Electric Current Storyline (Bundle 3, Sub-Unit 9)

1. Time Frame	2 Weeks (Full Year), 1 Week (Block)
2. Selected Performance Expectation *Standards by Topic*	N/A
3. Related Disciplinary Core Ideas ● *Read relevant section in Framework* ● Evidence Statements	N/A
4. Prior Disciplinary Core Ideas ● *Note how idea progresses from K through 12 using Appendix E*	N/A
5. Related Science and Engineering Practice ● *Read relevant practice in Appendix F for your grade band.* ● *Read the related element (bulleted) for the practice*	**Planning and Carrying Out Investigations** Planning and carrying out investigations in 9-12 builds on K-8 experiences and progresses to include investigations that provide evidence for and test conceptual, mathematical, physical, and empirical models. ● Plan and conduct an investigation individually and collaboratively to produce data to serve as the basis for evidence, and in the design: decide on types, how much, and accuracy of data needed to produce reliable measurements and consider limitations on the precision of the data (e.g., number of trials, cost, risk, time), and refine the design accordingly.
6. Related Cross-cutting Concept ● *Read relevant cross-cutting concept in Appendix G for your grade band* ● *Read the related element (bullet) for the practice*	**Structure and Function** ● The functions and properties of natural and designed objects and systems can be inferred from their overall structure, the way their components are shaped and used, and the molecular substructures of its various materials. **Systems and Models** ● Students can investigate or analyze a system by defining its boundaries and initial conditions, as well as its inputs and outputs. They can use models (e.g., physical, mathematical, computer models) to simulate the flow of energy, matter, and interactions within and between systems at different scales. They can also use models and simulations to predict the behavior of a system, and recognize that these predictions have limited precision and reliability due to the assumptions and approximations inherent in the models. They can also design systems to do specific tasks.

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7. Possible misconceptions ● *Use online resources, Uncovering Students' Ideas Probes, Making Sense of Secondary Science, Misconceptions in Primary Science, Atlas for Science Literacy*	Circuits don't have to make a loop,
8. Potential Phenomena ● *Read about grounding the learning in a phenomenon* ● *Phenomena for NGSS* ● *Nat Geo Phenomena*	Electrical Circuits Short Circuits Series Circuits Parallel Circuits

Critical Vocabulary	Topics/Content
Current Voltage Resistance Ohm's Law	● Current, Voltage, Resistance ● Ohm's Law ● (Series and Parallel Circuits) ● (Electric Power)

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1. What we figured out Answer to the focus question; claim	**2. Focus Question** Lesson-level questions	**3. Learning Target/"I can" Statements** Lesson Level PE; includes the practice, content, and CCC students used in experience	**4. Experiences/Activities** What experience(s) will students need to answer the focus question?

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