**Unit Essential Question:** *How do people use technology to survive in regions with different climates?*

**Overall Unit – All Tasks**

* Unit 2, Task Cards Student Version, Lift-Off and Tasks 1 through 5
* Culminating Project Student Task Card
* Project Organizer
* Projector with Audio (for video or images, whenever needed)

**Lift-Off Task (2 days, based on 45-minute periods)**

Per Student

* Task Card Student Version: Lift-Off
* Post-Its (Optional)
* Task Card Student Version: Culminating Project
* Project Organizer

Per Group

* Poster paper and markers
* Computers or Tablets (for research)

Whole Class

* Poster paper and markers
* \*See Instructions in Lift-Off for other optional materials to use for the class concept map

**Task 1 (4.5 days, based on 45-minute periods)**

Per Student

* Task Card Student Version: Task 1
* Project Organizer

Per Group

* Flashlight, Penlight, or Other Light Source
* Styrofoam Ball (at least 4 inches in diameter)
* 2 Toothpicks or Skewers
* Rubber Band
* Computer
* Computers or Tablets (for research)

Whole Class

* Large poster that says “Weather”
* Large poster that says “Climate”

**Task 2 (8 days, based on 45-minute periods)**

Per Student

* Task Card Student Version: Task 2
* Project Organizer
* 3” x 5” index card
* Article: *How Do Air and Water Move Around Our Planet?*

Per Group

* Two large poster papers and markers
* World Map handout

Whole Class

* Projector/Speakers
* Helium-filled mylar balloon (ideally 2 balloons)
* Straw (or chopstick to partially deflate helium balloon)
* Electric heating pad (or hair dryer as alternative)

**Task 3 (4 days, based on 45-minute periods)**

Per Student

* Task Card Student Version: Task 3
* Project Organizer
* Dice
* Optional: 3 Post-Its

Per Group

* Poster Paper
* Markers

Whole Class

* Water Molecule Journey Station Cards (2-3 per station) – Hang as posters around the room

**Task 4 (5 days, based on 45-minute periods)**

Per Student

* Task Card Student Version: Task 4
* Project Organizer

Per Group (Options of Materials to Provide Student Groups)

* Heat Source
  + Bin or Tub of Hot water
  + Heating Pad
* Any materials that can melt: Butter, Gummy Bear, Chocolate, Crayons, Candle Wax, etc.
* Aluminum Foil
* Wax Paper
* Cardboard
* Tape
* Plastic Knife
* Scissors

Whole Class

* Projector and Speakers
* 2 large beakers of same size
* Hot water
* Cold water
* 2 different colors of food coloring

**Task 5 (6 days, based on 45-minute periods)**

Per Student

* Task Card Student Version: Task 5
* Project Organizer
* Post-Its (At least 3)

Per Group

* Poster Paper (2)
* Markers
* Computers or tablets for research and to re-watch Task 4 *Conduction* video
* Options of materials to build and test prototypes
  + Heat Sources
    - Heating Pads
    - Hot Water in Containers
  + Thermometers
  + Timers
  + Tape
  + Aluminum Foil
  + Newspaper
  + Cardboard
  + Plastic Bags
  + Different kinds of Cloth
  + Bubble Wrap
  + Foam
  + Any additional materials you or students may want to bring from home

**Culminating Project (9 days, based on 45-minute periods)**

Product Presentation

* Materials to build physical prototype (See Task 5 Materials List)
* Poster Paper
* Color pencils/markers or computer graphics
* Presentation software (e.g., PowerPoint, Prezi, etc.)

Consumer Report

* Blank Paper or Computer Program
* Color pencils/markers or computer graphics