

MATERIALS AND EQUIPMENT

The unit requires a variety of materials to support various ways of learning (including doing, discussing, listening, watching, reading, and writing). Prepare in advance by collecting the materials and equipment needed for all of the demonstrations and hands-on investigations.

- A large whiteboard, blank sheets of printer paper, student notebooks, pencils, and scissors are routinely required but not listed below.
- A classroom computer, tablet, or other computing device, as needed for discussion, is referred to in the materials for lesson segments in which it is used but is not repeated in the materials listed here. Internet access and the means to project images/videos for whole-class viewing are also required in many lesson segments but not repeated below.

Lesson 1, Part 2

- retractable ballpoint pens (1 per pair)
- large sheet of butcher paper (1 sheet per pair)
- glue dots (1 set per pair)
- glue gun (per instructor, optional)
- markers or colored pencils (assortment per pair)
- safety goggles (1 per student)
- tweezers (1 per pair, optional)

Lesson 1, Part 3

- labeled 5" x 8" lined index cards (1 per small group)
- pieces of small paper (several pieces per small group)
- fine-tip markers of different colors
- computer or laptop

Lesson 2, Part 2

- 3 envelopes (for demonstration)

Lesson 2, Part 3

- individual whiteboard or chalkboard (one per group)
- whiteboard markers or chalk

- computer with internet access
- large TV monitor or projector with display cables (such as HDMI, USB-C, or DisplayPort).

Lesson 3, Part 2

- tablet or other writing device (per group)
- different data-collection tools, such as digital thermometer, stopwatch, camera, scale, survey, online attendance book, etc. (one tool per group)
- computer with internet access for group research (optional)

Lesson 3, Part 3

- tablet or laptop with spreadsheet and graphing software (1 per group)
- tool reports from Lesson 3.2
- whiteboard or anchor chart with responses from Lesson 3.2
- examples of different types of graphs for display
- computer with school email for electronic submission of surveys

Lesson 4, Part 1

- two or three large blankets, sheets, or tablecloths

Lesson 4, Part 2

- building elements, such as foam beads and chenille sticks, marshmallows and lollipop sticks, gumdrops and toothpicks (about 30 pieces of each per group)
- tape (about 10 pieces per group)
- ruler or measuring tape for checking height (1 per group)
- book for testing strength (1 per group)
- stopwatch or timer with second counter (1 per group)
- digital camera or phone camera

Lesson 5, Part 1

- three or four buckets (support)

Lesson 5, Part 2

- chalk or painter's tape
- measuring tape
- stopwatch or timer

Lesson 5, Part 3

- index cards (3 per student)
- 3 boxes or bins to hold index cards

Lesson 6, Part 1

- dot matrix enlargement, or one found online to be displayed
- access to marching band drill charts for extension activities

Lesson 6, Part 3

- game construction materials: board materials (such as poster board, cardboard boxes, and/or file folders), construction paper, scrapbook paper, stickers, index cards, crayons, markers, colored pencils, scissors, glue sticks, tape,

game pieces (such as water bottle caps, mini erasers, and/or small manipulatives), spinners and/or dice (whole class)

- storage boxes or bins for completed games
- several common board games for demonstration

Lesson 6, Part 4

- game designs from Lesson 6.3

Lesson 7, Part 1

- access to blocks for the extension activity
- access to online resources for simple student debugging activities for the extension activity

Lesson 7, Part 2

- jar of peanut butter, initially closed (Note: if any students have a peanut allergy, you can substitute an unopened package of softened cream cheese for the peanut butter.)
- jar of jelly or jam, initially closed
- bag of sliced bread, initially closed
- paper plate
- knife
- paper towels

Lesson 8, Part 1

- two printed or online photos, one showing a person dressed in a fancy outfit and the other in a typical summer outfit

Lesson 8, Part 2

- computer or tablet with internet access and web browser (per group)

Lesson 8, Part 3

- teacher-created character cards representing diverse disabilities (1 per group)

Lesson 9, Part 2

- butcher paper or construction paper to assemble collage (piece per group)
- old magazines and/or access to printer for printing images
- yardstick (1 per group)
- ruler (1 per group)
- glue sticks (1 per group)
- markers (per group)
- computer with internet access
- large TV monitor or projector with display cables (such as HDMI, USB-C, or DisplayPort).

Lesson 10, Part 2

- game design projects from Lessons 6.3 and 6.4
- sticky notes