Walkthrough Document – Science and Engineering Practices

Teacher_____ **Observer**_____ **Date**_____

Science & Engineering Practice	Teacher Action(s)	Student Action(s)	Evidence
1. Asking Questions and Defining Problems	• Provides students with a phenomenon and a forum to develop questions they would need answers to in order to explain that phenomenon	• Develop questions that can be explored through investigation to collect evidence needed to explain the phenomenon	
2. Developing and Using Models	• Provides students with the opportunity to generate an initial model and subsequent chances to review and refine this model based on new information learned in class	• Develops initial model and revises this model to correct misconceptions or include new information	
3. Planning and Carrying Out Investigations	• Provides students the opportunity to plan and conduct an investigation	• Plans and carries out an investigation that results in data that can be used to further explain a phenomenon	
4. Analyzing and Interpreting Data	• Provides students with the opportunity to interpret data by choosing appropriate means to analyze and display this information	• Choose appropriate means to analyze data and displays this data in a manner that highlights relationships	
5. Mathematical and Computational Thinking	• Provide students with an opportunity to use mathematical tools to support the work of a scientist	• Uses mathematical tools to analyze data, represent complex scenarios, or create an algorithm to solve a problem	
6. Constructing Explanations and Designing Solutions	• Provides students with the opportunity to construct an explanation for a phenomenon by citing evidence (i.e. principles learned in class, data collected through investigation, etc.)	• Construct an explanation using relationships between variables, models to represent systems, or evidence obtained from various sources	
7. Engaging in Argument from Evidence	• Provides students with multiple perspectives of an argument and the opportunity to support one side by constructing an evidence-based argument	• Construct an evidence-based argument for the existence of a phenomenon, design of a solution to a problem or real-world ethical issue	
8. Obtaining, Evaluating, and Communicating Information	• Provides students with the opportunity to find, critically read, and present information in an appropriate form	• Find credible sources of information to critically read and analyze in order to learn more about a topic and appropriately communicate key ideas to others	

Developed by Brian Carey, Livingston Public Schools, 2017