

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.