**Lesson Plan Template**

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| **Name:** | **409**  |  | **Course:** | Earth Science |  | **Grade:** | 8 |
| **Unit:** | Weather and Climate |
| **Big Idea (Key concept):** | The atmosphere is composed of layers. |
| **Literacy Strategy(s):** | Small group discussion, creative/descriptive writing. |
| **Lesson:** | A Trip Through the Atmosphere |  | **Date Taught:** | 1/31/2010 |
| **Learning Objective(s):** |
|  |  Students will be able to | Name the four main layers of the atmosphere. |
|  | Students will be able to | Describe the characteristics of each layer of the atmosphere. |
| **Idaho Standards (or National Standards if no Idaho Standards exist):** |
| Goal 4.1, Objective 3 Show how interactions among the solid earth, oceans, atmosphere, and organisms have changed the earth system over time. |

**Lesson in Context:**

 Students are learning about weather and climate. To do so, we have begun learning about the composition of the Earth’s atmosphere. Students have investigated what the air around them is composed of and properties of air (such as mass, density and pressure).

**Instructional Materials, Resources:**

Students will need their textbooks, copies of the Layers of the Atmosphere sort page and copies of the “Trip Through the Atmosphere” cartoon template page.

**Procedures:**

 Students will enter the classroom and write the answer to the “question of the day” topic in their notebooks. “What is the atmosphere? What do you know about it?”

* **Engage/Introduction:** *(approximate time: 5-10 min )*
* We will discuss the question of the day. We will create a list of ideas and phrases on the board that relate to what students already know about the atmosphere. Hopefully, we can work around to the atmosphere being composed of layers and what they know about the layers.
* **Explore/Learning Activities:** *(approximate time: 30 min (1st activity) /60 min (2nd activity) )*

 1st Activity - Students will be given a sorting/classifying activity. They will have cards with the names of the layers of the atmosphere and characteristics of each layer in an envelope. Working in pairs, they will try to arrange the layers of the atmosphere in correct order and then sort the characteristics with each layer. They will try to do this using discussion with their partner only. When they think they have it right, they will check their book and correct their mistakes using book information. When they think they now have it absolutely correct, they will check the key on my desk.

 2nd Activity - After students have completed the first activity, they will get the “Trip Through the Atmosphere” cartoon template. Referring to the sorting activity on their desk, they will be asked to imagine they are taking a trip in a balloon up through the layers. They will create a 12-frame cartoon description of their trip through the atmosphere with one picture frame and one description frame for each layer. They will be asked to use complete sentences, complete ideas and base their descriptions on the factual characteristics of each layer.

* **Explanation/Closure:** *(approximate time: 5-10 min )*
* Explain how you will guide students to share what they have learned and connect their learning to key concepts.

Students will be asked to refer back to their answer to the question of the day (from the previous day now) and add new knowledge or understanding to it. We will then discuss as a class what their new understandings are and generate a new list on the board.**Elements of effective instruction:** (Describe how the lesson addresses each of the following. If not applicable, explain.)

1. Describe how the lesson fosters intrinsic motivation to learn.

Students have the opportunity to work together to problem solve. Then they have the opportunity to be creative and write from an imaginative standpoint about a scientific topic.

1. Describe how the lesson elicits students’ prior knowledge.

We elicit prior knowledge by discussing what they already know about the atmosphere.

1. Describe how the lesson intellectually engages the students in making meaning of the targeted math/science content.

At the end of the lesson, we go back and connect what they already knew to the new knowledge they should have gained from the activities.

1. Describe how students:
* *Science*: Use evidence to support and/or critique claims.
* *Math*: Explain and justify their reasoning.

In doing the classification sort, they will be asked to discuss with their partner what order they think the cards go in and why they think they go in that order.

1. Describe how the students engage in making sense of the material covered in the lesson.

Using whole class and small group discussion, they need to think about and support their ideas about the Earth’s atmosphere.

**Student Work:**

Include samples of student work from the lesson (include and clearly label examples of high, medium, and low quality). *Remove student names before submitting.*

**Reflection:**

Complete the Lesson Reflection Form on the following page. Spend time to include details of how the strategy worked and what you may have done differently. This is the portion which will most help your colleagues in implementing their own version of your lesson.**LIMSST Project Literacy Lesson Reflection Form**

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| --- | --- | --- | --- | --- |
| **Name:** | **409**  |  | **Date lesson was taught:** | **1/31/2010** |
| **Lesson Title/Topic Area(s):** |
|  |

**Literacy Emphasis:**

(Please discuss the literacy strategy(s) you embedded in this lesson. How do the strategies support **student** thinking and meaning making? Be specific and use as much detail as possible.)

Small group discussion, claims and justification in the parts of the atmosphere sort. Students had to try to put the layers of the atmosphere in order and then correctly match the characteristics with the layer, working in groups and explain why things might go where they did. This often applied using word prefixes to try to guess characteristics of the layer.

Then they had a graphic, creative writing activity with the cartoon where they had to describe what a trip through the layers of the atmosphere might look like.

**Student Response to the Lesson:**

(Describe the nature of student engagement in the math/science content presented in the lesson. How effective was the strategy at supporting student reasoning? Describe evidence that the students were making sense of the content presented.)

All levels of students were very engaged and worked through the lesson well. As I went around the room and questioned students about their thinking, they had many logical responses to the sorting activity. They also seemed to enjoy the cartoon, most of which supported good detail about the qualities of the layers of the atmosphere.

**Lesson Reflection:**

(What worked well with this lesson? What challenges did you encounter in this lesson? How would you change certain aspects of the lesson or the questions that you asked? How does this influence future lesson planning?)

This lesson went well. I would use it again. There was a suggestion made that after students completed their sort as pairs, they switch pairs across the table and justify, explain and discuss with a new partner. This would be a good idea.

**Relationship to Previous Instruction:**

(Have you taught this lesson/topic prior to the LIMSST project? If so, how did your teaching of this lesson differ from what you taught before? How did students’ reactions to this lesson differ?)

I did not teach this topic before LIMSST.