

Mystery Cell Models

Copy Instructions

Make *single-sided copies*

- This document includes 5 cell models, labeled Model A-E.
- Each model stretches across two pages. Fit them together to make the full model.

Tips

- Print in color and laminate for re-use.
- Each model represents a different specialized cell type.
 - Some cell parts are unique to one model; these are listed on the models themselves.
 - Other cell parts are common to most cell types; these are listed in a separate pdf document (Most cells have these parts.pdf)
- The cell parts are numbered differently for each model.

Mystery Cell Model A

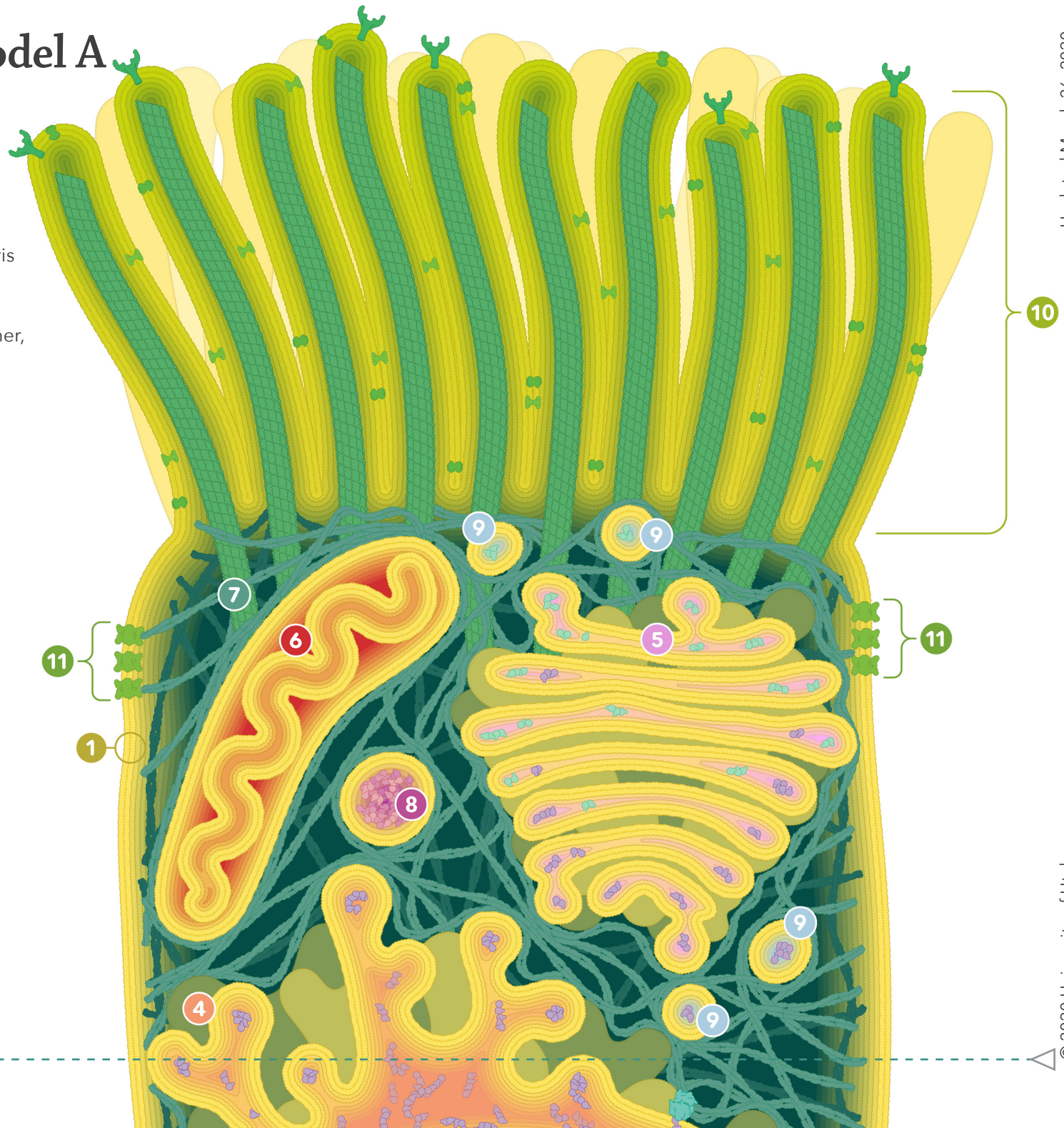
Specialized cell parts

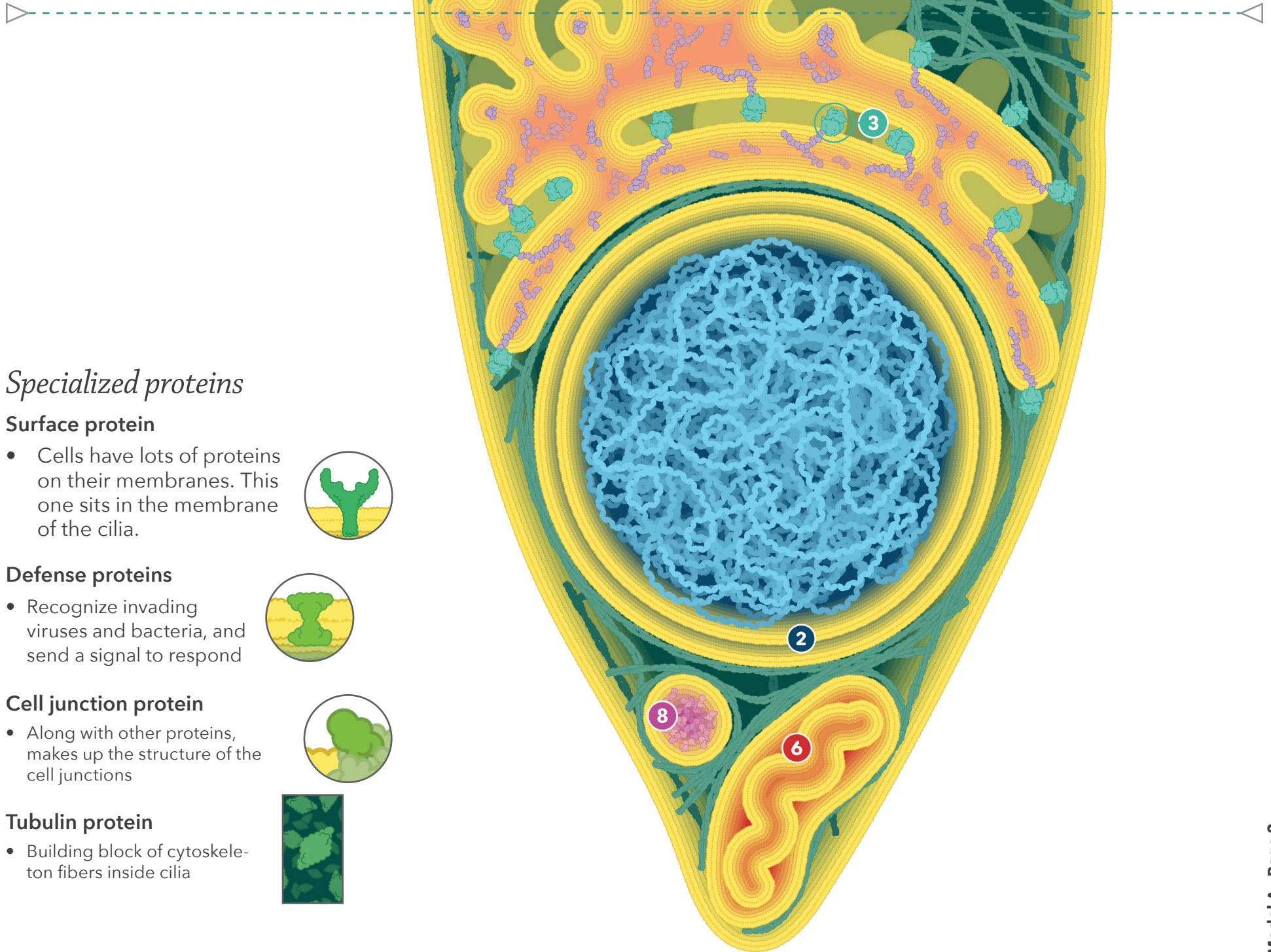
Cilia

- Move in a wave-like motion
- Push away mucus & trapped debris

Cell junctions

- Connect neighboring cells together, forming a strong barrier.





Specialized proteins

Surface protein

- Cells have lots of proteins on their membranes. This one sits in the membrane of the cilia.



Defense proteins

- Recognize invading viruses and bacteria, and send a signal to respond



Cell junction protein

- Along with other proteins, makes up the structure of the cell junctions



Tubulin protein

- Building block of cytoskeleton fibers inside cilia



Mystery Cell Model B

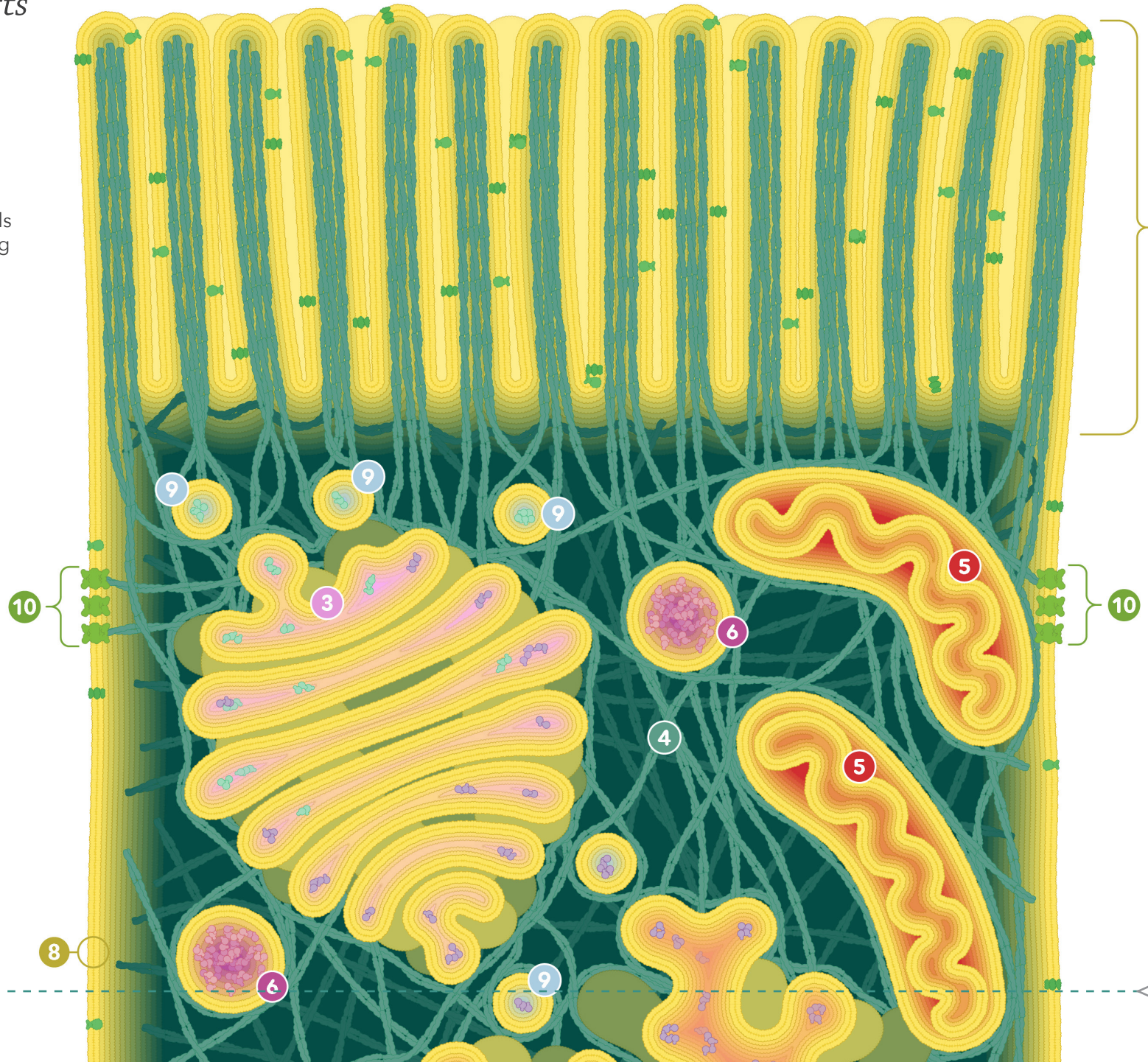
Specialized cell parts

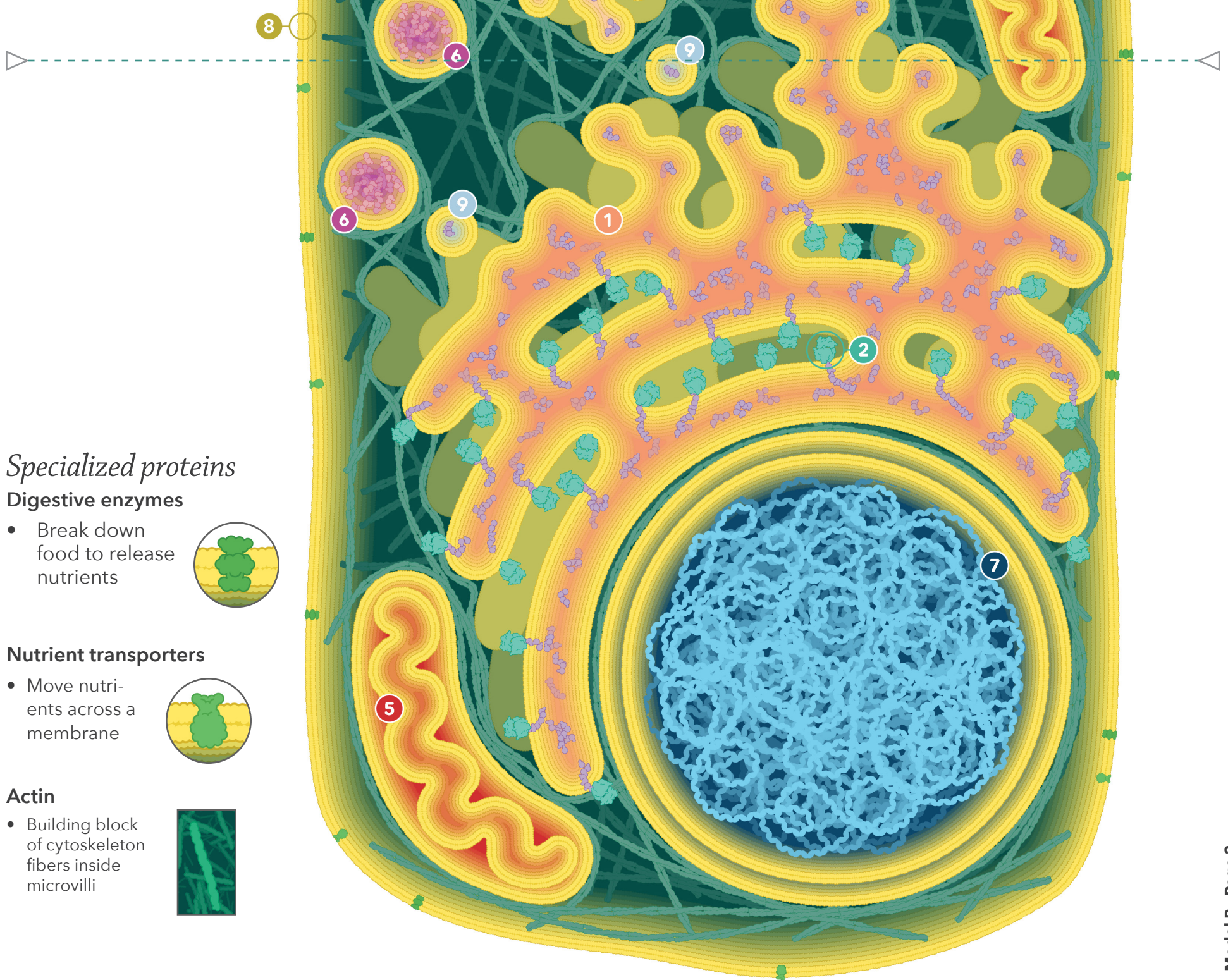
Microvilli

- Add lots of surface area
- Have proteins that pull nutrients into the cell

Cell junctions

- Connect neighboring cells together, forming a strong barrier.





Specialized proteins

Digestive enzymes

- Break down food to release nutrients



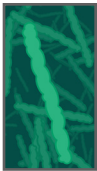
Nutrient transporters

- Move nutrients across a membrane



Actin

- Building block of cytoskeleton fibers inside microvilli



Mystery Cell Model C

Specialized cell parts

Cell wall

- Protects the cell from injury
- Provides support

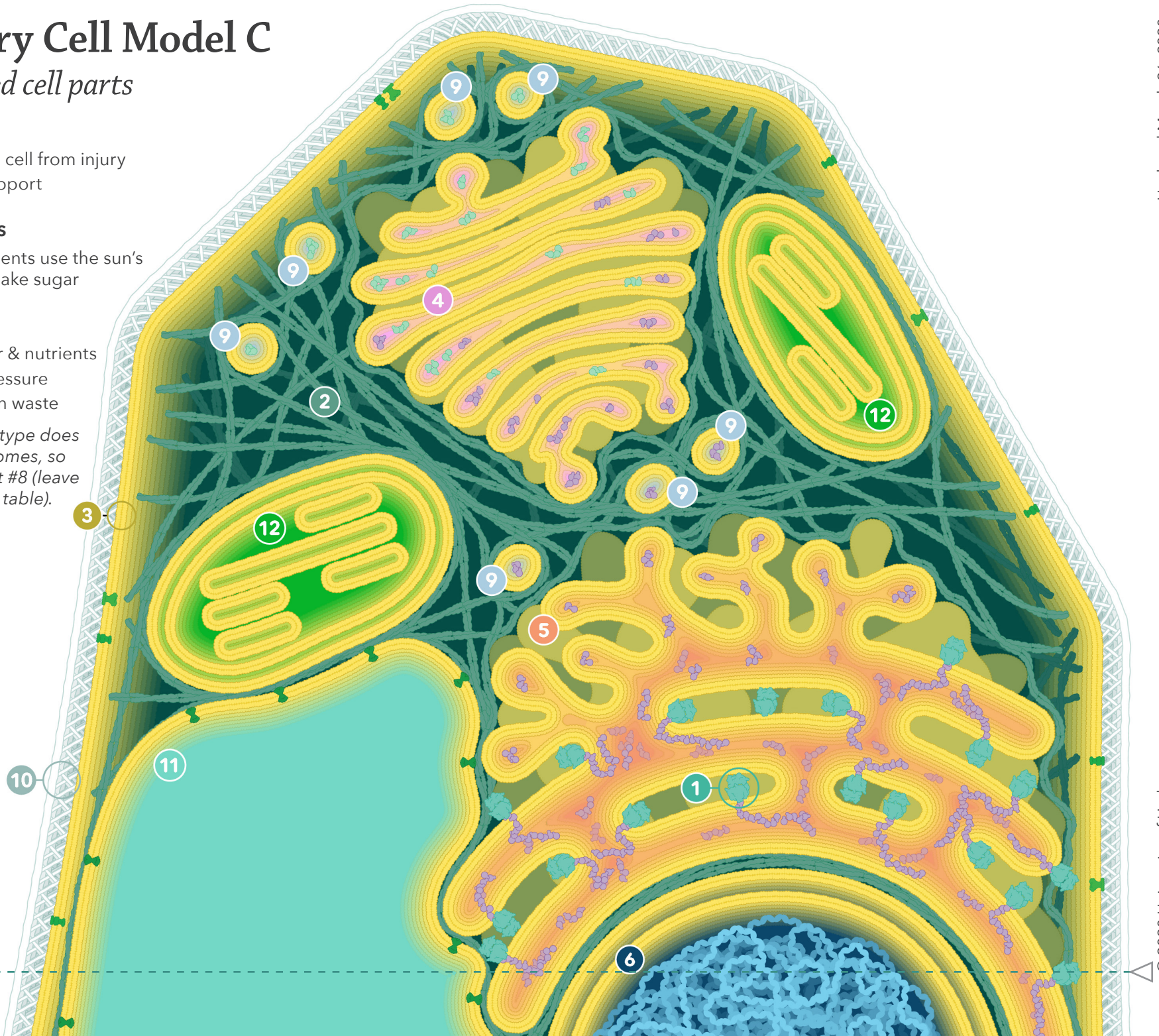
Chloroplasts

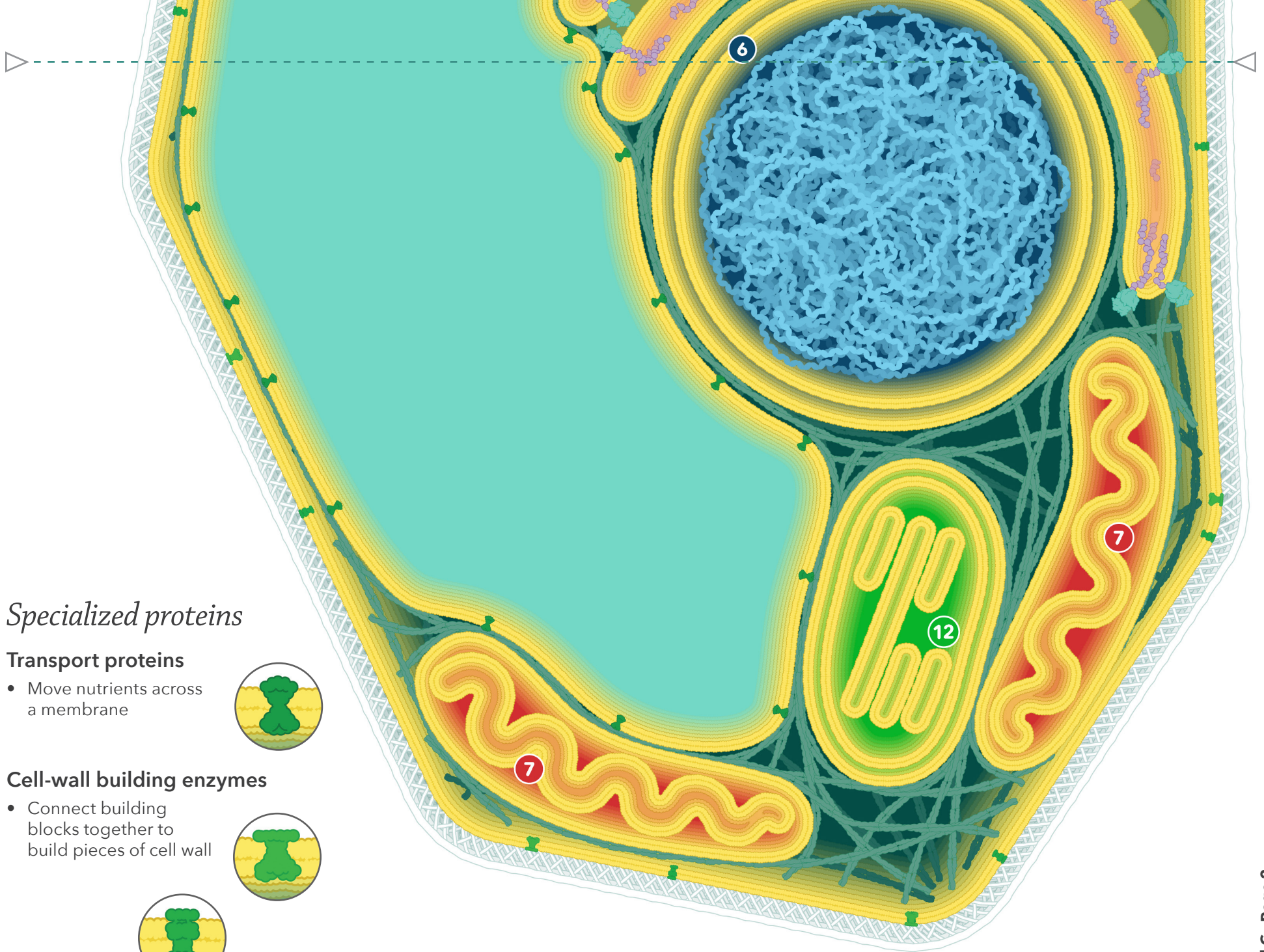
- Green pigments use the sun's energy to make sugar

Vacuole

- Stores water & nutrients
- Provides pressure
- Breaks down waste

Note: This cell type does not have lysosomes, so there is no part #8 (leave it blank in your table).





Specialized proteins

Transport proteins

- Move nutrients across a membrane

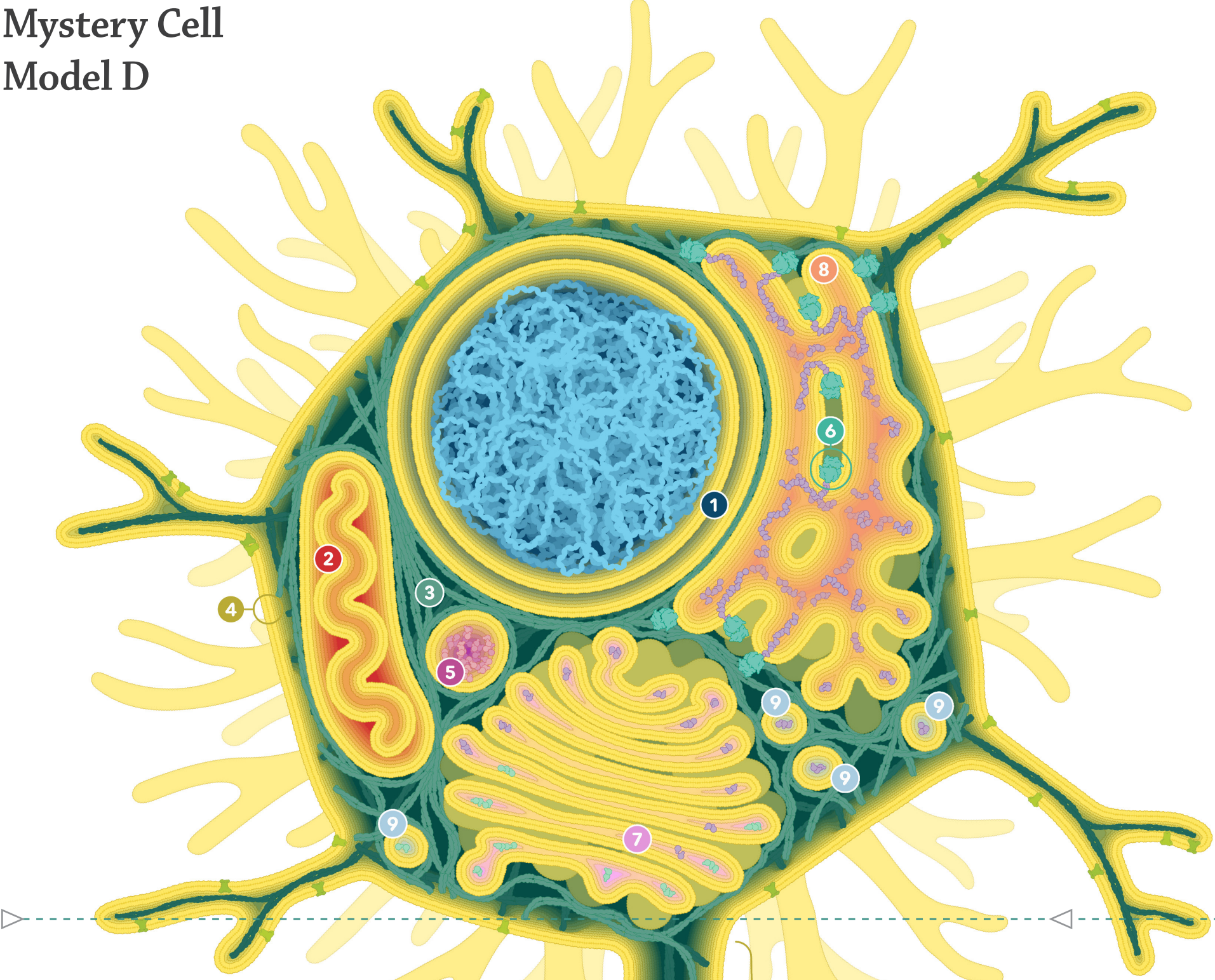


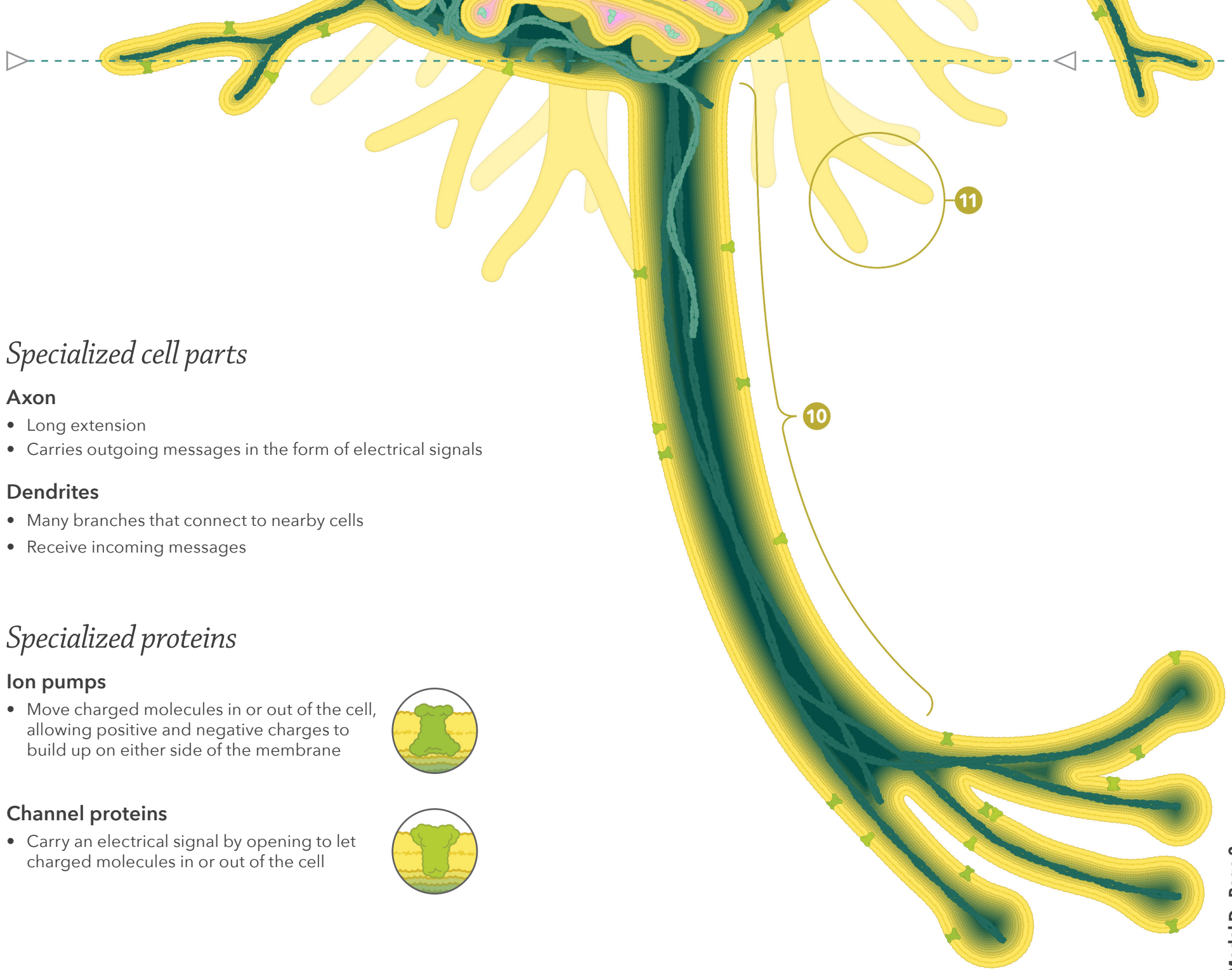
Cell-wall building enzymes

- Connect building blocks together to build pieces of cell wall



Mystery Cell Model D





Specialized cell parts

Axon

- Long extension
- Carries outgoing messages in the form of electrical signals

Dendrites

- Many branches that connect to nearby cells
- Receive incoming messages

Specialized proteins

Ion pumps

- Move charged molecules in or out of the cell, allowing positive and negative charges to build up on either side of the membrane



Channel proteins

- Carry an electrical signal by opening to let charged molecules in or out of the cell



Mystery Cell Model E

Specialized cell parts

Vacuole

- Stores water & nutrients
- Provides pressure
- Breaks down waste

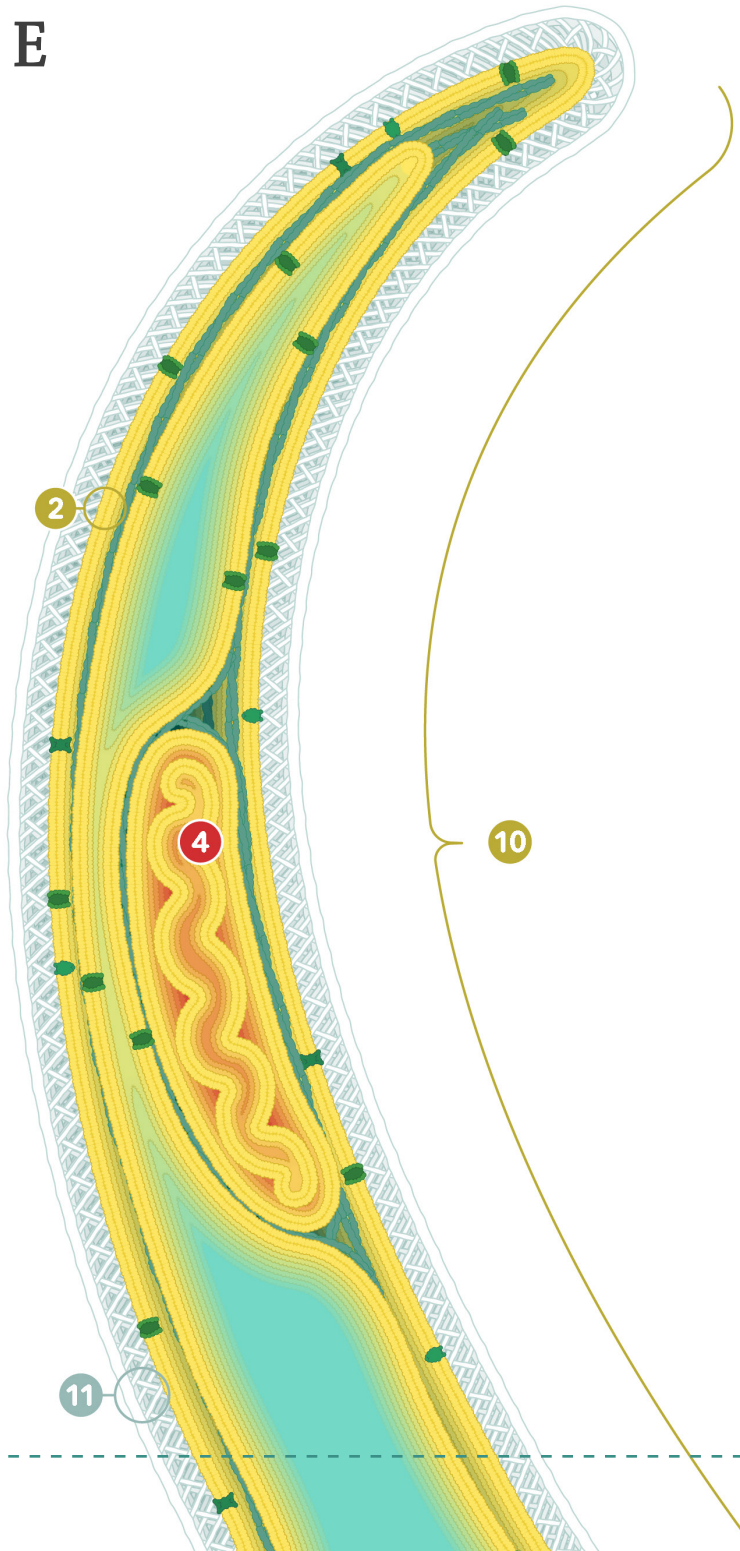
Cell wall

- Protects the cell from injury
- Provides support

Root hair

- Long extension
- Increases cell surface area for absorbing water and nutrients

Note: This cell type does not have lysosomes, so there is no part #8 (leave it blank in your table).



Specialized proteins

Water channels

- Allow water to move across a membrane



Transport proteins

- Move nutrients across a membrane

