

Content

7th Gr Science

Skills

-Developing Scientific Explanation (explaining answers using evidence from a reading and supporting why that evidence is supports their claim)

-Analyzing data and trends in a graph (reading a graph and defining relationship between the x-axis and y-axis)

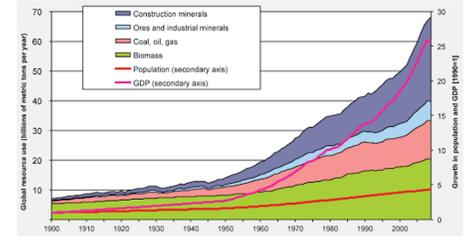
-Making Observations (describing objects based on what they can see and making sure those descriptions are detailed)

-Collecting data (collecting quantitative “numbers” or qualitative “observations” data based on a procedure)

-Following a procedure (reading a multi- step procedure and properly following directions)

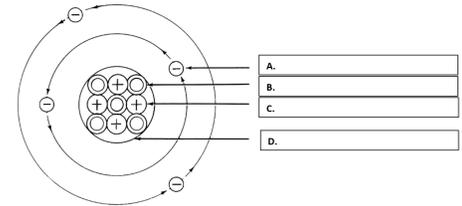
Example of the Skills

Claim	Evidence	Scientific Reasoning
Answers the question...usually one sentence/statement.	Numerical data to support claim.	Background research that supports claim.
Write a claim for the question above.	What type of evidence would best prove your claim? Where can this evidence be found?	Where can background research be found to support the evidence and claim?
The best basketball player of all time is _____.	_____	_____



As the human population increase, what happens to the consumption of natural resources?

What observations can you make based on information given for each of the subatomic particles.]



Examples

Quantitative Data ("Numerical")

- Height of 1st graders
- Weight of sumo wrestlers
- Duration of red lights
- Age of Olympians
- Distance of planets
- Money in 401k plans
- Temperature of coffee (200 F)

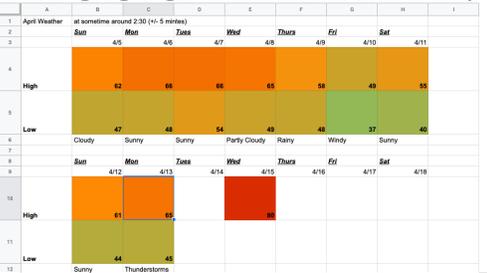
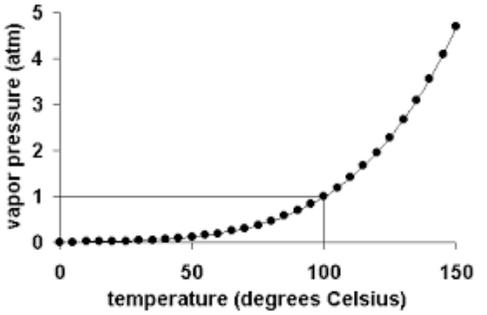
Qualitative Data ("Categorical")

- Happiness rating
- Gender
- Pass/Fail
- Eye Color
- Interview transcript
- Categories of plants
- Descriptive temperature of coffee ("very hot")

Procedure

1. Find a big lawn.
2. Unroll the package of Mentos.
3. Using the tool, place 2 Mentos into the tube of the tool.
4. Take the soda in your left hand with your right hand slowly twist the cap of the soda so that most of the gas will stay in the bottle.
5. Empty the Mentos into the Coke.
6. Repeat this procedure for each type of soda.
7. Measure how much soda remains in the bottle.
8. Analyze the data: the more soda left in the bottle, the less the explosion.

Content	Skills	Example of the Skills
<p>Living Environment</p>	<ul style="list-style-type: none"> - Claim, evidence and reasoning - Analyzing and Interpreting Data (graphing, finding averages, identifying trends) - Research skills (secondary sources of data and information) - Identification of cause and effect (hypothesis, trend, prediction) - Formation of questions (testable questions- IV and DV) 	<p>-Claim, Evidence and Reasoning NGSS Scientific explanation Tool</p>  <p>https://www.google.com/search?q=ngss+scientific+explanation+tool&source=lnms&tbn=isch&sa=X&ved=2ahUKEwjrpKa3x-jpAhUfl3IEHhdAzgQ_AUoAXoECA0QAw&biw=1366&bih=657#imgrc=WdgOegxgzD2W_M</p> <p>Resource-</p> <ol style="list-style-type: none"> 1. Khan Academy https://www.khanacademy.org/science/high-school-biology/hs-biology-foundations/hs-biology-and-the-scientific-method/v/data-to-justify-experimental-claims-examples 2. ck 12, For Literacy CK12 could be a good resource https://www.ck12.org/c/biology/ 3. Brain Genie 4. Weekly Science Section New York Times 5. HMMI virtual labs 6. Glencoe Virtual Labs

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<p style="text-align: center;">Earth Science</p>	<ul style="list-style-type: none"> -Literacy -Interpreting Data -Engineering <div style="background-color: #4a7ebb; color: white; padding: 10px; text-align: center; margin-top: 10px;"> https://curriculum.newvisions.org/science/course/earth-science/ </div>	<ul style="list-style-type: none"> - Read a book (or part of a book) & explain examples of science phenomena from class to a parent, sibling or friend - Weather Instrument [research and creation] <p>Daily Weather Chart for month cataloging highs and lows for the day.</p>  <table border="1" style="font-size: small; border-collapse: collapse; width: 100%;"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> <th>G</th> <th>H</th> <th>I</th> </tr> </thead> <tbody> <tr> <td>1</td> <td colspan="10">April Weather at sometime around 2:30 (+/- 5 minutes)</td> </tr> <tr> <td>2</td> <td>Sat</td> <td>Mon</td> <td>Tue</td> <td>Wed</td> <td>Thurs</td> <td>Fri</td> <td>Sat</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>45</td> <td>45</td> <td>48</td> <td>47</td> <td>48</td> <td>49</td> <td>410</td> <td>411</td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>High</td> <td>62</td> <td>64</td> <td>64</td> <td>65</td> <td>58</td> <td>49</td> <td>55</td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Low</td> <td>47</td> <td>48</td> <td>54</td> <td>49</td> <td>46</td> <td>37</td> <td>48</td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>Cloudy</td> <td>Sunny</td> <td>Sunny</td> <td>Partly Cloudy</td> <td>Rainy</td> <td>Windy</td> <td>Sunny</td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>Sat</td> <td>Mon</td> <td>Tue</td> <td>Wed</td> <td>Thurs</td> <td>Fri</td> <td>Sat</td> <td></td> <td></td> </tr> <tr> <td>9</td> <td>412</td> <td>413</td> <td>414</td> <td>415</td> <td>416</td> <td>417</td> <td>418</td> <td></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>High</td> <td>61</td> <td>62</td> <td></td> <td>66</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Low</td> <td>44</td> <td>45</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>12</td> <td>Sunny</td> <td>Thunderstorms</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		A	B	C	D	E	F	G	H	I	1	April Weather at sometime around 2:30 (+/- 5 minutes)										2	Sat	Mon	Tue	Wed	Thurs	Fri	Sat			3	45	45	48	47	48	49	410	411		4										High	62	64	64	65	58	49	55			5										Low	47	48	54	49	46	37	48			6	Cloudy	Sunny	Sunny	Partly Cloudy	Rainy	Windy	Sunny			7										8	Sat	Mon	Tue	Wed	Thurs	Fri	Sat			9	412	413	414	415	416	417	418			10										High	61	62		66						11										Low	44	45								12	Sunny	Thunderstorms							
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<p style="text-align: center;">Chemistry</p>	<ul style="list-style-type: none"> • How to read a procedure/instructions/blurb of information on a reagents questions • How to read/create graphs • Math skills (Algebra, Ratios, conversions) • Also... • Developing models • Scientific vocabulary retainment & memorization (Basic Science Facts) 	<p>Procedure See the pre-lab report for an outline of the general procedure. In the actual experiment, the following changes to the written procedure were made: 0.5 grams of the unknown sample was measured out for each trial instead of 0.8 grams.</p>  <p style="text-align: center;">vapor pressure (atm)</p> <p style="text-align: center;">temperature (degrees Celsius)</p> <ul style="list-style-type: none"> • Math Conversions <div style="background-color: #2e3436; color: white; padding: 10px; margin-top: 10px;"> <p style="text-align: center; color: yellow;">Chemistry Conversions</p> $\frac{350g}{1} \times \frac{1kg}{1000g} = 0.350kg$ $1km = 1000m \quad D = \frac{m}{V}$ $1mol = 6 \times 10^{23} \quad V = lwh$ $1mile = 5280ft$ </div>																																																																																																																																																																											

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<p>AP Environmental Science</p>	<ul style="list-style-type: none"> ● Design an experiment ● Analyze an environmental problem and propose a solution ● <u>Math Skills:</u> <ul style="list-style-type: none"> ○ Pre-algebraic word problems ○ Dimensional Analysis ○ Density ○ pH ○ Half-life ○ Scientific Notation ○ Long division by hand ○ Percentages ○ Percent change ○ Metric conversions ● Population math 	<p>For details on skills and resources and videos for content information, visit this website: https://teachingapscience.com/</p>