

K-2-ETS1-1 Engineering Design

Students who demonstrate understanding can:

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

The performance expectation above was developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices

Asking Questions and Defining Problems

Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions.

- Ask questions based on observations to find more information about the natural and/or designed world(s).
- Define a simple problem that can be solved through the development of a new or improved object or tool.

Disciplinary Core Ideas

ETS1.A: Defining and Delimiting Engineering Problems

- A situation that people want to change or create can be approached as a problem to be solved through engineering.
- Asking questions, making observations, and gathering information are helpful in thinking about problems.
- Before beginning to design a solution, it is important to clearly understand the problem.

Crosscutting Concepts

Observable features of the student performance by the end of the grade:

1	Addressing phenomena of the natural or designed world
a	Students ask questions and make observations to gather information about a situation that people want to change. Students' questions, observations, and information gathering are focused on: <ol style="list-style-type: none"> A given situation that people wish to change. Why people want the situation to change. The desired outcome of changing the situation.
2	Identifying the scientific nature of the question
a	Students' questions are based on observations and information gathered about scientific phenomena that are important to the situation.
3	Identifying the problem to be solved
a	Students use the information they have gathered, including the answers to their questions, observations they have made, and scientific information, to describe* the situation people want to change in terms of a simple problem that can be solved with the development of a new or improved object or tool.
4	Defining the features of the solution
a	With guidance, students describe* the desired features of the tool or object that would solve the problem, based on scientific information, materials available, and potential related benefits to people and other living things.