

LOS ANGELES UNIFIED SCHOOL DISTRICT
 “Standards-Based Instruction Model”*

Subject/Course Science Grade Level 5 Standard #(s) 25 Standard(s) (What students should be able to do) Work independently and in groups to investigate scientific questions by identifying and proposing solutions to control for variables; collect, compile, and evaluate data following safety procedures and ethical standards investigations.

District Elementary Course of Study (Concepts) or Secondary Guidelines for Instruction (Instructional Unit) Physical Science/Investigations

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CULMINATING TASK/ASSIGNMENT What will the individual student produce to demonstrate achievement of the standard(s)? Begin the task with a verb.	ASSESSMENT What criteria will be used to evaluate/score student work/performance of the culminating task? The statement of the product to be scored is followed by a verb.	INSTRUCTIONAL ACTIVITIES What learning activities will the student be involved in to acquire content knowledge and skills to achieve the standard? Consider alternative strategies and modifications to promote equal access for all learners. Begin each learning activity with a verb describing what the student is to do.	TIME How much time will be required for the student to complete each of the activities?	RESOURCES What materials, textbooks, supplies, documents, etc., will support the student doing each instructional activity?
Design an experiment using a paper airplane that will test for one variable which affects flight; write a summary describing the experiment and presenting the data.	The summary: 4: Describes a clearly executed experimental design that tests for the effect of a variable; records observations neatly and accurately; reaches a valid conclusion supported by the data; organizes the summary coherently and is generally free of errors in writing. 3: Describes an experimental design that tests for the effects of a variable, but may be unclear in parts; produces and records data, but may not always be accurate; may not be completely supported by the data; demonstrates some lack of organization and some errors in writing. 2: Describes an experimental design that does not clearly specify the effect of one variable on flights; produces data that is inaccurate or unclear; conclusions are not supported by the data; shows lack of organization and contains many errors in writing. 1: Attempts to describe an experimental design, but does not test for a variable; contains insufficient data to support valid findings; shows little or no connection between the experiment and	<ul style="list-style-type: none"> ▪ Discuss experiment procedures and criteria for judging the summary. ▪ Discuss the benefits of scientific investigation and proposing solutions to control for variables. ▪ Design a clay boat and test for the variable of shape to see how many pennies it can hold before sinking. Attempt to find the best shape to hold the highest number of pennies. Test boat in groups of 4-5. ▪ Repeat above activity testing variables of boat size and penny placement. ▪ Record data resulting from testing the controlled variables. ▪ Construct in pairs a pendulum with string and a paper clip to test how the variable of length of string affects the number of times a pendulum swings in 30 seconds. ▪ Graph the data and write conclusions. ▪ Experiment in groups with toy cars and test for the variable of weight. Test how long it takes a toy car to travel down a ramp, adding different weights. Repeat activity testing two different-size cars. ▪ Record and evaluate the data to determine whether variables have an effect on speed. 	30 minutes 30 minutes 120 minutes 120 minutes 60 minutes 120 minutes 90 minutes 180 minutes 60 minutes	FOSS Variables module Ten pennies per group of students Paper clips Clay String Toy model cars

Paper Airplane

	the conclusion; shows no clear understanding of the task; contains serious errors in writing.			
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*Model developed, refined, and field-tested by Task Force on Standards-Based Instruction