### K-2. Engineering Design

**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. (K-2-ETS1-1)
- Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1)

**Developing and Using Models**
- Modeling in K-2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.
- Develop a simple model based on evidence to represent a proposed object or tool. (K-2-ETS1-2)

**Analyzing and Interpreting Data**
- Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations.
- Analyze data from tests of an object or tool to determine if it works as intended. (K-2-ETS1-3)

The performance expectations above were developed using the following elements from the NRC document: A Framework for K-12 Science Education.

### Disciplinary Core Ideas

**ETS1A: 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. (K-2-ETS1-1)
- Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1)
- Before beginning to design a solution, it is important to clearly understand the problem. (K-2-ETS1-1)

**ETS1B: Developing Possible Solutions**
- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem’s solutions to other people. (K-2-ETS1-2)

**ETS1C: Optimizing the Design Solution**
- Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (K-2-ETS1-3)

### Crosscutting Concepts

**Structure and Function**
- The shape and stability of structures of natural and designed objects are related to their function(s). (K-2-ETS1-2)

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