Wireless Challenges
Example Solutions to the Problems Workbook
**Problem 1:** You don't have a good link to your neighbor's roof.

**Example Solution 1:** Add a neighbor node to reach the spots you can't see.
Problem 1: You don't have a good link to your neighbor's roof.

Example Solution 2: Add a neighbor node to reach the spots you can't see.
Problem 2: Thick walls prevent good links between apartment units.

Example Solution 1: Put an Ethernet cable between the nodes to create a wired link.
**Problem 2:** Thick walls prevent good links between apartment units.

**Example Solution 2:** Ask a neighbor to host a repeater node. This will be slower than the cable.
Problem 3: Frequent rain and snow causes links to drop in quality or disconnect.

Example Solution: Plan on using focused routers with strong signals in areas where such weather is common.
Problem 4: Some neighbor links are blocked by the trees between houses.

Example Solution 1: Raise the routers above the tree line with poles.
**Problem 4:** Some neighbor links are blocked by the trees between houses.

**Example Solution 2:** Add more neighbor nodes to make stronger links through the area.
Problem 5: One building has weak links to the rest of the neighborhood.

Example Solution 1: Add another neighbor router to repeat the signal.
Problem 5: One building has weak links to the rest of the neighborhood.

Example Solution 2: Use a directional router instead.
**Problem 6:** A hill blocks the links to your nearby neighbors.

**Example Solution 1:** You can work with your neighbors to install nodes to help.
Problem 6: A hill blocks the links to your nearby neighbors.

Example Solution 2: Find a way to put a node on the top of the hill.
**Problem 7:** The number of wireless signals in your building causes slow connections on the mesh.

**Example Solution 1:** Ask your neighbors to turn down their wireless power, or share devices and connections.
Problem 7: The number of wireless signals in your building causes slow connections on the mesh.

Example Solution 2: Use Ethernet cables to share and disable wireless on routers where possible.
**Problem 8:** Two neighbors have potential links that are far away.

**Example Solution 1:** Add directional sector nodes to links far away.
Problem 8: Two neighbors have potential links that are far away.

Example Solution 2: Set up point-to-point links to connect each location.
**Problem 9:** The routers seem slow and drop connections, even though the signal is very strong.

**Example Solution 1:** Turn down the power on the routers, or switch to a lower-powered type.
Problem 9: The routers seem slow and drop connections, even though the signal is very strong.

Example Solution 2: Remove a few nodes and have several neighbors connect to the closest node, or use Ethernet cables between buildings.
**Problem 10:** A hilltop site has no electricity, but would be perfect to connect to a far away town.

**Example Solution:** Add solar panels and batteries for remote electricity.
**Problem 11:** Your neighborhood occasionally or frequently loses electricity.

**Example Solution:** Connect the routers to backup batteries for electricity.