

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

Week of:		Teacher/ Grade	7	Subject/ Period	SCIENCE
Theme:	Cells, Life Processes, and the Chemistry of Life				
Enduring Understandings					
<p>There are specific criteria that must be met in order for something to be considered alive. All living organisms have certain needs that must be met to continue living. All life must come from life. Single-celled organisms are not "primitive" compared to the more familiar, larger organisms. Cells are not "stuff"; they are the basic unit in which life processes occur.</p>					
Essential Questions					
<p>What constitutes life?</p> <p>What are the building blocks of life?</p> <p>Where does energy come from?</p>					

Objectives

Students will know...

Data is analyzed and discussed in terms of if it supports a hypothesis or not in a three part conclusion.

The conclusion consists of an analysis, interpret, and prediction paragraphs.

The six characteristics an organism must possess in order to be considered alive.

The four needs that must be sustained for living organisms to survive.

That spontaneous generation, the idea that life can come from something non-living, does not occur. It has taken hundreds of experiments and many years to prove that spontaneous generation is NOT a plausible idea.

Cells are the basic units of all living things.

Life arises from life.

The difference between a heterotroph and an autotroph.

The difference between a uni- and a multi-cellular organism.

The difference between something that is living, dead, and non-living.

Students will be able to...

Interpret data and use that data to write a three-paragraph conclusion.

Identify the six characteristics that must be met for something to be considered living.

Supply examples of organisms that are considered living, dead, and non-living.

Identify the four needs that must be met for a living organism to sustain life.

Take Cornell notes from the textbook.

Content Vocabulary

Scientific method, hypothesis, variable, manipulating, responding, independent, dependent, control, constant, line graph, x-axis, y-axis, slope, conclusion, analysis, interpret, predict, Organism, living, dead, nonliving, cell, unicellular, multicellular, carbohydrates, lipids, fats, nucleic acids, development, growth, stimulus, response, reproduce, spontaneous generation, controlled experiment, variable, autotroph, heterotroph, homeostasis

Resources/Materials

Life Science text book, teacher-made reproducibles,

Instructional Strategies/Lesson Sequence		
	MONDAY-B day	TUESDAY - A day
Access Prior Knowledge (Assessing what students know)	Having completed the VISCOSITY lab in class, what problems, if any, occurred when collecting your data? What other lab could be performed to test the viscosity of liquids? What other variable could you manipulate besides temperature? (Summary of what their eventual Prediction paragraph will be)	
Motivation (the hook)	Students will have the opportunity to ask any questions regarding the lab format and how to write a conclusion.	
Learning Activities	<ol style="list-style-type: none"> 1. DO NOW - See Access Prior Knowledge 2. The district lab format will be handed out to students. On one side, students will jot down notes on the expectations and requirements for each section. The other side will be kept blank and stay in their binder for the remainder of the school year. 3. Students will read and discuss Conclusion notes. The major points of each paragraph: Answer, Interpret, and Predict will be broken down and discussed in detail. 4. Students will be shown three examples of conclusions written on the same lab. They will have to rate them as "Excellent", "Good", or "Poor" and justify their answers using their notes. 5. If time allows, students will be given an opportunity to begin the rough drafts of their conclusions. 	
Closure	A large portion of your lab write-up grade will come from how well you write your conclusions and how well you can express analyze the data collected during the lab.	
Homework	Lab Conclusion (Rough Drafts need to be completed by Wed/Thurs if you want it corrected by ME!)	
Assessment	Students will assess the three examples of conclusions. Teacher will listen for reasonable and logical explanations as to the given rating.	

Instructional Strategies/Lesson Sequence		
	WEDNESDAY - B day	THURSDAY - A day
Access Prior Knowledge (Assessing what students know)	Define and give examples of what it means to be LIVING, NON-LIVING, and DEAD.	
Motivation (the hook)	Students can turn in lab conclusions to be edited and commented on.	
Learning Activities	<ol style="list-style-type: none"> 1. DO NOW - See Access Prior Knowledge 2. Students will be handed the rubric for the grading of the Viscosity Lab. The teacher will explain how the lab will be graded. The rubric provides a checklist for students to ensure that they have included all the components of the lab. 3. Students will be shown a variety of pictures of living, dead, and nonliving things. They will be asked to place the photos into what they believe to be their appropriate classification. Students will NOT be guided or corrected at this point. This is a pre-assessment demonstration to be continued on Friday. 4. In continuation of the "What Is Life" theme, the teacher will set up a grass/mixture and students will make observations of any signs of life seen in the container. Teacher will place a drop of water from the bottom, middle, and top on a slide and examine it under the microscope. A microscope camera will be utilized in this demonstration. Students will make qualitative observations on what they see in the field of view. The mixture will be visited on at LEAST two more occasions over the next week. 5. Students will begin Cornell Notes on "what is Life?" pages 18-25 in the textbook. The Cornell Notes are guided in that the left hand side (the questions) is already completed for them. 	
Closure	Don't procrastinate with your lab report. Do a few sections each night. By now you should have completed your Observations section and a rough draft of your conclusion.	
Homework	Complete Cornell Notes Complete Sections I - III of the lab Lab Due date CHANGED to Monday! (your welcome!)	

Assessment	Class will follow up with the demo from the board. After having completed their class notes, students will re-assess which category they placed the picture in. The grass/water mixture will be revisited as well, observations will be done on Friday and Monday. Students will use Cornell Notes to study for a future test or quiz.
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Instructional Strategies/Lesson Sequence		
	FRIDAY	NOTES
Access Prior Knowledge (Assessing what students know)	Using your notes, write the six characteristics of life.	Anticipated Results/Actual Results <ul style="list-style-type: none"> ▪ Need 24 pictures for demo. ▪ Make sure microscope camera works. ▪ Any students who turn labs in early for editing will need to get them back within the day.
Motivation (the hook)	Students will revisit the grass/water mixture and may be surprised to see a change.	
Learning Activities	<ol style="list-style-type: none"> 1. DO NOW - See Access Prior Knowledge. 2. The class will revisit the grass/water mixture and examine three drops through the microscope camera. Students will make qualitative observations. 3. Class will discuss the previous night's notes with the use of a teacher-made power point presentation. Topics will include characteristics of life and spontaneous generation. Power point to conclude on Monday. 4. Class will discuss the pictures and the categories they were placed in. Students will be given the opportunity to move the picture based on the characteristics of life they studied the previous night. 	
Closure	Remember there is a 10 point deduction for every day the lab comes in late.	
Homework	Lab report due Monday	
Assessment	Students will self-assess the categories they placed the objects in. Students will use the Cornell notes and power point presentation to study from for a future test or quiz.	

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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