

SCIENCE INQUIRY CHECKLIST GRADES 9-12

- Makes and describes observations in order to ask questions, hypothesize make predictions related to topic
 - formulates questions.
- Analyzes information from observations, research, or experimental data for the purpose of formulating a question
 - identifies problem.
 - make a reasonable prediction or hypothesis.
- Constructs coherent argument in support of that hypothesis.
- Identifies information/evidence that needs to be collected in order to answer the question, hypothesis, prediction.
- Develops an organized and logical approach to investigating the question, including controlling variables
 - designs investigations that test hypothesis (if applicable).
- Provides reasoning for appropriateness of materials, tools, procedures, and scale used in the investigation.
- Follows procedures for collecting and recording qualitative or quantitative data, using equipment or measurement devices accurately
 - uses tools appropriately.
 - uses appropriate techniques.
 - safely uses tools and techniques
 - conducts investigations thoroughly.
- Uses accepted methods for organizing, representing, and manipulating data, e.g. tables, graphs, or observations.
- Collects sufficient data to study question, hypothesis, or relationships
 - makes qualitative observations
 - collects quantitative data.
- Analyzes data, including determining if data are relevant, artifact (a result of incorrect procedure), irrelevant, or anomalous (out of ordinary)
 - represents, analyzes and interprets data.
- Uses evidence to support and justify interpretations and conclusions or explain how the evidence refutes the hypothesis
 - makes an accurate claim based on observations.
 - supports claims with appropriate data or evidence.
- Communicates how scientific knowledge applies to explain results, propose further investigations, or construct and analyze alternative explanations
 - communicates an understanding of ideas
 - critiques investigation.
- Works independently as a member of the team while completing assigned work.
- Draws independent conclusions from own data.
- Communicates ideas both orally and in writing within the team.
- Completes pre-lab assignment.