

Classification Activity

When scientists make observations about the world, they often have to develop classification systems. A classification system is a way to put things into categories, and if you think of it your life is full of them! If you're a normal human (we don't want to make any assumptions here!) you probably put everything in your life into some kind of category. You have categories for people like "family members," "friends," and maybe even "enemies." And you have categories for things like "living things," "useful things," and so on and so on.

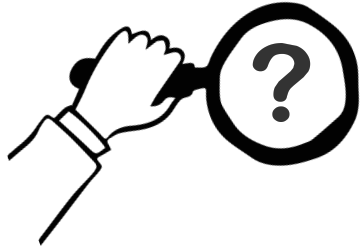
But how do you know what goes in one category or another? Sometimes it helps to have really concrete definitions of what puts something in one category versus another. So we're going to try developing a **system** to help us understand how to categorize the world around us.

What You Need

- A bunch (no fewer than 5, but no more than 10) of random items from around your house--the more different from each other, the better!
- This document, printed out
- A pencil or pen, or crayons or markers if you want to get fancy

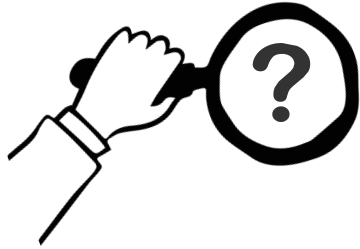
What You're Going to Do

1. Arrange all the items you've collected in front of you on a table.
2. Looking at each item **one at a time**, complete the observation chart (attached) for each item. Follow the instructions on the chart, and be as thorough as you can!
3. Once you've recorded as many details about each object as you can, start noticing what traits the objects might have in common with each other.
4. Start organizing the objects into **two** main categories. These categories can be based on anything you like--size, shape, color, function, whatever!--but all the objects in a category **must have something in common**. Record it on the form provided.
5. Once you have two main categories, start building **sub-categories!** A sub-category is a group of objects within a larger group that share additional traits in common. Use the form provided.
6. Keep going until you have as many sub-categories as you think you can create! Once you're there, **congratulations!** You've created a classification system.
7. Now, it's time to test it! Search your house, and find something new. Does it fit easily into a category you've created? Or do you need to create a whole new category?



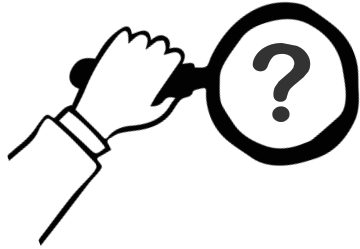
Observation Chart

Object #	What is it? (Put "unknown" if you don't know)	Draw the Object	Is it big or small (measure if you have a ruler)?	Is it heavy or light (weigh it if you have a scale)?	Other - Put as many observations as you can
<u>1</u>					
<u>2</u>					
<u>3</u>					
<u>4</u>					
<u>5</u>					



Observation Chart - Cont'd

Object #	What is it? (Put "unknown" if you don't know)	Draw the Object	Is it big or small (measure if you have a ruler)?	Is it heavy or light (weigh it if you have a scale)?	Other - Put as many observations as you can
<u>6</u>					
<u>7</u>					
<u>8</u>					
<u>9</u>					
<u>10</u>					

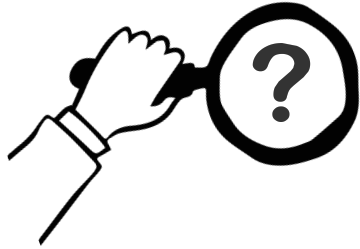


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Create your first two categories - Complete the form below

Category 1	Category 2
<p><u>Category Name:</u></p> <p><u>Objects in Category (give object names or numbers):</u></p> <p><u>What traits do all the items in this category have in common?</u></p>	<p><u>Category Name:</u></p> <p><u>Objects in Category (give object names or numbers):</u></p> <p><u>What traits do all the items in this category have in common?</u></p>

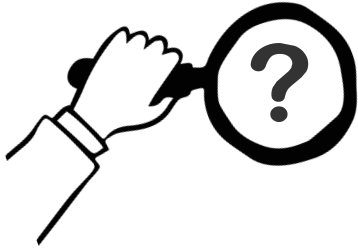


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Now create some **sub-categories**. Can the objects in your two main categories be grouped together in more sub-groups? Organize

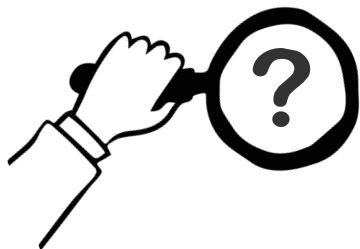
Main Category 1		Main Category 2	
<u>Sub-Category Name:</u>	<u>Sub-Category Name:</u>	<u>Sub-Category Name:</u>	<u>Sub-Category Name:</u>
<u>Objects in Category (give object names or numbers):</u>	<u>Objects in Category (give object names or numbers):</u>	<u>Objects in Category (give object names or numbers):</u>	<u>Objects in Category (give object names or numbers):</u>
<u>What traits do all the items in this category have in common?</u>	<u>What traits do all the items in this category have in common?</u>	<u>What traits do all the items in this category have in common?</u>	<u>What traits do all the items in this category have in common?</u>



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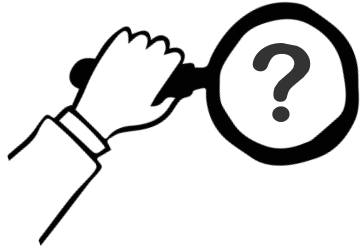
Can you create even more sub-categories? If so, write them down here.
How can you keep all your sub-categories organized?



New Objects

Now, either collect some new things from around the house or your teacher will give them to you. Record your observations about those new objects here.

Object #	What is it? (Put "unknown" if you don't know)	Draw the Object	Which main category does it fit in (put "none" if it doesn't fit!)	Which sub-category? Or do you need a new one?	Can you further classify this object?
<u>1</u>					
<u>2</u>					
<u>3</u>					
<u>4</u>					



Reflection Questions

1. Was it easy or hard to design a classification system? Why?
2. Did you discover any categories that surprised you?
3. When you collected new objects, did you find your system still worked, or did you need to create new categories? Explain how, and why.