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
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
Specialized proteins

Water channels
• Allow water to move across a membrane

Transport proteins
• Move nutrients across a membrane

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).