

## Performance Task

### 23.3 The Unification of Forces

#### Teacher Support

**Teacher Support** This performance task meets the following standard:

NGSS—HS-PS2-6. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

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Communication is an often overlooked and useful skill for a scientist, especially in a competitive field where financial resources are limited. Scientists are often required to explain their findings or the relevance of their work to agencies within the government in order to maintain funding to continue their research. Let's say you are an ambitious young particle physicist, heading an expensive project, and you need to justify its existence to the appropriate funding agency. Write a brief paper (about one page) explaining why molecular-level structure is important in the functioning of designed materials in a specific industry.

- First, think of an industry where molecular-level structure is important.
- Research what materials are used in that industry as well as what are the desired properties of the materials.
- What molecular-level characteristics lead to what properties?

One example would be explaining how flexible but durable materials are made up of long-chained molecules and how this is useful for finding more environmentally friendly alternatives to plastics. Another example is explaining why electrically conductive materials are often made of metal and how this is useful for developing better batteries.