

Absorption

Daily Required Materials

- Teacher/students' HP Stream & projector
- BasicBoard
- Student notebooks

Lesson 1 Starter Experiment

Additional Materials

- Follow directions to assemble a simple BasicBoard system that will investigate how light absorbed by different materials is converted into heat
- Understand how Logo collects and displays measurements from the absorption system.
- Describe any patterns you see in the initial data from the absorption system.
- Describe how the different components of the absorption system work together.

- Wire as needed
- 2 leashed temperature sensors
- Black construction paper
- White construction paper
- Piece of foam
- Tape
- Lamp with a light bulb

Lesson 2 Models and Questions

Additional Materials

- Propose a model to explain how matter and energy flow at both macroscopic and microscopic levels within this absorption system.
- Generate a testable scientific question that will refine, expand, confirm, or refute your current model of absorption.

- Worksheet: Models and Questions
- Starter experiment

Lesson 3 Investigation Plan

Additional Materials

- Describe what evidence is needed to answer your scientific question.
- Design an investigation and explain how this investigation will generate relevant patterns of evidence to answer the scientific question.
- After peer review of the scientific question and the investigation plan, revise the plan to increase relevance to your question and to generate data that is more accurate and more precise.

- Worksheet: Investigation Plan
- Starter experiment

Lesson 4 Evidence and Interpretation

Additional Materials

- Organize, represent, and analyze data from the investigation.
- Assess whether or not the data collected is sufficient evidence to answer the scientific question.
- Revise your absorption model and explain how this new model is a better fit for available evidence.

- Worksheet: Evidence and Interpretation
- Starter experiment

Lesson 5 Presentation

Additional Materials

- Create an evidence based account of the investigation process and answer to the scientific question. The format is selected by the instructor and may be a laboratory report, presentation, poster, video, model, etc.

- Refer to daily required materials