Lesson 1

What is Inside?

Background: An atom is _____ that makes up all matter (stuff). An atom is extremely small and can currently only be seen with an atomic force microscope, which magnifies an atom up to one million times. So scientists have never seen the inside of an atom. Yet, we know a lot of information about an atom. What it looks like, its size, its mass, and what its composition is (or what it is made of). How can scientists know so much about something they cannot see?

Your job: You and your group will be given a box that contains an unknown object inside. You must develop a plan to learn as much about the object you can. Then, using your data, make an educated guess (hypothesis) about what the object inside the box is.

To get started, list some properties that objects have that can help identify it. Then, make a plan for testing that property. Finally, record your observations/outcome of the test (this is your data you will use to build your conclusion).

Property	How will I test this property?	Observations/Outcome

Now, analyze your results and do your best to conclude about what the object is inside the box. You can organize your thoughts like this if you choose:

What do I know about the object: 1)_____

2)_____

3)_____

4)_____

5)_____

6)_____

What don't I know about the object: 1)_____

2)_____

3)_____

4)_____

5)_____

6)_____

If allowed, what other tests could you perform on the box to find out more information about the object?

_____
_____
_____
_____

What do you conclude the object is? _____

Explain your reasoning:

_____
_____
_____
_____

The object is _____