Name:_____ Date:_____

Science is a Breeze: Using Wind Tunnels

Once you have built your wind tunnel using the instructions from **NASA Connect: The Measurement of All Things**, you will test five cars in it. For each car, you will run three trials. Use the data table to record the results of your tests. On your table include the following:

- List the five cars you will test.
- The mass of each car you will test.
- The drag force values for each of the trials.
- The average drag force values for each car.

Procedure:

1. Before you begin, make predictions about the drag force values for each car. Explain your predictions in the space provided on the data table.

2. Test each car in the wind tunnel three times. To test the cars, tie a loop in the string and hook the loop around the front wheels. (Note: The drag force testing gauge will be displaced by the mass of the car. It should move even farther when the fan is turned on.)

3. Record the drag force values in your data table. Be sure to record only the change in drag force caused by the fan.

4. For each car, calculate the average drag force value.

5. Once you have completed the tests and recorded the results, answer the questions at the end of this packet.

Name:_____ Date:_____

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Data Sheet

Type of Car	Mass of Car	Prediction	Trial #1 Drag Force Value	Trial #2 Drag Force Value	Trial #3 Drag Force Value	Average Drag Force Value

Name:_____ Date:_____

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Check Your Understanding

Check the actual average drag force values against your predictions. What did you find?

What variables were changed in this experiment? Was the experiment controlled?

What effect did the changing variables have on the accuracy of your predictions?

How is this experiment similar to wind tunnel experiments used by NASA? How is it different?

Most Matchbox cars are made to scale from the actual car they are to represent. How could the experiment you just conducted be used to compare the aerodynamics of real cars?