

Lesson 1: Sorting Gemstones

Solids can be sorted by color and shape.

Students record observations on how gemstones can be sorted and use observations to identify a pattern.

Lesson 2: Scratch Test

Solids can be sorted by hardness.

Students plan and carry out an investigation to sort objects by hardness and argue from evidence for which object is harder.

Lesson 3: Carving and Building Up

Hard and soft materials can be used to make different types of sculpture.

Students obtain information from a text on materials that are used to make sculptures and identify a pattern of hard materials being carved and soft materials being built up.

Lesson 4: Piece by Piece

Two different sculptures can be made from the same pieces.

Students carry out an investigation to see if they can make two different sculptures from the same pieces.

Lesson 5: Sands of Time

Solids and liquids have different properties.

Students record information on solids and liquids in a table to identify a pattern and argue from evidence for whether sand is a solid or a liquid.

Lesson 6: Boo-Boo Pack

The best material for a cold pack is one that is cold and behaves like a liquid.

Students record observations on the coldness of materials and how well they take the shape of an arm and identify the best material for a cold pack.

Lesson 7: Heating Wax

When wax is heated and cooled, it still works like a crayon.

Students carry out an investigation to find out the effect of a wax crayon being heated and cooled.

How Can We Change Solids & Liquids? Unit Storyline

Lesson 8: The Mystery of the Silver Necklace Some solids change and go back when heated and cooled and others change and don't go back.

Students obtain information from a text on the effect of several solids being heated and cooled. They construct an explanation for how a silver necklace can be made from wax wrapped in clay.

Science Challenge

Lesson 9: Gemstone Swap Part 1

A replica gemstone needs to be a solid and look transparent.

Students record information and use observations to identify a pattern of materials that are transparent and solid.

Lesson 10: Gemstone Swap Part 2

The best material for a replica gemstone is one that has the closest properties to a real gemstone.

Students argue from evidence for which material is the most transparent and the most like a solid.

Source: Smithsonian Science Education Center, How Can We Change Solids & Liquids? in Smithsonian Science for the Classroom. Carolina Biological, Burlington, NC, 2019.