

# Planning and Carrying Out Investigations

Elements of Student Performance

**High School**



[Science & Engineering Practice 3](#)

Observable features of the student performance by the end of grade 12:
<b>Identifying the phenomenon to be investigated</b>
Describe the phenomenon under investigation. Describe and the purpose of the investigation, which includes testing a conceptual, mathematical, physical, or empirical model.
<b>Identifying the evidence to answer this question</b>
Develop an investigation plan and describe the data to be collected and the evidence to be derived from the data. Describe how the evidence will address the purpose of the investigation through the relevant crosscutting concept. Describe how the data collected will be relevant to the purpose of the investigation.
<b>Planning for the investigation</b>
Develop an investigation plan* and describe the data that will be collected. Describe the tools and methods used in the plan and how they are relevant to the purpose of the investigation. Make directional hypotheses that specify both independent and dependent variables. Describe the number of trials and controls for each experimental condition. State whether the investigation will be conducted individually or collaboratively. Plan and conduct investigation in a safe and ethical manner including considerations of environmental, social, and personal impacts.  <small>* individually <u>or</u> collaboratively developed</small>
<b>Collecting the data</b>
Collect and record data based on the investigation plan.
<b>Refining the Design</b>
Evaluate the accuracy and precision of the data collected, as well as the limitations of their investigation. If necessary, refine the plan to produce more accurate, precise, and useful data.

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