Motion and Design: Suggestions for Collecting Work Samples

We are fortunate that our science curriculum is very inquiry oriented. At each grade level there are many opportunities built-in for students to do inquiry. Often all that is necessary is remove some of the teacher direction and structure, but supply students with available materials. We have identified opportunities for inquiry work samples in Motion and Design. Although these activities provide an opportunity for students to **demonstrate all four components** of inquiry, they can also be used to give students practice on individual components.

Lesson	Lesson Title	Description
3 & 4	• Pulling a Vehicle: Looking at Force • Testing the Motion of Vehicles Carrying a Load	In this pair of activities students design and carry out a controlled experiment. To use for a work sample do the following: • Do Activity 3 as written. This experience will provide students with the preliminary observations they will need to design their own investigation in Activity 4. • In Activity 4 students will look at the effect of changing the mass of their vehicles. After a class discussion describing the conceptual problem students can move to the "Scientific Inquiry Report Form" to design and carry out their investigations.
6 & 7	• Evaluating Vehicle Design: Looking at Rubber Band Energy • Testing the Effects of Rubber Band Energy	In this pair of activities students design and carry out a controlled experiment. To use for a work sample do the following: • Do Activity 6 as written. This experience will provide students with the preliminary observations they will need to design their own investigation in Activity 7. • In Activity 7 students will look at the effect of varying the number of "winds" of the rubber band. At this point students can move to the "Scientific Inquiry Report Form" to design and carry out their investigations.
9 & 10	• Designing and Building a Vehicle with a Sail • Testing the Effects of Air Resistance on a Vehicle's Motion	In this pair of activities students design and carry out a controlled experiment. To use for a work sample do the following: • Do Activity 9 as written. This experience will provide students with the preliminary observations they will need to design their own investigation in Activity 10. • In Activity 10 students will look at the effect of attaching a sail to their vehicle. At this point students can move to the "Scientific Inquiry Report Form" to design and carry out their investigations.