

## K-2-ETS1-2 Engineering Design

Students who demonstrate understanding can:

- K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.**

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

#### 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.

### Disciplinary Core Ideas

#### ETS1.B: 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.

### Crosscutting Concepts

#### Structure and Function

- The shape and stability of structures of natural and designed objects are related to their function(s).

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

1	Components of the model
a	Students develop a representation of an object and the problem it is intended to solve. In their representation, students include the following components: <ol style="list-style-type: none"> <li>The object.</li> <li>The relevant shape(s) of the object.</li> <li>The function of the object.</li> </ol>
b	Students use sketches, drawings, or physical models to convey their representations.
2	Relationships
a	Students identify relationships between the components in their representation, including: <ol style="list-style-type: none"> <li>The shape(s) of the object and the object's function.</li> <li>The object and the problem it is designed to solve.</li> </ol>
3	Connections
a	Students use their representation (simple sketch, drawing, or physical model) to communicate the connections between the shape(s) of an object, and how the object could solve the problem.