Name: _____

Date: _____

Investigation: Building a Model From Indirect Evidence

SNC2D

You are to guess the properties of the contents of a sealed "black box." You are not allowed to open the box. This means that you must form a model from indirect evidence.

Procedure:

1. Obtain one of the sealed "black boxes" from your teacher. Note the box number in the observation table.

2. Observe the size and shape of the container and record in the table what constraints the size and shape of the container place on its contents.

3. Lift the container and note its weight. Record in the table what constraints the weight of the container places on its contents.

4. Move the container: tilt it, shake it from side to side and up and down. Note any sounds made by the contents and the shift in weight of the contents as the container is moved. Record your observations in the table.

5. Perform any other different test(s) you can think of and record your observations.

Observations:

Test	Observations
Size	
Shape	
Weight	
Sound	
Shift in Weight	

Discussion:

What can you infer about the contents of the box with a high degree of certainty based on your observations?

_____

_____

_____

_____

_____

Note that you cannot be too specific here. You may be able to infer that the box contains "a small and lightweight metal object" with some certainty; you cannot be certain that the object is a paperclip.

What can you infer about the contents of the box with a lower degree of certainty (i.e., what can you guess) based on your observations?

_____

_____

_____

Can you think of any ways of testing your inferences without opening the box?

_____

_____

Open the box. Which of your inferences were correct?

_____

_____

Which were incorrect or incomplete (i.e., what did you miss)?

_____

_____

Could any of your incorrect or incomplete inferences have been corrected by further testing? If so, what?

_____

_____