

Do You Want This To Be Said of Your Child/Students?



They ask questions and define problems.

YES/NO?

They:

- Ask and refine questions leading to descriptions and explanations of how the natural and designed world(s) works and which can be empirically tested.
- Clarify problems to determine the criteria for successful solutions.
- Identify constraints when solving problems about the designed world.
- Ask questions to clarify ideas.

They develop and use models.

YES/NO?

They:

- Use and construct models as helpful tools for representing ideas an explanation. These tools include diagrams, drawings, physical replicas, mathematical representations, analogies, and computer simulations.
- Uses modeling tools to develop questions, predictions, and explanations; analyze and identify flaws in systems; and communicate ideas.
- Uses models to build and revise scientific explanations and proposed engineered systems.
- Uses measurement and observation to revise models and designs.

They plan and carry out investigations.

YES/NO?

They:

- Plan and carry out investigations using data and identified variables in the field or laboratory, working collaboratively as well as individually.
- Identify the effectiveness, efficiency, and durability of designs under different conditions in engineering investigations.

They analyze and interpret data.

YES/NO?

They

- Produce data that must be analyzed in order to make meaning.
- Use a range of tools-including tabulation, graphical interpretation, visualization, and statistical analysis-to identify the significant features and patterns in data.
- Identify sources of error in the investigations and calculate the degree of certainty in the results.
- Use a range of tools, including technology, to identify patterns within data and interpret results from data.
- Use data to determine which engineering design meets the criteria.

They use mathematics and computational thinking.

YES/NO?

They:

- Use mathematics and computation tools for representing physical variables and their relationships.
- They construct simulations; solve equations; and recognize, express and apply quantitative relationships.

They construct explanations and design solutions.

YES/NO?

They

- Use explanations in science and develop solutions in engineering.

They engage in argument from evidence.

YES/NO?

They

- Use argument to listen to, compare, and evaluate competing ideas and methods based on merits, i.e., investigate a phenomenon, test a design solution, resolve questions about measurements, build data models, and use evidence to evaluate claims.

They obtain, evaluate, and communicate information.

YES/NO?

They:

- Critique and communicate ideas individually and in groups.
- Speak and writing using tables, graphs, diagrams, models, and equations .
- Participate in extended discussions.
- Employ multiple sources to obtain information that is used to evaluate the merit and validity of claims, methods, and designs.