Science & Engineering Practices

NEXT GENERATION SCIENCE STANDARDS (NGSS) aim to facilitate understanding of core ideas and ensure engagement in practices and projects that will instill deeper levels of scientific and engineering comprehension. At the Synopsys Outreach Foundation, we believe hands-on science projects are the perfect vehicles for implementing NGSS. Here are some example activities to help us keep in mind accepted science and engineering practices.

Synopsys OUTREACH FOUNDATION

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Defining Problems for Engineering

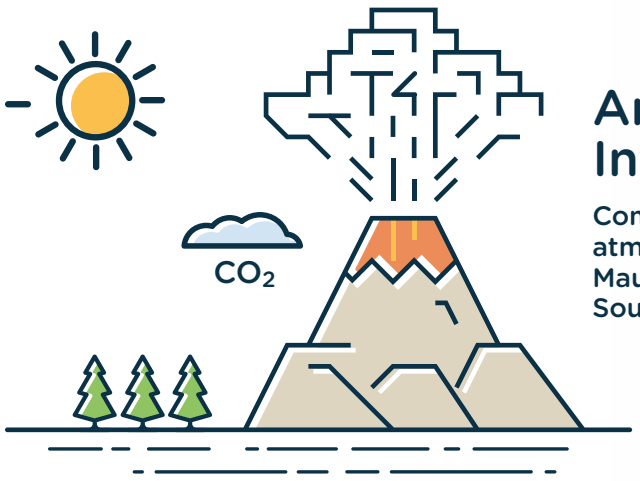
Can we design an earthquake safe home for areas where wood is scarce?

Asking Questions for Science

How can antibiotic use lead to antibiotic resistance in bacteria?

Developing & Using Models

How does wave theory help us model the Earth's interior?

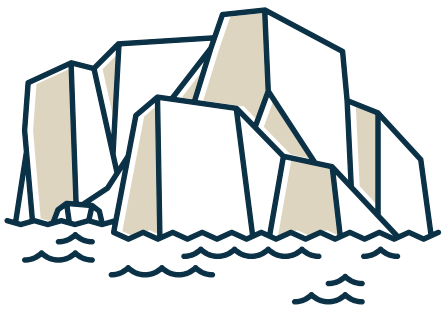


Analyzing & Interpreting Data

Compare graphs tracking atmospheric CO_2 at Mauna Loa and the South Pole.

Planning & Carrying Out Investigations

What is the relationship between wave height and erosion rate?

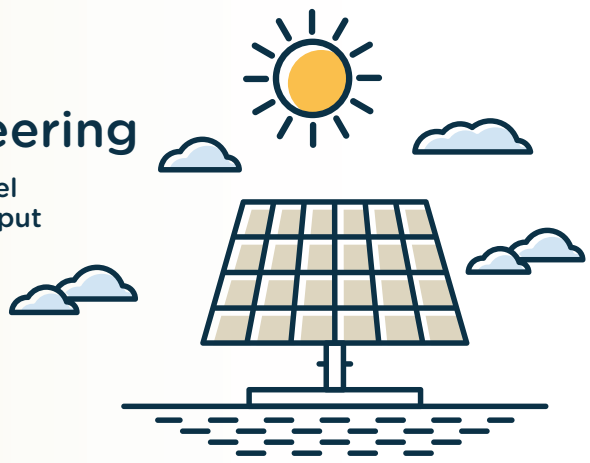


Engaging in Argument from Evidence

Defend statements with data.

Designing Solutions for Engineering

Create a solar panel that optimizes output for solar angles at our latitude.



Constructing Explanations for Science

Create a diagram illustrating the Greenhouse Effect.

Using Mathematics & Computational Thinking

Rate of water in –
Rate of water out =
Lake volume

Obtaining, Evaluating, & Communicating Information

Defend your science project before a judge.