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Alignment with the NGSS Science and Engineering Practices for K-12 Science Classrooms

Practice	Description	Story Example
Asking questions and defining problems	A basic practice of the scientist is formulating empirically answerable questions about phenomena, establishing what is already known, and determining what questions have yet to be satisfactorily answered.	How can I support the VA (Veterans Affairs) in providing veterans with a positive Internet experience that involves use of a mobile app?
Developing and using models	Involves construction of a wide variety of models and simulations to help develop explanations about natural phenomena.	N/A
Planning and carrying out investigations	A major practice of scientists is planning and carrying out a systematic investigation, which requires the identification of what is to be recorded and what are to be treated as the dependent and independent variables. Observations and data are used to test existing theories and explanations or to revise and develop new ones.	Works on her own and with developers, designers, product owners, scrum masters, program managers, and stakeholders to develop the product and to identify bugs or items to remove or include.
Analyzing and interpreting data	Scientists use a range of tools—including tabulation, graphical interpretation, visualization, and statistical analysis—to identify the significant features and patterns in the data.	Works with the development team to make sure everything is ready to go for handoff.
Using mathematics and computational thinking	Scientists use a range of computational devices for data collection and analysis.	See below.
Constructing explanations and designing solutions	Scientists construct explanations of phenomena that incorporate their current understandings and are of consistent with available evidence.	Organizes and pulls things together to make good design decisions and produce a product.
Engaging in argument from evidence	Scientists defend their explanations, examine their own understandings, examine their own understandings, and collaborate with peers in searching for the best explanation for the phenomenon being investigated.	Shares and discusses design-related components with other developers, designers and with the product owners, scrum masters, program managers, and stakeholders.
Obtaining, evaluating, and communicating information	Scientists read and write texts and communicate orally.	Communicates via online channels and in person.