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| **Lesson Description: Lesson 3**  **Build Your Own Weather Station**  *This hands-on lesson will allow students to explore and construct some simple weather tools and use these tools to record meteorological weather data.* | | | | | |
| **Outcomes** [Steering_wheel_ship_1.png](#Outcomes) | | **Resources** [screencast.jpg](#Resources) | **Procedure** [resources.png](#Procedure) | **Assessments** [bigstock-A-yellow-folder-with-the-label-58273664.jpg](#Resources) | |
| **Grade:** *5*  **Subject:** *Science*  **Unit:** *Predicting the Weather* | | | | | |
| **Driving Question:** *How do we predict the Weather?* | | | | | |
| Steering_wheel_ship_1.png**Curriculum Outcomes:**  **Science:** *104-7, 204-8, 205-4, 205-10, 205-7, 300-13 using correct names of weather instruments, construct and use instruments to record temperature, wind speed, wind direction, and precipitation.* | | | | | |
| **Expected Time: 100 minutes** | | | | | |
| screencast.jpg**Resources:** I like to store all the materials at each station in separate green “cat litter” bins available at Home Hardware or Walmart. A dish washing pan would also be suitable for the purpose.   * Laminated set of all of the experiment cards (A back-up set is not a bad idea.) I have also uploaded the experiment cards to my class Moodle so that students can download them as a PDF and have them on their tablets.   Build an Anemometer Materials  - Five paper cups (Three ounce size)  - Two straight plastic soda straws  - Straight pin  - Paper punch  - Stapler  - Sharp pencil with eraser  - Felt tip marker  - Watch or timer (iPad Timer works well)  Build a Weather Vane Materials   * Broomstick or long wooden dowel, about one inch diameter * Aluminum baking dish, about six inches x nine inches * Wood stick, about 3/4 inch square and 12 inches long * Nail, about one inch long * Metal washer with a hole slightly larger than the nail * Duct tape * Small saw or serrated knife * Scissors strong enough to cut the aluminum baking dish * Ruler or tape measure * Silicone or other glue that will stick to aluminum * Leather gloves * (Optional) Hand drill, and small drill bit slightly larger than the nail   Build a Barometer Materials   * 12-inch ruler * Drinking glass or other container with sides tall enough to support the ruler * Clear plastic drinking straw or piece of clear plastic tubing * about 12-inches long * Modeling clay or chewing gum * Clear tape * (Optional) Food coloring   Build a Rain Gauge Materials   * Straight-sided glass or plastic container, with a diameter of about two inches or less (such as an olive jar) * Coat hanger or wire bent to make a holding rack * Measuring spoons: One teaspoon and 1/4 teaspoon * Hammer and nails to secure the rack * Felt tip marker | | | | | |
| resources.png**Lesson Procedure** | | | | | **21st century skills** |
|  | Teacher does (I Do): Building your own Station Lesson**Lesson 3: Description of Activity (10 Minutes)** Have students complete the Socrative Quiz from last night’s homework: “[The Meteorologist’s Toolkit Quiz](http://www.socrative.com/).” (SOC #: **16779534**)  Divide the students up into four small groups. You will have four weather instrument stations, so your students should be partitioned as evenly as possible between the four stations. Review with the students’ acceptable behaviour for group work and go over the activities at each station.  The teacher will have to setup the stations ahead of time. Each group will spend fifteen minutes at each station before rotating to the next station. Student Construction of Weather Stations**Lesson 3: Student Activity** (We do) **(60 Minutes)** “[Build Your Own Weather Station](http://eisnorgrade5.weebly.com/uploads/2/5/1/5/25151059/build_your_own_weather_station_directions.pdf)” Student groups will construct their own weather stations from which they can gather data for their culminating project.  They will be building four instruments that they can use to make scientific measurements of the local weather in Bridgewater, Nova Scotia.  These measurements can be recorded in their [weather journals (Lesson 4)](http://eisnorgrade5.weebly.com/lesson-4-ldquomy-weather-journalrdquo.html)This part of the activity will take approximately one hour. | | | | ☐ remember, understand  ☐ collaborate, communicate  ☐ remember, understand  ☐ collaborate, communicate  ☐ create, publish  ☐ citizenship |
| Student Experimentation with Weather Instruments**Lesson 3: Student Activity (15 Minutes)** Students will go out onto the playground to experiment with their weather instruments they can gather data and record it in their weather journals. In addition to the instruments that the students made I always give them a thermometer as well to measure temperature and have them install a compass app on their iPad tablets so they can find North when using their weather vane. Each student should be allowed to take each instrument home for an evening to further gather data on the local weather patterns. | | | | ☐ find, validate  ☐ collaborate, communicate  ☐ analyze, synthesize  ☐ critical thinking  ☐ evaluate, leverage  ☐ create, publish |
| Class Share (We Share)**Lesson 3: Whole Group Activity (15 Minutes)** Bring the students back together as a class after the experimenting with their meteorological tools. Discuss and record their findings on the SMART Board. What were some of the problems? No wind, too much wind, not raining etc… How could we try to solve these problems? | | | | ☐ collaborate, communicate  ☐ critical thinking  ☐ citizenship |
| **Lesson Wrap Up:**  **Closing Question:** What did we learn today about the instruments used by meteorologists to forecast the weather?    In the next lesson we will be setting up our weather journals | | | | | |
| **Differentiation/Modification/Enrichment:** | | | | | |
| bigstock-A-yellow-folder-with-the-label-58273664.jpg**Assessment:**  *Observation and participation in small group and class discussions.* | | | | | |
| **Teacher Reflection:** | | | | | |