

**Contribution from...
Piscataway Township Schools
Instructional Plan**

Week of:		Teacher/ Grade	7	Subject/ Period	SCIENCE
Theme:	Introduction to Science				
Enduring Understandings					
Organizing thoughts builds reasoning. If a hypothesis is posed, it must be tested and proved. Nothing is as it seems, unless you rely strictly on your senses.					
Essential Questions					
How are scientific questions answered?					
Objectives					
Students will know... Using the scientific method will help organize their thoughts and develop their process skills. Parts of the scientific method. The basic structure, components, and pedagogical benefits of taking and using Cornell notes. The operational definitions of observation, inference, prediction and comparison. That one way to represent data collected, is through a line graph.					
Students will be able to... Define observation, inference, comparison and prediction. Form Cornell Notes based on scientific lecture. Use Cornell Notes as a study tool. Make observations based on their five senses. Contrast an observation from an inference. Make predictions based on trends and relationships of data.					
Content Vocabulary					
Scientific method, quantitative observation, qualitative observation, classification, prediction, inference, hypothesis, procedure, manipulated variable, responding variable, operation definition, line graph, conclusion					
Resources/Materials					
Life Science text book, teacher-made reproducibles, http://schools.brunnet.net/jmaahs/cornell.html (The Cornell Note taking system)					

Name: _____ Week of: _____

Instructional Strategies/Lesson Sequence		
	MONDAY - A	TUESDAY - B
Access Prior Knowledge (Assessing what students know)	You are conducting an experiment to answer the question, “Does water temperature effect the rate at which fish eggs hatch?” Identify what would be your MV, RV, and controls. Designed to recall information from the 6 th grade – Intro to Science Unit.	
Motivation (the hook)	Students will be completing Cornell Notes for the first time this week. Heavy emphasis will be placed on note-taking skills and strategies. Banana candle is a big hit, especially when the teacher eats the “candle!”	
Learning Activities	<ol style="list-style-type: none"> 1. DO NOW – see access prior knowledge. 2. Students will complete class notes as the teacher lectures from the scientific method powerpoint. Students will take down pertinent information on the steps to the scientific method as well, as skills scientists use to explore and experiment. 3. Part-way through the powerpoint students will be asked to make qualitative observations on an object (known to the teacher as the “banana candle.”) By completing this activity students should see a contrast between an observation and an inference. 4. Several slides of the powerpoint have been made that focus on observation skills. Students will be given 15 seconds to look at a picture and several questions will be asked. It’s presented in a light and game-like manner. 	
Closure	Students will be asked to check over their notes for comprehension and completeness. Recall Question: What’s the difference between a MV and an RV? What’s the difference between a qualitative observation and a quantitative observation? How is a hypothesis written?	
Homework	Analyze and review Cornell notes. (complete left-hand-side with questions and begin studying.) “Introduction to Life Science” WS	
Assessment	Cornell notes will be checked, students will be asked to study from them before any test or quiz.	

Name: _____ Week of: _____

Instructional Strategies/Lesson Sequence		
	WEDNESDAY – A	THURSDAY - B
Access Prior Knowledge (Assessing what students know)	Students will be making both types of observations (qualitative and quantitative) on a stick of gum before, during, and after chewing.	
Motivation (the hook)	This is the ONE and ONLY time the students actually get to chew gum in class!	
Learning Activities	<ol style="list-style-type: none"> 1. DO NOW – Identify the following as either QUALITATIVE (QT) or QUANTITATIVE (QN) observations. 2. Students will read aloud notes on making inferences. Emphasis will be placed on making “reasonable” and “unreasonable” inferences. 3. Students will complete independent work on inferences using diagrams of various fossils and the impact the bone structure has on making inferences about their diet. 4. As a class, using the DO NOW activity, students will review the differences between qualitative and quantitative observations. 5. Students will complete the chewing gum lab. They will make observations on a piece of gum, before, during, and after chewing it. Measurement equipment and rulers will be provided to make quantitative observations. Qualitative observations will be made using their five senses. 	
Closure	<p>“An observation is strictly just using your five senses. You can not make any assumptions in science – otherwise you are making an inference.”</p> <p>Make sure all answers are complete and turn in the observational lab. Any quantitative observations should have labels and be calculated using the metric system. Lab is worth 50 points. ALL gum must be thrown away!</p>	
Homework	Skills Practice - Observing	
Assessment	Lab will be collected and graded. Special attention will be placed on the labeling of quantitative measures. Teacher will circulate to check for understanding of the operational definitions studied throughout the week.	

Name: _____ Week of: _____

Instructional Strategies/Lesson Sequence		
	FRIDAY - Unblocked	NOTES
Access Prior Knowledge (Assessing what students know)	A scientist hypothesizes that the more water a sunflower receives, the more seeds it will produce. Identify the MV,RV and three possible controls in this experiment.	<p>Anticipated Results/Actual Results</p> <ul style="list-style-type: none"> ▪ Need projector for Monday and Tuesday. Need to find interesting pictures for recall practice. ▪ Need bananas and almond slivers. ▪ Students were given this material last year, should be a review for them. ▪ Banana candle is always a hit. ▪ Students have been given Cornell Notes in other classes, will be interesting to see what they've picked up so far. ▪ Need to buy chewing gum for lab on Wed./Thurs.
Motivation (the hook)	The terms MANIPULATING VARIABLE and RESPONDING VARIABLE were introduced last year as part the 6 th grade "Introduction to Science" unit. Recognition of these concepts should prompt more verbal answers.	
Learning Activities	<ol style="list-style-type: none"> 1. DO NOW –See access prior knowledge. 2. After correcting the DO NOW and dialoging on variables, students will independently work on a Sponge Bob related worksheet. 3. Corrections will be made as a class. 	
Closure	Hint when graphing your results: MIX – manipulated/independent/x-axis DRY – dependent/responding/y-axis	
Homework	NONE	
Assessment	Teacher will circulate to answer questions and keep students on task. Both student volunteers and delegated students will be asked to respond to Sponge Bob questions.	

Administrator's Feedback: Name _____ **Date:** _____

Alignment: Curriculum and Instructional Plan is aligned with curriculum or NJCCCS if curriculum not designed using Understanding By Design as framework.

Rigor: Instruction focuses on discovering the concepts that lies at the heart of the curriculum.

Transfer: Students demonstrate the use of knowledge and skills in new situations

Assessments: Uses the Six Facets of Understanding to measures level of understanding as evidenced through open-ended prompts and challenges that promote the use of knowledge and skills in new, engaging and authentic ways.



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