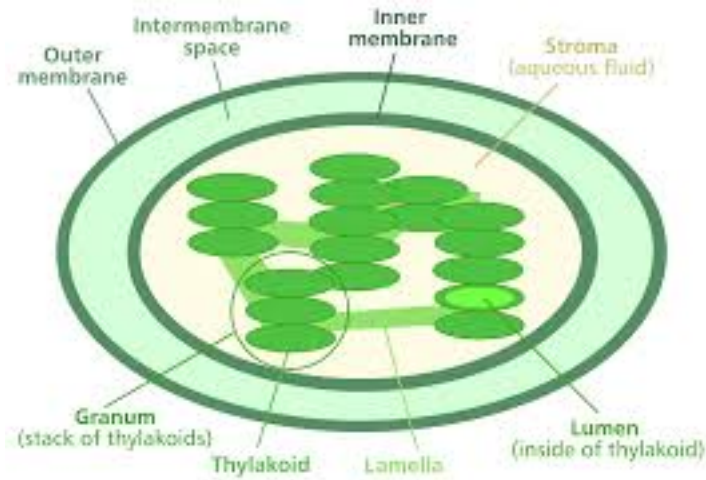


## CONCEPT: CHLOROPLAST

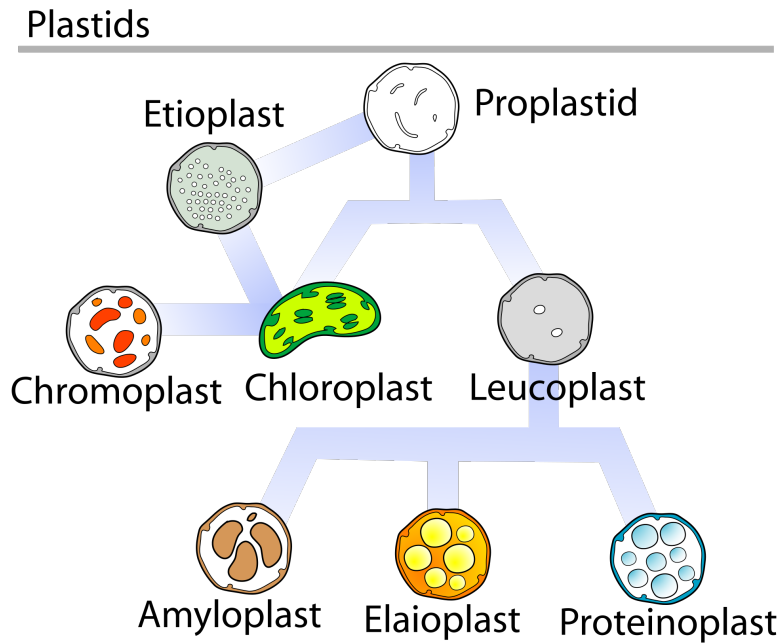
- The chloroplast has a distinctive structure and has its own circular genome
  - It is surrounded by two \_\_\_\_\_
    - Outer membrane and inner membrane
    - Like the mitochondria, it also contains an intermembrane space
  - The **stroma** is the internal space of the chloroplast
  - The stroma is filled with **thylakoids** which are flat discs that are the sites of photosynthesis
    - **Grana** are stacks of thylakoids
    - Thylakoids can be connected together forming a single large compartment

## **EXAMPLE:** Model of chloroplast structure



- A chloroplast is one member of the **plastid** family of plant \_\_\_\_\_
  - All plastids develop from **pro-plastids** which are undifferentiated organelles present in rapidly dividing cells
  - There are many types of plastids other than the chloroplast
    - *Chromoplasts*: Lack chlorophyll but contain *carotenoids* (a light absorbing plant pigment)
    - *Amyloplasts*: Store starch

**EXAMPLE:** Types of plastids



**PRACTICE:**

1. Match the following term with it's definition
  - a. Stroma \_\_\_\_\_
  - b. Thylakoids \_\_\_\_\_
  - c. Grana \_\_\_\_\_
  
- i. Stacks of thylakoids
- ii. Internal space of the chloroplast
- iii. Flat discs that are the sites of photosynthesis

2. Which of the following plastids lacks chlorophyll but contains carotenoids?
- a. Chloroplast
  - b. Chromoplast
  - c. Amyloplast