

Rutherford County Schools – Individual Learning Modules

Grade	Course
8 th Grade	Science
Unit Focus	
Develop an explanation of the role of waves in communication systems, using evidence about various types of electromagnetic radiation and the impact of building materials on wave transmission.	
Week of 5/11 – 5/15	
Standard(s)	
8.PS4.3 Evaluate the role that waves play in different communication systems.	
Online & Paper Resource(s)	
<p>Click Here to open the Student Handout</p> <p>If you would like to submit our work digitally, you can type your answers in a Microsoft Form.</p> <p>Day 1 - Monday</p> <p>Phenomenon: <i>A group of students are working together on a project for school in the downstairs basement area of their local library. Melody is trying to use her cell phone to place a call to order pizza to be delivered. Her cell phone doesn't have a signal and the call won't go through.</i></p> <ul style="list-style-type: none"> • Read the claims of each of the students. • Make observations and ask questions. <p>1. Explain which friend you feel has the best solution to Melody's problem. Justify your choice with evidence from your understanding of how information travels in communication devices.</p> <p>Day 2 - Tuesday</p> <p>Click Here to watch a short review video about how cell phones work!</p> <p>2. Based on this information, construct an explanation to describe which material has most likely been used in the building that Melody and the students are working in.</p> <p>3. Using the diagram of the library below <u>as well as</u> evidence from the data table in prompt #2, explain why Melody was able to connect to the pizza store via the WIFI internet communication system, but not her cellular network system.</p> <p>Day 3 - Wednesday</p> <p>4. This WIFI internet communication system has several components: the pizza store's computer system, the WIFI router at the library, Melody's computer, and fiber optic cables. Using a model or written explanation, describe how the components of this system transfer information about Melody's pizza order.</p> <p>Day 4 - Thursday</p> <p>5. After learning about the electromagnetic spectrum in science class, Melody makes a claim that, although it isn't working right now, the information in her cell phone is probably transferred using microwaves or radio waves. Using what you know about the spectrum and the data table above as evidence, support Melody's claim with evidence and reasoning.</p>	
Observational Task(s)	
<p>Day 5 - Friday</p> <p>Evaluate the different communication systems in your house. What role do waves play in those different communication systems? How are you able to complete an assignment online? How is that different than texting or calling your friend from your cell phone? Develop a model that shows how waves are used in at least one communication system in your house.</p>	
Expected Outcomes	
Click Here for a parent guide.	