

SCIENCE LEARNING PLAN

Name:

Topic of lesson:	Atmosphere	Subject Area:	Science
Grade level:	Grade 7	Unit:	Earth and Space
Big Idea:	Survival	Essential Questions:	How does the atmosphere affect the living world?
Understandings:	Explanation, Interpretation	Relevance:	People use the atmosphere to do their daily activities but we rarely think of the consequences humans have on the atmosphere.
Introduction: Review: Students should have covered topics on the lithosphere and the hydrosphere. The teacher would ask the students what they remember from the <u>two</u> . Video: Show students a video of a skydiver diving without a parachute. This will hook students to want to learn about the <u>atmosphere</u> . Journal Entry: Students will then be asked to write 0.5-1 pages on the following questions: "What do you know about the atmosphere? How do humans affect the atmosphere? How does the atmosphere affect <u>humans</u> ?" (Eliciting student's prior knowledge in essay format) Some misconceptions might be that students don't think there are layers, most of the atmosphere is made out of oxygen and that there is an equal distribution of air from the bottom to outer space. The teacher will then explain the learning objectives: -Understand what makes up the atmosphere -Locate the different layers of the atmosphere and determine their composition -Explain how humans have affected the atmosphere -Explain how the atmosphere affects humans Development: Paper Strip activity: Students will be told that there are 4 layers of the atmosphere. They will then predict the length of the atmosphere and how thick each part is. They will be given a 1-meter strip of paper and draw points of the beginning and end of each layer. The students will then use the knowledge that they've learned to draw out a proper model in the end. Jigsaw activity: (Students will learn the content of lesson to be able to make critical judgements) Expert groups: The class will be divided into 5 groups:		Resources Required: Handouts, computers, paper strips, scissors QEP Subject Area Competencies Competency 2- Makes the most of his/her knowledge of science and technology: Students are eliciting their prior knowledge, learning new material and interpreting what this means Students will know (learning objectives): - <u>the parts and functions of the atmosphere</u> - <u>the different layers of the atmosphere</u> , their composition <u>and where to find them on a diagram</u> - <u>the human impact on the atmosphere</u> - <u>the atmosphere's effect humans</u> Students will understand (learning objectives): -To work in groups and collaborate -To develop their research skills -To uses scientific information to draw conclusions Cross Curricular Competencies: Competency 1 - Uses information: students will need to use the information that they've gathered to create their comic strip Competency 4 - Uses creativity: Students will need to creatively think how to create their comic strip Competency 8 - Cooperates with others: Students will need to work together to get all the information that they need Broad Areas of Learning: Environmental Awareness and Consumer	

Comment [LJS1]: Explain these more specifically in relation to the learning in THIS lesson. Just listing it does not demonstrate that you understand what they are and how to address them effectively

Comment [LJS2]: And fill in any knowledge gaps. Connect this information to the intended learning for today.

Comment [LJS3]: Why? What do you want them to understand about this video?

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Comment [LJS4]: An example will help just in case they don't recall enough information. You might also give them some websites or resources for them to refer to, to help them articulate their ideas.

Deleted: Locate

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Comment [LJS7]: You aren't actively teaching these so you are expecting them to understand processes as well as their value without teaching those processes. They should also be more explicitly related to the understandings you listed above

Comment [LJS5]: Your CT will want to know the actual content that stems from these understandings.

Comment [LJS6]: How will you form the groups. Have a concrete plan otherwise you could potentially waste time.

² Based on a modified version of Understanding By Design (UBD)

<p>1) Troposphere 2) Stratosphere 3) Mesosphere 4) Thermosphere 5) Gases</p> <p>Students in the first 4 groups will need to answer the following questions:</p> <ol style="list-style-type: none"> 1) How thick is this layer? 2) What is the temperature range in this layer? 3) What are the human influences? 4) What percentage of air is present in this layer? 5) Between which layers is it located? 6) Is there anything special about this layer? <p>Group 5:</p> <ol style="list-style-type: none"> 1) What are the 4 main gases present in the atmosphere? 2) What is their chemical formula? 3) What percentage is present in the atmosphere? 4) What uses these gases? 5) Is there anything special in these about these gases? 6) Are there any other gases in the air? <p>During the group work, the teacher should be walking around to ask if students have any question and to make sure that students are doing their work.</p> <p>Once students have finished the teacher will check the work for completion. They will then be given an answer sheet so that students can double-check their work.</p> <p>Once all groups have finished checking their work, the students will then be split into their jigsaw groups and then discuss what they have found.</p> <p>Individual activity: Students will be given a list of human activities that are involved with the atmosphere (Satellites, airplanes, windmills, etc.) and they will be asked to either make an illustrated poem, a comic strip or an illustrated story on one of these. The main questions that students will be asked will be the same questions as their initial journal questions: How do humans affect the atmosphere? How does the atmosphere affect humans? Students will need to use key words (atmosphere, oxygen, gases, etc.) to show their understanding (This activity makes the most of their knowledge and they need to interpret what they have learned to create the comic strip)</p> <p>Conclusion: Students will make a new 1-m strip of the thickness of the different layers to compare their predictions to their actual findings. They will write a journal entry on what they have learned in the process. The teacher will review the main concepts that the students have learned (the layers, the composition and the co-existence of humans and the atmosphere) A test will be given to see how much students learned. They should be able to discuss each layer of the atmosphere, the gases and write a short response to human influence on the atmosphere.</p>	<p>Rights and Responsibilities: Students learn about the atmosphere and how humans are tied to it</p> <p>Differentiated Instruction: Using a variety of activities, individual, group work, hands-on (comic strip and layers on the strip) students will be able to work to their strengths</p> <p>Further considerations: The amount of time for this lesson may vary due to student motivation and speed. Some groups might finish faster than others so some extra work should be kept on the side.</p> <p>FORMATIVE - Assessment FOR learning: The teacher will be walking around during the group work. In addition, the teacher will be checking the students work to see if they are on the right track during their information collection</p> <p>FORMATIVE - Assessment AS learning: Students will be writing in their journal to see how far along they have come and learned about the atmosphere</p> <p>SUMMATIVE - Assessment OF learning: The students will be graded on their comic strip to see how they can apply their learning. The final assessment will be a test for understanding by both fill in the blank and response type questions.</p>
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References

- Escriva, I., Ouellette, C., Pinonnault, D., & Zarif, M. (2008). *Eureka! Science and Technology Cycle 1* (Vol. A): Graficor
- Louviere, G. The Atmosphere. Accessed from [<http://teachertech.rice.edu/Participants/louviere/atmos.html>]

EDTL 601 Learning Plan INSTRUCTIONS¹

Topic of lesson:	What are you teaching during this class?	Subject Area:	What is the subject area (i.e. ELA, History, ERC, Math, Science, TESL etc.)
Grade level:	Grade 7 (Sec 1), Grade 8 (Sec 2) etc.	Unit:	What unit or LES is this lesson part of?
Big Idea:	What is the major concept or idea that this lesson is part of?	Essential Questions:	What provocative questions will foster inquiry, understanding, and transfer of learning?
Understandings:	What are the UBD understandings you intend to explicitly target? (Explanation, Interpretation, Application, Perspective, Empathy, Self-Knowledge)	Relevance:	How is this learning relevant to students? Why should they care?
<p>Organize this section to include: Introduction (explain learning objectives & planned learning) Development (content, key ideas, tasks or deliverables, activities) Conclusion (check for understanding, what next)</p> <p>Consider the following questions about the learning activities:</p> <p>Where are your students headed? Where have they been?</p> <p>How will you make sure the students know where they are going? How will you hook students at the beginning of the lesson?</p> <p>How will you organize and sequence the learning activities to optimize the engagement and achievement of ALL students</p> <p>What activities will help students experience and explore the essential question?</p> <p>How will you equip them with needed skills and knowledge?</p> <p>How will you cause students to reflect and rethink?</p> <p>How will you guide them in rehearsing, revising, and refining their work?</p> <p>How will you help students to exhibit and self-evaluate their growing skills, knowledge, and understanding?</p> <p>How will you tailor and otherwise personalize the learning plan to optimize the engagement and effectiveness of ALL students?</p>		Resources required: What resources, tools or material are required for learning to take place? (i.e. microscopes, poster paper, IPads etc.)	
		QEP Subject Area Competencies What relevant subject area competencies that will be explicitly addressed during this lesson?	
		Student will know (learning objectives): What key knowledge and skills will student acquire as a result of this unit? (e.g. vocabulary, terminology, definitions, key factual information, critical details, important events or people, sequence and timelines)	
		Students will understand (learning objectives): What should they eventually be able to do as a result of such knowledge and skill? (e.g. basic skills, communication skills, thinking skills, research, inquiry, investigation, study skills, interpersonal or group skills). Consider	
		Cross Curricular Competencies: How does the intended learning promote the intellectual, methodological, personal & social and communication related competencies?	
		Broad Areas of Learning: How does the intended learning promote Health and well-being, personal and career planning, Environmental Awareness and Consumer Rights and Responsibilities, Media Literacy, or Citizenship and Community Life?	
		Differentiated Instruction: How will you present information and content in different ways? How will you differentiate the ways that students can express what they know? How will you stimulate interest and motivation for learning?	
		Further considerations: How have you incorporated multiliteracies, learning styles, higher order thinking, technology, creativity?	
		FORMATIVE - Assessment FOR learning: How will you use assessment to promote learning? How will you	

¹ ¹ Based on a modified version of Understanding By Design (UBD)

	<i>show students their strengths and suggests how they can develop further?</i>
	FORMATIVE - Assessment AS learning: <i>What opportunities will you provide for reflection and self-assessment to help students develop, practise, and become comfortable with critical analysis of their own learning?</i>
	SUMMATIVE - Assessment OF learning: <i>What tools and task will you use to provide evidence of achievement for reporting</i>