

For Every Object, A Group

By Trista L. Pollard

¹ Just like everything has its place, every object and event belongs in a group. How do we know? We know this fact through the science process skill called **classification**. Scientists use **classifying** to learn information about objects and events.

² There are many different ways to classify objects. When scientists classify objects, they look at the **properties** of those objects. Scientists use the absence or presence of those properties in objects to determine their placement into groups. When you were in kindergarten, you could classify objects into one group, maybe based on size. Think about the blocks you played with in class. You probably put them into groups called "big blocks" and "little blocks." As you have aged, you now are able to see that objects can be classified into more than one group at a time. For example, let's look at sneakers. As you know, there are many different varieties and brands that exist on the market today. However, all sneakers have one thing in common- rubber soles. The material used to make the soles for sneakers is considered a specific property of sneakers. We could examine sneakers further and find that the material used for the uppers (the shoe part of the sneaker) varies. Based on the material, we could classify sneakers into three groups- leather, cloth, and suede. But why stop there? We could also classify sneakers based on style. You have low sneakers and high sneakers. You could go on classifying sneakers until each sneaker stands alone in its own group.

³ In addition to classifying objects based on properties, scientists may classify objects **quantitatively**. Quantitative refers to amount such as age, weight, or percent. Scientists can look at the amount of a property that exists within an object and classify that object based on that amount. Objects can also be arranged in a **hierarchy** or order based on property quantities. Think about digital cameras. Like sneakers, there are many on the market today. There are so many, it is sometimes hard to tell what to purchase. All digital cameras perform the same basic functions. However, they do have some properties that vary between cameras. We could separate digital cameras into groups based on the amount of mega pixels (detail of digital picture). Some cameras have 2, 3, or 4 mega pixels. We could also separate cameras based on digital zoom (how close you can zoom into an object). Some digital cameras have 3x or 4x digital zoom capability. All of these numbers are quantitative properties of digital cameras that scientists could use to classify the cameras into categories or groups. These properties can be used further to help rank digital cameras from the best to the worst.

⁴ When classifying objects or events into groups, it is important to analyze the similarities and differences between the objects' or events' properties. Once this occurs then you can begin to place your objects and events into their many groups. Just remember every object and event belongs to a group, even sneakers.

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<p>1. When scientists classify objects and events, they use the _____.</p> <p><input type="radio"/> A Definition of the objects' or events' properties</p> <p><input type="radio"/> B Absence or presence of the objects' or events' properties</p> <p><input type="radio"/> C The group that the objects or events were placed into previously</p> <p><input type="radio"/> D None of the above</p>	<p>2. Scientists may use an object's properties to classify them quantitatively into groups.</p> <p><input type="radio"/> A False</p> <p><input type="radio"/> B True</p>
<p>3. Classify the following objects or events into groups. Explain why you chose the categories for these objects or events.</p> <p>Tornadoes, hurricanes, cyclones, blizzards, thunderstorms</p> <p>_____</p> <p>_____</p>	<p>4. Classify the following objects or events into groups. Explain why you chose the categories for these objects or events.</p> <p>Ways seeds travel in nature</p> <p>_____</p> <p>_____</p>
<p>5. Classify the following objects or events into groups. Explain why you chose the categories for these objects or events.</p> <p>Granite, pumice, obsidian, limestone, sandstone, marble</p> <p>_____</p> <p>_____</p>	<p>6. Classify the following objects or events into groups. Explain why you chose the categories for these objects or events.</p> <p>Jupiter, Mars, Saturn, Uranus, Earth, Mercury, Pluto, Neptune, Venus</p> <p>_____</p> <p>_____</p>
<p>7. Classify the following objects or events into groups. Explain why you chose the categories for these objects or events.</p> <p>A car rusting, ice melting, a match burning, an egg cooking, a glass breaking, cheese melting</p> <p>_____</p> <p>_____</p>	<p>8. Classify the following objects or events into groups. Explain why you chose the categories for these objects or events.</p> <p>Drum, flute, banjo, cello, saxophone, guitar, trumpet, cymbals, piano, xylophone, violin, clarinet</p> <p>_____</p> <p>_____</p>

