Lesson Plan Template

Instructions: This lesson plan template provides a space for you to plan lessons around the Education Connections model of Sheltered Instruction (SI), which includes four strands—*define, modify, cultivate, apply*. (See page 4 of this document for more information on the four strands). Fill out the information about your lesson plan in the space provided in the left-hand column, *Lesson Information and Activities*. While you plan, list which strand(s) relates to this portion of your planning in the right-hand column, *SI Strand(s)*, along with any notes about how the strand can be implemented effectively in this lesson.

<table>
<tr><th>Lesson Information and Activities</th><th>SI Strand(s)</th></tr>
<tr><td>
Lesson Title: Cloud Whitening

Content Area: Science Grade Level(s): 9-10

Unit Description: Students will read an article about the development of a new technology that could be used to help fight global warming. Students will engage with the text, discuss their opinions, support their opinions with evidence from the text, and reflect on how their thinking has changed. This lesson is student-centered and scaffolded for English learners.

Length of lesson: Two 90- minute class periods Number of ELs: _____

<table>
<tr><td>Proficiency Levels</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>ELs (numbers and/or names)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Program Model: _____

Other relevant student information: This lesson is geared toward intermediate English learners._____
</td><td>Define</td></tr>
<tr><td>
<u>Standards and Objectives</u>
<table>
<tr><th></th><th>Language Objectives</th><th>English language proficiency standards</th></tr>
<tr><td>1</td><td>Students will be able to use a discussion guide to orally state their opinions.</td><td>TESOL Standard 1: English language learners communicate for social, intercultural, and instructional purposes within the school setting.
WIDA Standard 1: English language learners communicate for Social and Instructional purposes within the school setting</td></tr>
<tr><td>2</td><td>Students will be able to write a section-by-section summary of a scientific article.</td><td>TESOL Standard 4: English language learners communicate information, ideas, and concepts necessary for academic success in the area of science.
WIDA Standard 4: English language learners communicate information, ideas and concepts necessary for academic success in the content area of Science</td></tr>
</table>
</td><td>Define</td></tr>
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Lesson Information and Activities			SI Strand(s)
	Content Objectives	Content Standards	**Define**
1	Students will be able to identify and provide evidence from the text to support their opinions.	CCSS.ELA-LITERACY.RI.9-10.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	
2	Students will be able to evaluate the claims within the article.	CCSS.ELA-LITERACY.RI.9-10.8 Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.	

Lesson Information and Activities	SI Strand(s)
Incorporating all four language domains Identify how the language demands of the tasks are related to each language domain.	**Define**

	Written	Oral
Receptive	*Reading* Students will take turns reading an article.	*Listening* Students will listen to their peers read the article and to student responses to the article.
Productive	*Writing* Students will write summary sentences of each section, a $2 sentence, and describe how their thinking has changed.	*Speaking* Students will discuss their opinions and cite evidence from the text.

Key language for students (words and phrases, grammatical structures, sentence types, structure and amount of speech/text, organization of ideas, genre, etc.)

Modify

General academic language	Language specific to the content area
Agree, disagree, elder, humanity, profound, dilemma, suspended, whitening, brightening, controversial, intervening, energy-efficient, deliberate, manipulation, inevitable, ethics, prestigious, viability, corrosive, propelling, fog, injecting, ambitious, endeavor Phrases for introducing an opinion: I think/believe that . . . In my opinion . . . Based on my experience, I think . . . Phrases for acknowledging ideas: My idea is similar to/related to I agree with (a person) that . . . My idea builds upon ____'s idea. Phrases for disagreeing: I don't agree with you because . . . I got a different answer than you. I see it another way. Dependent Clauses: "More than 20 years later,.." "As of now…" "In order to know…" "Through a process of trial and error…" Active vs. Passive voice (most scientific articles use the active voice)	Geoengineering, global warming, carbon dioxide, methane, greenhouse gas emissions, ecosystem, atmospheric, stratosphere

Lesson Information and Activities	SI Strand(s)

Key characteristics of teacher talk (ways to make the content comprehensible for all students, ways to model key language, etc.).

Download and print the article at multiple reading levels. Group students according to reading level. Draw pictures to illustrate the main concepts of the article.

How the lesson will incorporate bilingualism/students' native languages as resources

Consider grouping students based on common home languages. Students may discuss the article using their home languages.

Materials and Texts

Name	Genre (e.g., narrative)	Level	Connection to Students (What will this mean to them? How can you make it even more meaningful?)
Can whitening the clouds stop global warming? Scientists want to try.	Nonfiction	9-10	Ask students to discuss what effect global warming may have on their lives in the future. In other words, discuss how will global warming directly affect students' lives in the future.

Supplementary Materials and Realia

Video: Science of geoengineering a 'Brighter Cloud'

Video: Scientists push for combating global warming with cloud brightening

Lesson Information and Activities	SI Strand(s)
Estimated Time: Two 90- minute class periods **Language Domains**: X Reading X Writing X Listening X Speaking **Grouping**: X Independent Work X Pair X Small Group X Whole class Reason for grouping: X First language ☐ English proficiency X Reading level ☐ Content understanding ☐ Interest ☐ Other: **Preview**: Connections to past learning or the larger unit sequence. 1. Put a line of tape down the middle of the classroom. Explain to students that you will read a statement and if they agree, they will stand on the line. 2. Stand the Line Activity: Tell students to form a line parallel to the tape on the floor. Read the statements below and tell students to step on to the line if the statement is true for them or if they agree. Tell them to stay where they are if they disagree or if the statement does not represent them. The teacher may choose to ask students to volunteer more information, based on their responses. a. I like to dance. b. I like to play video games. c. I have a small family. d. I have a large family. e. Earth is getting warmer. f. Global warming is causing problems for our environment. g. People have a responsibility to combat (fix) global warming. h. If technology can help to fix global warming, we should use it. i. Using technology to change the global climate is dangerous. **Presentation**: Primary activity steps associated with lesson implementation Differentiation, scaffolding, modifications, strategies employed, interaction activities, materials integrated that function to shelter language and content for the EL students. 1. Predetermine groups for the upcoming reading activity. Consider placing students into groups based on reading level, if providing the article at multiple reading levels. Divide students into groups of 3-4 students and provide them with the article that matches their reading level. If the teacher has only one version of the article, then divide students into groups with multiple reading levels in each group. Place students with common home languages in the same group. 2. Tell students that they will read an article about a group of scientists in California who are developing the technology to force clouds to produce more rain than they normally would. Draw a visual representation of this. For example, the teacher might draw clouds with a little rain. Then, draw people on the Earth with arrows up to the clouds (helping the clouds) and a lot of rain coming from the clouds. 3. Tell students to move into their groups and provide them with the article. Students will take turns reading the article aloud. When reading aloud, every student in the group must read. Each student can choose to read as much he/she would like. When one student stops, it is another student's	**Modify**

Lesson Information and Activities	SI Strand(s)
turn. Every group will read the 7 section of the text, including the introduction. Groups will discuss each section and work together to form one sentence to describe the main idea of each section. Each student will write the summary sentence on their own paper. Students will have 7 total sentences when they are finished reading the article. 4. Individually, students will answer the quiz questions to check their comprehension. 5. As a small group, students will compare answers. If there is disagreement, students must discuss and find evidence to support their answer until they come to agreement on the correct answer. Provide students with the following sentence starter to reference evidence from the text: "On p. _____, paragraph _____, it states _____. I think this means _____." 6. Tell the class that each group will write a $2 sentence to summarize the article. Each word they use is worth $0.10 and the sentence must add up to $2. 7. Give each group time to create their $2 sentences. 8. Display the $2 sentences and have students write the $2 sentences from the other groups. As a class, share and discuss the different $2 sentences. Discuss selection of words, compare and contrast sentences and why groups formed the sentences as they did. 9. In their small groups, students should discuss whether they agree or disagree with cloud whitening. Tell students that they must find evidence in the text to support their answer. Give groups time to discuss, using the Student Discussion Guide in Academic Language Function Toolkit (p.17). Student Discussion Guide in Academic Language Function Toolkit https://sweetwaterschools.instructure.com/courses/1080113/files/31344925 **Student Discussion Guide** *Ground Rules for Class Discussion* 1. Be prepared to share your idea when instructed to do so, first with your partner and next with the class. 2. No blurting (ever) or hand raising (until I ask for volunteers). 3. Use the assigned sentence starter to share your idea. 4. Use your public discussion voice to share your idea: two times slower and three times louder than conversation. 5. Listen attentively while classmates are sharing and jot down new ideas. 6. If your idea is like someone else's, acknowledge your classmate's contribution before sharing your idea. *Language Class Discussion Sentence Starters* Expressing an Opinion I think/believe that . . . In my opinion . . . Based on my experience, I think . . . Asking for Clarification What do you mean? Will you explain that again? I have a question about that. Acknowledging Ideas My idea is similar to/related to I agree with (a person) that . . . My idea builds upon ____'s idea. Reporting a Group's Idea We decided/agreed that . . . We concluded that . . . Our group sees it differently. We had a different approach.	**Apply**

Lesson Information and Activities	SI Strand(s)
Disagreeing I don't agree with you because . . . I got a different answer than you. I see it another way. Affirming That's an interesting idea. I hadn't thought of that. I see what you mean. **Assessment**: Activities for formative and summative assessment during and after primary lesson activities. How does assessment account for the language demands embedded in core content for ELs? 1. Stand the Line activity. Tell students that they will write three belief statements relating to the article. They will write one belief statement per notecard. Below are some possible sentence starters: a. I believe that the scientists' reasoning is strong or weak because… b. I believe that the scientists' claims are (strong or weak) because… c. I believe that cloud whitening is good for our Earth because… d. I believe that cloud whitening is dangerous for our Earth because… e. I believe that geoengineering is… f. I believe that the global climate is…because… 2. Students must submit the statements to the teacher. 3. Tell students to line up parallel to the taped line on the floor. 4. Tell students that when they hear a statement that they agree with, they should step to the line. 5. Read the students' statements. As students step to the line or remain where they are standing, use the statements as a means to elicit further discussion. For example, if a student did not move, ask them to explain why they disagree. 6. Wrap-up: Students should return to their seats. On the board, write the following sentence starter: a. I used to think…, but now I think… Students will complete this sentence and submit it to the teacher. (Click the following link for more background on this visible thinking routine).	
How are parents, families, and the community invited into or associated with the content, delivery, or extension of this lesson? Invite a guest speaker to talk about global warming and technologies that are currently in place to help to minimize global warming.	Cultivate

Education Connections' Four Strands of Sheltered Instruction

Sheltered Instruction is an approach that makes academic content, as well as language development, more accessible for EL students. The Education Connections activities are based on ***Four Strands*** of Sheltered Instruction. They are: Define, Modify, Cultivate, Apply.

Define

- Develop, define, refine, communicate, and assess *content objectives* for every lesson
- Develop, define, refine, communicate, and assess *language objectives* for every lesson
- Ensure objectives derive from, and are aligned with, English language proficiency (ELP), as well as content standards

Modify

- Differentiate instruction through lesson adaptation and instructional modifications
- Scaffold instruction in response to students' individualized language and content learning needs
- Identify the language demands and domains embedded in lessons and explicitly address language use and needs for both teaching and learning

Cultivate

- Explicitly identify and acknowledge the cultural competence, human capital, knowledge, experiences, and resources students bring to the classroom
- Invite parental and/or familial involvement in the school and classroom and make connections that extend beyond the core curriculum
- Support native language maintenance, additive bilingualism, and biliteracy development

Apply

- Directly promote language use through interaction with peers, teachers, as well as the core content
- Encourage and facilitate language use in both English, as well as students' home languages
- Develop and implement activities that require use of all four language domains

