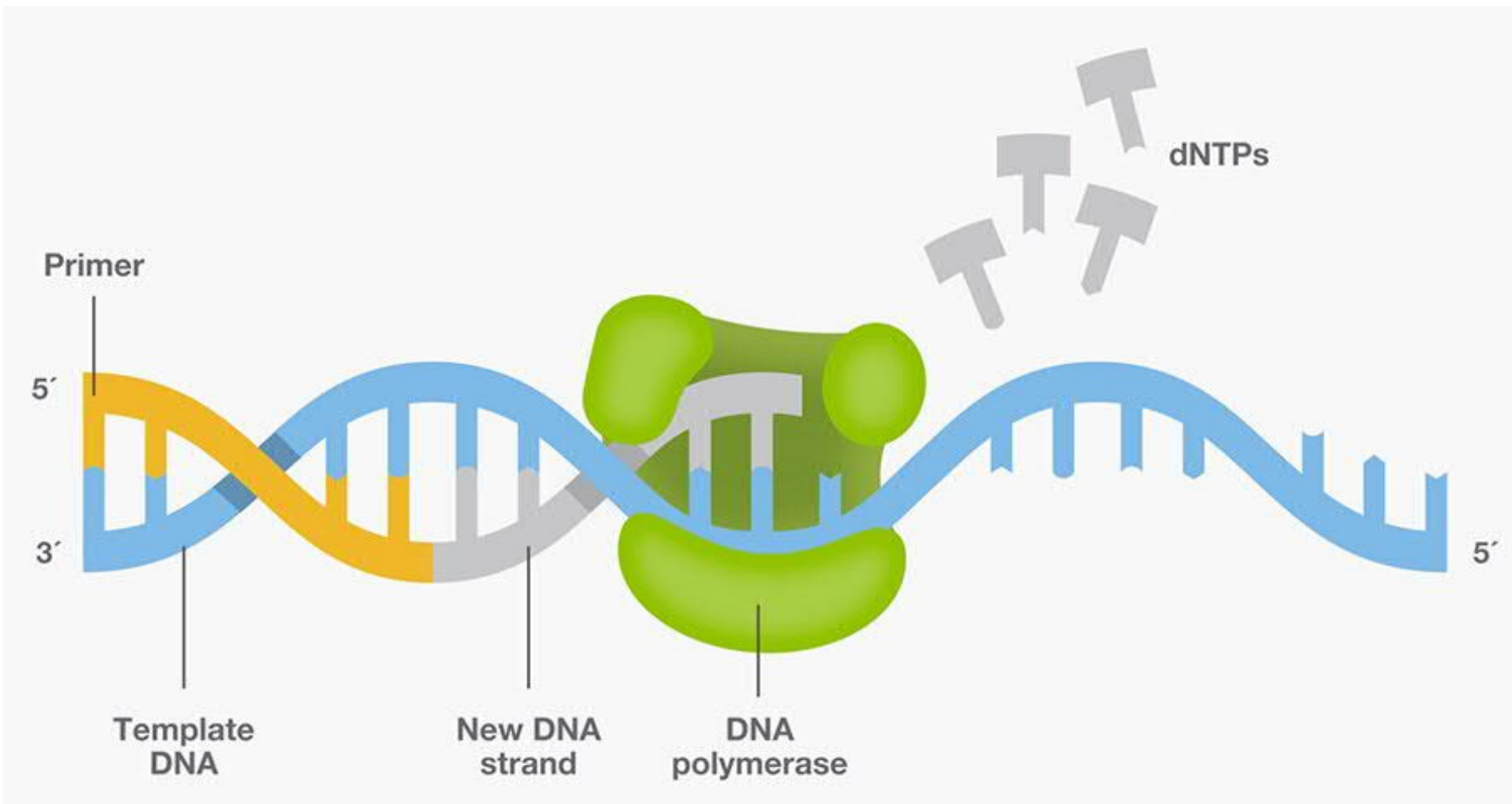# PCR and Sanger sequencing

- Today and tomorrow: recap on PCR and Sanger sequencing, exercises on basic sequence analysis (e.g. Translate tool), primer design

- Next week: going through some databases and tools, DNA Atlas tutorial and own work with in silico plasmid construction

- Make sure to work also with lab manual question sets! This will be more fruitful starting next week as you have met your lab partner

Region to be copied

Template DNA

TATCAGATCCATGGAGT...GAGTACTAGTCCTATGAGT
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
ATAGTCTAGGTACCTCA...CTCATGATCAGGATACTCA

↓

TATCAGATCCATGGAGT...GAGTACTAGTCCTATGAGT
                                | | | | | | | | | | | |
                          GATCAGGATACT Primer 2
                                ←

Primer 1 →
     CAGATCCATGG →
     | | | | | | | | | | |
ATAGTCTAGGTACCTCA...CTCATGATCAGGATACTCA

1st cycle

2nd cycle

3rd cycle

30th cycle

Template DNA
(single copy)

| 1 Denaturation | 2 Annealing | 3 Extension |

$2^1 = 2$ copies

$2^2 = 4$ copies

$2^3 = 8$ copies

$2^{30} = 10^9$ copies

dNTPs

Primer

5′

3′

Template
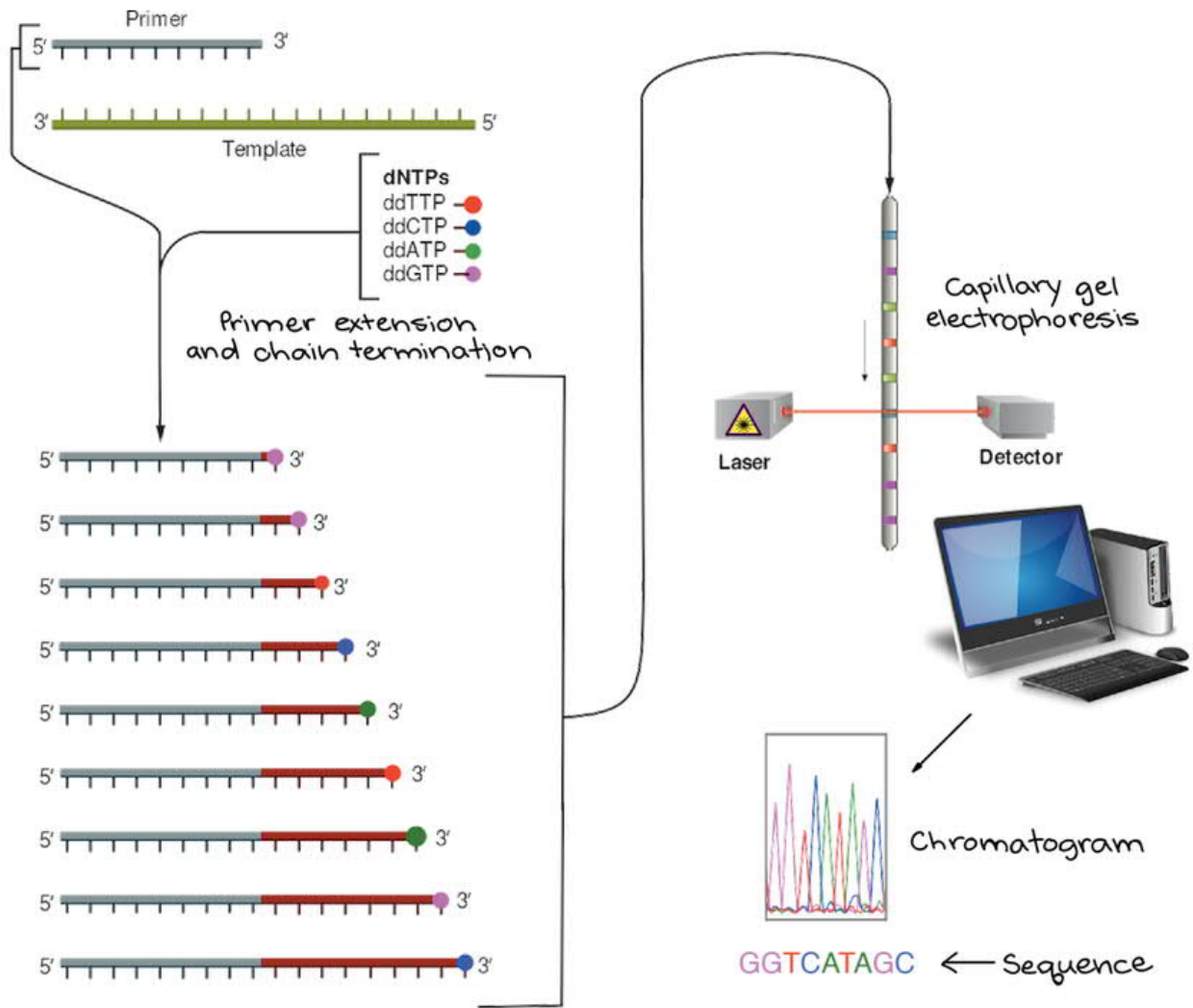DNA

New DNA
strand

DNA
polymerase

5′

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