

Measuring Time: 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 Measuring Time. 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
5, 6	<ul style="list-style-type: none"> • Predicting the Phases of the Moon • Observing the Phases of the Moon 	<p>These two activities provide an opportunity for an observational investigation.</p> <ul style="list-style-type: none"> • Do the prediction portion of Activity 5 as written. At this point students can move to the “Scientific Inquiry Report Form” to design and carry out their investigations. They will observe the moon over at least a month. • The modeling students do in Activity 6 will give them some background information they can use in proposing explanations for their observations of how the moon phases change over time.
7, 8, 9	<ul style="list-style-type: none"> • Using Water to Measure Time • Planning an Experiment with Sinking Water Clocks • Experimenting with Sinking Water Clocks 	<p>this series of activities students are guided through designing a controlled experiment. To use for a work sample do the following:</p> <ul style="list-style-type: none"> • Do Activity 7 as written, discuss as a class variables that affected how fast the foil sank (number of washers, hole size, number of holes, size of structure, etc.). • Do the first part of Activity 8 where students are directed to construct a “standard clock” and do 3 trials to see how long it takes to sink. Discuss as a class which variables they will need to hold constant. • At that point students can move to the “Scientific Inquiry Report Form” to design and carry out their investigations--this would replace the second part of Activity 8 and all of Activity 9.
10, 11, 12	<ul style="list-style-type: none"> • Investigating Pendulums • Experimenting with Pendulums • Comparing Results 	<p>this series of activities students are again guided through designing a controlled experiment. To use for a work sample do the following:</p> <ul style="list-style-type: none"> • Do the first part of Activity 10 (through step 8) as written. • Once the class has discussed the possible variables students could move the “Scientific Inquiry Report Form” to design and carry out their investigations--this would replace Activity 11. • Activity 12 provides students an opportunity to try another group’s experimental design, this would be an excellent opportunity for students to focus on the “Designing the Investigation” component of inquiry.

