

# i3 STC Kit Extension Activities

## North Carolina

<b>Grade:</b> 5th	
<b>Kit Name:</b> Motion and Design Unit	
<b>Essential Standard(s):</b> (List number, standard, clarifying objectives where appropriate) 5.P.1.3: Illustrate the motion of an object using a graph to show a change in position over a period of time.	
<b>Unpack the Standard</b> (What does it mean?? What is the "Big Idea"?): Motion graphs can tell you how far an object has traveled, how fast it is moving, and all the speed changes there have been.	
<b>What is the Engaging</b> (will get the student interesting) <b>Essential Question</b> that the students will be trying to answer as a result of this Extension? How can we show movement by using graphs and charts? What would it look like if the object went faster or slower or if it stopped?	
<b>Which activities in the kit touch on the Standard(s) and how can they be adjusted to better address the Standard(s)?</b> <b>Lesson 4 of Kit: Testing the Motion of Vehicles Carrying a Load,</b> has the students using a line plot to illustrate the range of measurement and allows them to decide which number or set of numbers best represent the trials of the movement that their vehicles creates. This does not give the students a clear picture of what movement would like from an object moving faster, slower or not moving.  <b>Lesson 7: Testing the Result of Rubber Band Energy,</b> in this lesson the students collect data from paper strips on the movement of their vehicles while using rubber band energy. They do three trials and collect data on a table, (Figure 7-3 of student handbook). This graph does not clarify and show clear movement in a line-plot format. There is an extension on lesson 7, extension #5, (new manual, literacy/extensions) and #1 (old manual, mathematical extension), on how to do this graph, but clarification is needed for the students to complete the task.	
<b>Kit Activity</b>	<b>Extension Suggestions</b>
Lesson 4: Testing The Motion of Vehicles Carrying A Load	<a href="http://nces.ed.gov/nceskids/createagraph/default.aspx?ID=177a2d1307ad4aa2a72e6b530410450c">http://nces.ed.gov/nceskids/createagraph/default.aspx?ID=177a2d1307ad4aa2a72e6b530410450c</a>  Take data gathered from Lesson 4- Record Sheet 4-A, and place data into the line graph input of website. Have students print out final line graph that they created. Have them work in groups of 3 and compare and contrast the line graphs created. Then have each group present the similarities and differences of their groups graphs.
Lesson 4 or Lesson 7	<a href="http://www.nsa.gov/academia/_files/collected_learning/elementary/data_analysis/line-plots_frogs-in-flight.pdf">http://www.nsa.gov/academia/_files/collected_learning/elementary/data_analysis/line-plots_frogs-in-flight.pdf</a>  This activity is to teach students how to construct and interpret line plots. Students collect data on how far their origami frog's jump by measuring to the nearest inch. A line plot containing a title, label, and scale is constructed based on the frog jumping data. The line plot is used to display, interpret, and analyze the data gathered from the student's investigation. The website in the activity given to create the origami frogs is no longer functioning. Below are sites that will help students to create the jumping origami frogs so activity can be completed. <a href="http://www.frogsonice.com/froggy/origami/">http://www.frogsonice.com/froggy/origami/</a> or <a href="http://www.origami-instructions.com/origami-frog.html">http://www.origami-instructions.com/origami-frog.html</a>
Additional Suggestions (Literature connections; online resources): <a href="http://library.thinkquest.org/28388/Mechanics/Velacc/graph.htm">http://library.thinkquest.org/28388/Mechanics/Velacc/graph.htm</a> (How a motion graph looks)	

<http://scnces.ncdpi.wikispaces.net/K-5+Science+Resources> (Great resources on motion graphs and information on Motion and Design)

[http://www.mysciencesite.com/motion\\_graphs.pdf](http://www.mysciencesite.com/motion_graphs.pdf) (An assessment on graphs)

<http://phet.colorado.edu/en/simulation/moving-man> (A interactive download to show movement, velocity and acceleration on a line plot)