MBU STUDENT

MBU ID

Student Impact Project Option 1

Middle Ed: Science 6

Pre/Post Assessment:

SCI-6

[redacted] **SOL 6.6, 18-19** [Exam ID 132G7S] Scan Number 3755

1 **Pollution from car exhaust, factories, and power plants contributes to global warming. Which gas found in pollution is the major cause for global warming?**

A Methane
B Carbon monoxide
C Radon
D Carbon dioxide

2 **Cirrus clouds are —**

F thin and feathery
G thunderstorm clouds
H low in the sky
J puffy and white

3 **What type of front brings cool, cold weather to an area?**

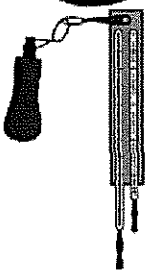
A cold front
B stationary front
C warm front
D occluded front

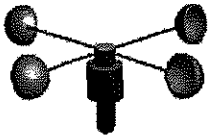
4 **As altitude increases, the air pressure —**

F increases
G stays the same
H decreases
J does not change

5 **Which weather instrument is used to measure air pressure?**

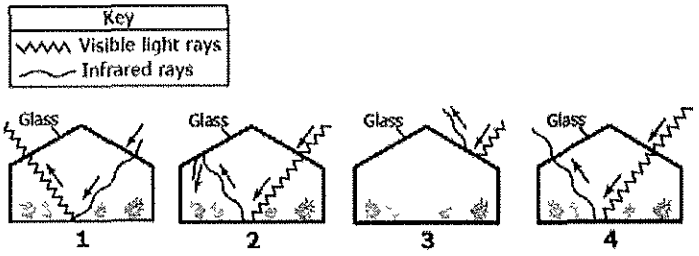
A 

B 

C 

D 

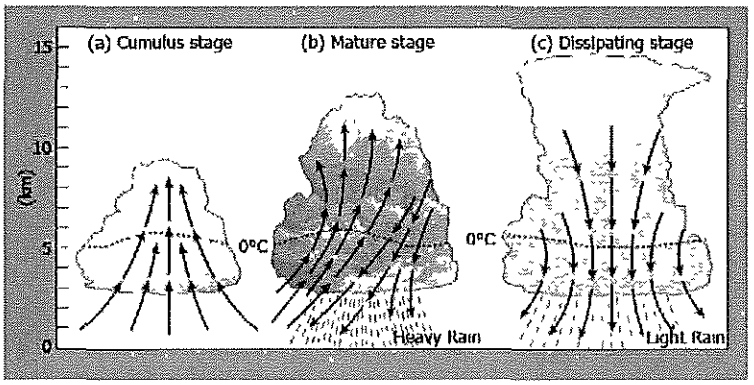
6



Which figure shows the correct process of the Greenhouse Effect?

F 3
G 1
H 4
J 2

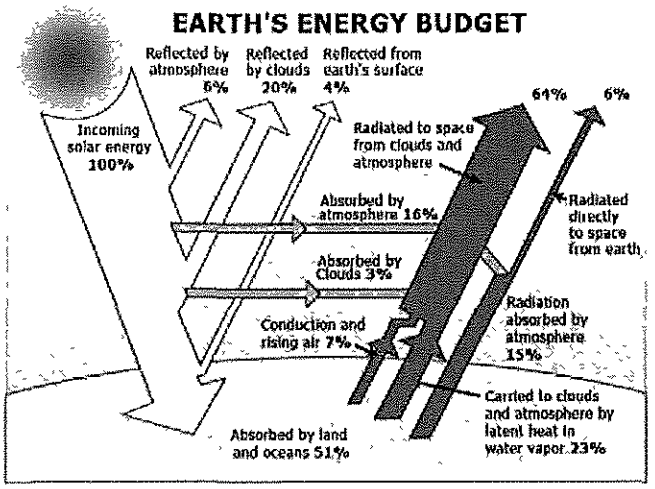
7



Thunderstorms form in what type of clouds?

A Stratus
B Cirrus
C Stratocumulus
D Cumulonimbus

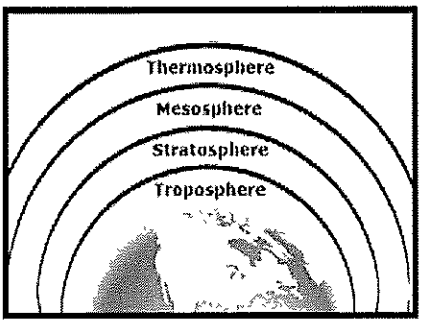
8



What percentage of the Earth's energy budget is reflected back into space?

F 6%
G 64%
H 51%
J 30%

9



In which layer of the atmosphere is the majority of water vapor found?

A Mesosphere
B Stratosphere
C Thermosphere
D Troposphere

10 **Which layer of the atmosphere contains the ozone layer?**

F Mesosphere
G Exosphere
H Stratosphere
J Ionosphere

Description of Pre- Assessment Data:

The pre/post-assessment (above) was created using PowerTest, with questions either straight off previous SOLs or created by the VDOE. It contained 10 multiple choice questions, each addressing a topic that fell under the SOLs we would be covering over the course of the unit (6.3 and 6.6) (See attachment). Students were asked to do their best and take their time to complete this assessment Those with testing accommodations, such as small groups or breaks had those accommodations for this pre-assessment. Those who struggle with online test taking, received the pre-assessment in paper form. Data from PowerTest is automatically calculated by the software and I printed out the results for each question. For the purposes of this project, Period 2 and 7 will be the main focus, although this was done for every class period To successfully pass this pre-test, students would need to complete 70% (or 7 questions) of the assessment correctly.

For Period 2, four students passed the assessment. Of the four, only one of these students is in the Talented and Gifted (TAG) Program. Only two questions, Question 3 6.6f and Question 7 6.3e of the assessment were answered by more than 70% of the class correctly. Question 3 pertains to SOL 6.6f which is basic information from weather maps and Question 7 pertains to 6.3e which focuses on hurricanes and thunderstorms The students in Period 2 got between 38-67% for seven other questions on this assessment (Questions 1 6.6d, 2 6.6e, 4 6.6b, 5 6.6b ,6 6.3c, 9 6.6a, 10 6 6c) These questions focused on composition of air, atmosphere and human effects Earth's energy budget (Question 8 6.3a), was answered wrong by most students in the classroom.

The results were similar with Period 7, but this class performed slightly better.There were five students that received a 70% or higher on this assessment. One of these students is TAG. More than 70% of the class correctly answered four questions (Questions 2 6.6e, 3 6.6f, 4 6.6b and 7 6.3e). This data shows that students performed well on questions with a focus on storms, weather conditions, weather maps and pressure, temperature and humidity 40-60% of students in this class period correctly answered questions 1 6.6d, 5 6.6b, 9 6.6a and 10 6.6c. These questions as above focused on composition of air, atmosphere and human effects For these topics I will spend time addressing topic from the day before with questioning, and bellringers Question 6 6.3c and Question 8 6.3a need a lot of emphasis as only 17% of the class answered these correctly. These fall under the topic of Earth's energy budget and wind so I will be sure to spend perhaps an extra day on this topic before moving on.

What I gathered from this data, for both periods is that, due to the high performance rate when it comes to weather and storms, we will focus on a Problem Based Learning (PBL) lesson instead of the general overview. This is a good area to use a PBL lesson as we have had a plethora of extreme storms over the last few years that the students can analyze at a higher level. This lesson will take place at the end of the unit, which will be a beneficial way to bring what they have learned over the entire unit and relate it back to relevant current events As these two classes are quite similar, their daily structure will be quite similar throughout the unit. My plan to address the variety of topics that they are not strong in is to teach using a variety of activities to allow for different learning styles and strengths, be it visuals (pictures and videos), written (guided notes), reading, demonstrations, and technology. For this unit, students will be grouped homogeneously by academic level and potential accommodation. Each day will begin with either a verbal/online bellringer or exit ticket to assess student learning from the day(s) prior. This will assist in guiding instruction as we continue through the unit Every two weeks, students will have a check-up quiz to assess understanding as this unit will be a longer unit, consisting of six weeks worth of instruction. Leveled texts and articles will be given to promote learning at the students' just right reading level throughout the unit. For those who are early finishers or are up for a challenge, a tic-tac-toe board that consists of higher thinking questions, will be provided.

Pre-Assessment Data:

2nd Period

Student	Q1 6.6d	Q2 6.6e	Q3 6.6f	Q4 6.6b	Q5 6.6b	Q6 6.3c	Q7 6.3e	Q8 6.3a	Q9 6.6a	Q10 6.6c	Pre-test %
Student 1				x		x	x	x	x	x	40
Student 2	x					x		x		x	50
Student 3		x			x	x	x	x	x		40
Student 4					x	x		x		x	60
Student 5	x	x				x	x	x			50
Student 6						x		x			80
Student 7	x		x	x				x	x	x	40
Student 8					x	x		x	x		60
Student 9	x				x	x		x			60
Student 10	x		x		x		x	x			50
Student 11	x	x				x		x			60
Student 12					x			x	x	x	60
Student 13	x	x			x	x		x			50
Student 14	x	x	x		x	x			x	x	30
Student 15	x	x		x				x			60
Student 16				x				x			80
Student 17	x			x							80
Student 18	x							x			80
Student 19				x	x	x		x	x	x	40
Student 20	x	x			x		x	x	x	x	30
Student 21	x	x			x	x	x	x	x	x	20
Student 22		x		x		x	x	x			50
Student 23										x	90
Student 24	x	x		x		x		x		x	40
% Correct	42	58	88	67	54	38	71	13	63	54	

42 58 67 54 38 13 63 54

7th Period

Student	Q1 6.6d	Q2 6.6e	Q3 6.6f	Q4 6.6b	Q5 6.6b	Q6 6.3c	Q7 6.3e	Q8 6.3a	Q9 6.6a	Q10 6.6c	Pre-test %
Student 1	x		x		x			x		x	50
Student 2											100
Student 3	x			x		x		x	x	x	40
Student 4				x	x	x	x	x	x		40
Student 5	x			x	x	x	x	x	x		30
Student 6	x	x	x		x	x	x	x	x	x	10
Student 7	x			x		x	x	x		x	40
Student 8						x				x	80
Student 9	x	x	x		x	x	x	x		x	20
Student 10	x			x	x	x		x	x	x	30
Student 11	x			x		x		x			60
Student 12						x		x			80
Student 13		x						x	x	x	60
Student 14	x	x		x	x	x		x	x	x	20
Student 15				x		x		x	x		60
Student 16		x	x			x		x	x	x	40
Student 17					x				x	x	70
Student 18	x	x	x		x	x	x	x		x	20
Student 19					x	x	x	x			60
Student 20					x	x		x	x	x	50
Student 21				x		x		x	x		60
Student 22	x			x		x		x			60
Student 23	x					x					80
Student 24	x					x		x	x	x	50
% Correct	46	75	79	93	63	17	71	17	46	42	

Summary of Unit:

Unit Title: Atmosphere & Weather
Grade: 6
Essential Understandings:

What SOL? Include it in this section.

- Earth receives only a very small portion of the sun's energy, yet this energy is responsible for powering the motion of the atmosphere, the oceans, and many processes at Earth's surface.
- Solar radiation is made up of different types of radiation (including infrared, visible light, and ultraviolet).
- Incoming solar radiation is in close balance with the energy that leaves the atmosphere, otherwise Earth would heat up or cool down. Excess carbon dioxide and other gases may disrupt this balance, creating a greenhouse effect.
- About one-third of the sun's incoming energy is reflected back out to space About one-half of the energy striking Earth is absorbed by Earth's surface.
- Earth's surface is heated unequally.
- When air or water is heated, the molecules move faster and farther apart, reducing their density and causing them to rise. Cooler air or water molecules move more slowly and are denser than warm air or water. Warm air or water rising coupled with cooler air or water descending forms a cyclic rising/falling pattern called convection
- Radiation and convection from Earth's surface transfer thermal energy. This energy powers the global circulation of the atmosphere and the oceans on our planet.
- As bodies of water (oceans, lakes, rivers, etc.) absorb thermal energy, the water evaporates causing the air to be warm and moist. Warm, moist air is less dense than cold, dry air, so it rises relative to colder, drier air. As warm, moist air rises, it gives off some thermal energy as the moisture condenses, forming clouds. Clouds are not gaseous water vapor, rather they are minute, condensed water particles.
- Some thunderstorms are formed where the land is strongly heated Hurricanes form over warm, tropical water and are fed by the energy of that water.
- Air is a mixture of gaseous elements and compounds These include nitrogen, oxygen, water, argon and carbon dioxide. Nitrogen makes up the largest proportion of air
- Air exerts pressure. Air pressure decreases as altitude increases
- Moisture in the air is called humidity.
- The atmosphere is made up of layers (troposphere, stratosphere, mesosphere, and thermosphere) that have distinct characteristics.
- Temperature decreases as altitude increases in the lowest layer of the atmosphere.
- Most of the air that makes up the atmosphere is found in the troposphere (the lowest layer). Virtually all weather takes place there.
- Forest fires and volcanic eruptions are two natural processes that affect Earth's atmosphere. Many gaseous compounds and particles are released into the atmosphere by human activity. All of the effects of these materials are not yet fully understood.
- The amounts of thermal energy and water vapor in the air and the pressure of the air largely determine what the weather conditions are.
- Clouds are important indicators of atmospheric conditions. Clouds are found at various levels within the troposphere. Three major types of clouds are cumulus, stratus, and cirrus.

- Ozone, a form of oxygen, can form near the surface when exhaust pollutants react with sunlight This pollutant can cause health problems. Naturally occurring ozone is also found in the upper atmosphere and helps to shield Earth from ultraviolet radiation.
- Maintaining good air quality is a crucial goal for modern society, and it is everyone's responsibility to work toward it.
- Weather maps show much useful information about descriptive air measurements, observations, and boundaries between air masses (fronts). The curved lines showing areas of equal air pressure and temperature are key features of weather maps. Weather maps are important for understanding and predicting the weather.

Essential Knowledge and Skills:

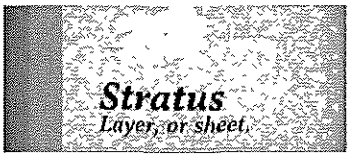
- comprehend and apply basic terminology related to solar energy, including wavelength; ultraviolet, visible, and infrared radiation; and reflection and absorption.
- analyze and interpret a chart or diagram showing Earth's energy budget.
- analyze, model, and explain the greenhouse effect in terms of the energy entering and leaving the atmosphere.
- design an investigation to determine the effect of sunlight on the heating of a surface
- analyze and explain how convection currents occur and how they distribute thermal energy in the atmosphere and oceans
- analyze the role of heating and cooling in the formation of clouds
- order the sequence of events that takes place in the formation of a cloud.
- describe the relationship between thermal energy and the formation of hurricanes and thunderstorms
- comprehend and apply basic terminology related to air and the atmosphere.
- identify the composition and physical characteristics of the atmosphere.
- analyze and interpret charts and graphs of the atmosphere in terms of temperature and pressure.
- measure and record air temperature, air pressure, and humidity, using appropriate units of measurement and tools.
- analyze and explain some of the effects that natural events and human activities may have on weather, atmosphere, and climate.
- evaluate their own roles in protecting air quality.
- design an investigation to relate temperature, barometric pressure, and humidity to changing weather conditions.
- compare and contrast cloud types and relate cloud types to weather conditions.
- compare and contrast types of precipitation.
- compare and contrast weather-related phenomena, including thunderstorms, tornadoes, hurricanes, and drought
- interpret basic weather maps and make forecasts based on the information presented.
- map the movement of cold and warm fronts and interpret their effects on observable weather conditions.

* **Objective:** The students will accurately use their skills and understanding of the Atmosphere and Weather Unit (6 3/6.6) to complete their unit test.
Process: This unit will take place over seven weeks starting on Monday, February 4th and ending on Thursday, March 21st. The structure of each week will be the following:
Week 1: Properties and composition of air, layers of the atmosphere
Week 2: Pressure and heat transfer
Week 3: Earth's energy budget and greenhouse effect

* objective - w/ ___ % accuracy, not "completion".

Week 4: Wind, humidity and clouds
Week 5: Air masses, fronts, thunderstorms, tornadoes
Week 6: Hurricanes, weather maps, PBL
Week 7: Review and test

Bellringer: Each day, students will come in quietly and complete their bellringer. In week 2, students will construct a homemade barometer and checking this and recording data daily will become part of their bellringer routine. Bellringers will also consist of either verbal questioning or online Google Classroom forms to assess prior learning and decide if remediation on past topics is necessary. The SOL and objective will be clearly stated on the board for each day On Mondays, students will be asked to record their homework in their planner. Each bellringer will be projected on a Google Slide and will contain a GIF that is relevant to the topic or that has a mindfulness breathing exercise.



Oh, hello new week! Let's do this! (03/04/2019)

1. Write homework in planner & leave open for signing
2. Record barometer data (page 36)
2. Answer Bellringer on Google Classroom
3 Open to page 43 in your folder

Name _____ Date _____

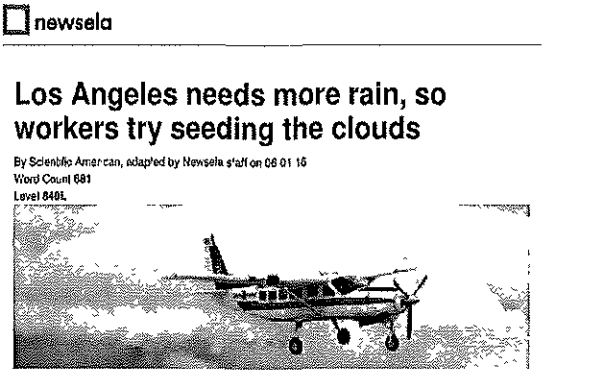
Heat Energy Tic-Tac-Toe

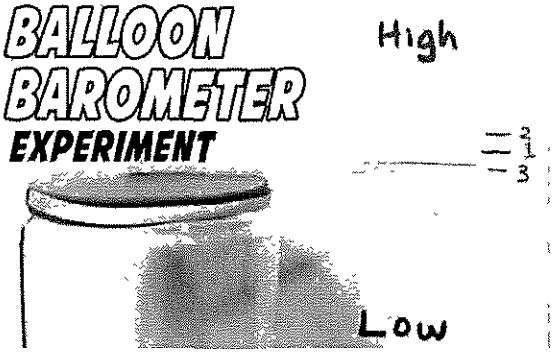
Directions Pick a row, column or diagonal of three activities to complete!

Heat Transfer Pictures Draw a before and after picture for each of the 3 types of heat transfer Conduction, Convection, and Radiation	**Insulation experiment** You can't decide what cooler to buy at the store Design and explain an experiment that you could perform to see which cooler is the best insulator	**Using a thermometer** Write an information paragraph explaining how to use a thermometer Be sure to include information about the difference between the customary and metric scales for temperature
Using a thermometer Write an information paragraph explaining how to use a thermometer Be sure to include information about the difference between the customary and metric scales for temperature	**Molecule R.A.F.T** Write a short story as if you were a molecule of water and you are explaining to your friends what it was like to be put into a freezer and then taken out and microwaved **Role** molecule **Audience** friends **Format** short story **Topic** Journey through different temperature	**Heat Transfer Pictures** Draw a before and after picture for each of the 3 types of heat transfer Conduction Convection, and Radiation
Insulation experiment You can't decide what cooler to buy at the store Design and explain an experiment that you could perform to see which cooler is the best insulator	**Heat Production Picture** Think about the ways heat can be produced (Burning, friction, mixing chemicals, and electricity) Draw one picture in which ALL of these types of heat production are taking place	**Insulator List** Make a list of as many types of insulators as you can think of, but be specific Don't just say air, plastic, and foam Think of specific items like a jacket

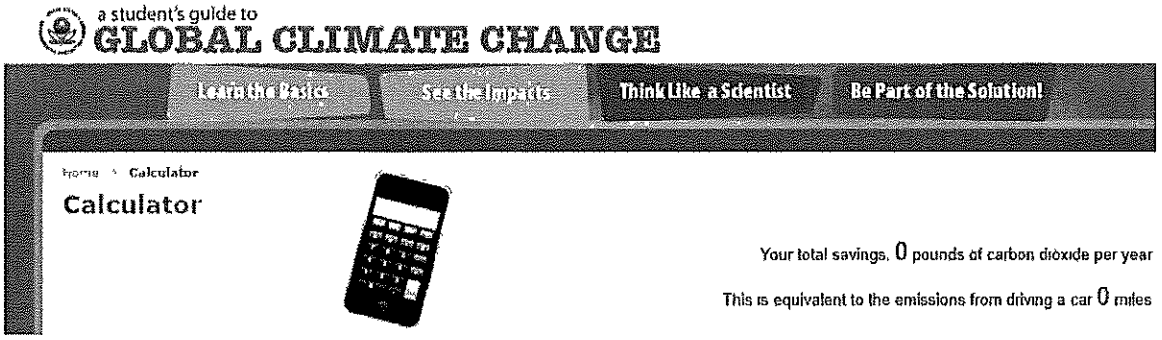
Instruction: Each lesson will incorporate a variety of learning styles including but not limited to demonstration, videos, writing activity (notes/handout), and reading activity. Students will either complete these items individually, as a pair, or as a group, depending on the day. BrainPop! and TedEd will be utilized for videos and related reading resources as they are leveled

For those who are **early finishers**, they will have a tic-tac-toe board that asks higher level thinking questions as well. Past lessons will be referred to when possible and higher thinking questions will be asked for higher level learners.





We will have two **labs** over the unit, one on composition of air and the other to build barometers. When the greenhouse effect lesson comes, we will make the lesson relevant by using the EPA Carbon Footprint Calculator



At the end of the unit we will have a **Problem Based Learning** project that will take place over a week. Students will create Google Slides using their knowledge on weather maps and storms This will help them with retaining the information that we have been teaching them for the unit

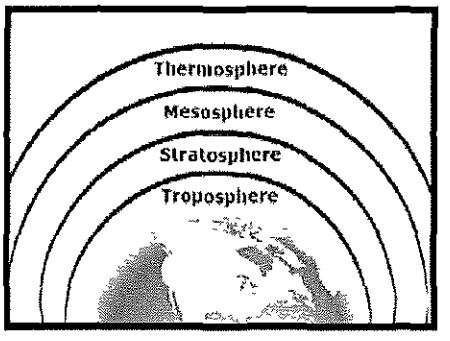
Additional Assessments (2 Mid-unit check-ups):

Atmosphere Checkup 2019

Your username will be recorded when you submit this form
* Required

1. What is your first and last name? *

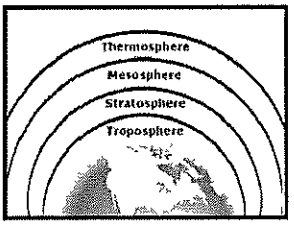
2. In which layer of the atmosphere is the majority of water vapor found? *



Mark only one oval

- ◯ Troposphere
- ◯ Stratosphere
- ◯ Mesosphere
- ◯ Thermosphere

3 Answer the following question: *



The ozone layer is comprised of oxygen elements, O_3, that protect living forms on Earth from ultraviolet radiation. The ozone layer is located within the –

Mark only one oval

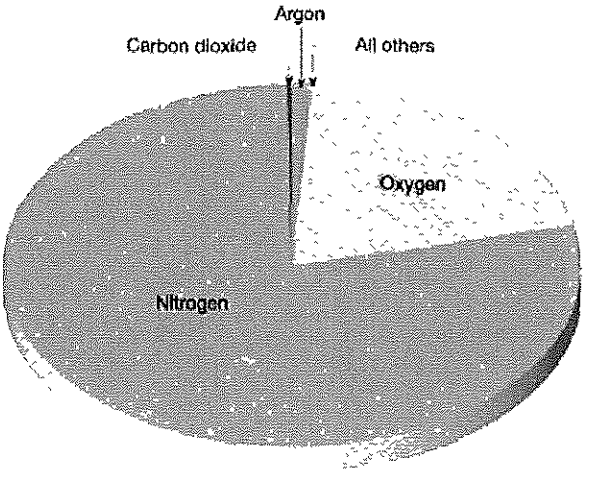
- ◯ troposphere
- ◯ stratosphere
- ◯ mesosphere
- ◯ thermosphere

4 As altitude increases, air pressure _____. *

Mark only one oval

- ◯ decreases
- ◯ stays the same
- ◯ increases

5 What are the 2 most abundant gases in the atmosphere?



Mark only one oval

- Oxygen and Argon
- Nitrogen and Carbon Dioxide
- Argon and Nitrogen
- Nitrogen and Oxygen

6 From Earth to Space, the main layers of the atmosphere are: *
Mark only one oval

- stratosphere, troposphere, ionosphere, thermosphere
- troposphere, thermosphere, stratosphere, exosphere
- troposphere, stratosphere, mesosphere, thermosphere
- stratosphere, exosphere, ionosphere, mesosphere

7 In what layer of the atmosphere do satellites orbit Earth? *
Mark only one oval

- Exosphere
- Stratosphere
- Ionosphere
- Mesosphere

8 **Which layer of the atmosphere protects us from meteors? ***
Mark only one oval

- ◯ exosphere
- ◯ stratosphere
- ◯ ionosphere
- ◯ mesosphere

9 **In what layer of the atmosphere does weather occur? ***
Mark only one oval

- ◯ exosphere
- ◯ troposphere
- ◯ mesosphere
- ◯ thermosphere

10. **The ozone layer protects us from: ***
Mark only one oval

- ◯ aliens
- ◯ meteors
- ◯ ultraviolet (UV) radiation
- ◯ none of these

11 **As altitude increases in the Troposphere, temperature: ***
Mark only one oval

- ◯ increases
- ◯ stays the same
- ◯ decreases

12 **What weather factor does this tool measure? ***

Mark only one oval

- ◯ temperature
- ◯ wind direction
- ◯ air pressure
- ◯ humidity

☐ Send me a copy of my responses

SCI-6

[redacted] Heat Transfer and Wind Quiz, 18-19

[Exam ID 0K3C3T] Scan Number 3821

1 **What is an example of convection?**

A Heat from a campfire
B Walking on hot sand
C Noodles moving in a heated pot
D Holding an ice cube in your hand

2 **The direct transfer of heat from one object to another through touching is called—**

F invection
G convection
H conduction
J radiation

3 **Which is an example of conduction?**

A Heat from a fire
B Drying boots over a hot air vent
C Bare feet on hot sand
D Heat from the sun

4 **The direct transfer of energy by electromagnetic waves is called—**

F conduction
G invection
H convection
J radiation

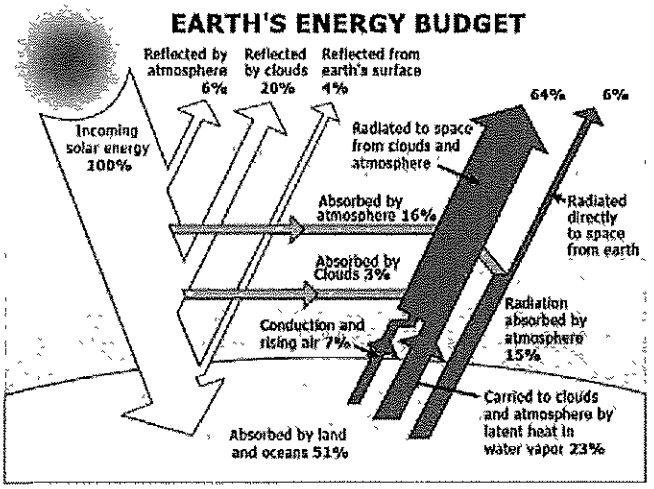
5 **Energy from the Sun travels to the Earth's surface through —**

A evaporation
B radiation
C convection
D conduction

6 **Sunburns are caused by —**

F visible light
G gamma rays
H infrared radiation
J ultraviolet radiation

7



What percentage of the Earth's energy budget is reflected back into space?

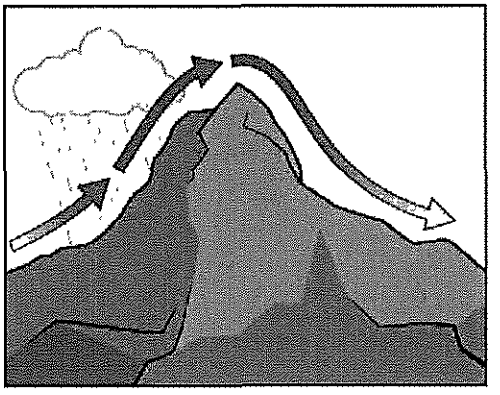
A 6%
B 64%
C 51%
D 30%

8 **The major steps in cloud formation are listed below. What is the correct order for these steps?**

1. **Air containing evaporated water vapor rises.**
2. **Expanding air cools at higher altitudes.**
3. **Water vapors condenses into tiny particles such as dust, smoke, or salt.**
4. **Water vapor evaporates from larger bodies of water such as lakes and oceans.**

F 1, 4, 2, 3
G 4, 1, 2, 3
H 2, 4, 3, 1
J 3, 4, 1, 2

9



As the air on the left side of the mountain rises, its temperature becomes —

A warmer
B extremely cold
C cooler
D unchanged

10 **Most of the energy that heats Earth's atmosphere is —**

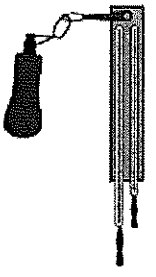
F infrared radiation
G visible light
H ultraviolet radiation
J gamma rays

11 **Which weather instrument is used to measure wind direction?**

A 

C 

B 

D 

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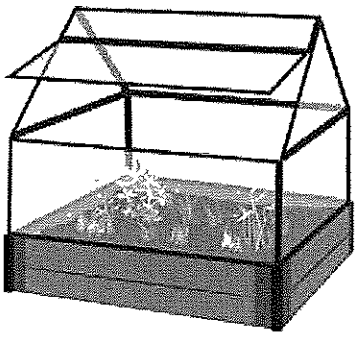


What process is being used to grow the plants in this diagram?

F Greenhouse effect
G Creation of soil
H Solar radiation
J Water cycle

13 **Which is an example of radiation?**

A Bare feet on hot sand
B A pan heated on a stove
C Drying boots over a hot air vent
D Heat from a fire

14 **The two most abundant gases in Earth's atmosphere are—**

F oxygen and hydrogen
G carbon dioxide and hydrogen
H nitrogen and oxygen
J carbon dioxide and oxygen

15 **The device that measures air pressure is —**

A a psychrometer
B a thermometer
C a barometer
D an anemometer

16 **Wind gets its energy from—**

F the ocean
G the moon
H the land
J the sun

17 **A wind coming from the west is called —**

A a west wind
B a north wind
C an east wind
D a south wind

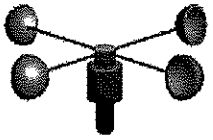
18 **Winds are named for —**

F their frequency
G the direction they come from
H the direction they blow to
J their speed

19 **Carbon dioxide trapping heat in the atmosphere is known as —**

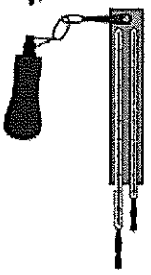
A smog
B the ozone layer
C pollution
D the greenhouse effect

20 **Which weather instrument is used to measure air pressure?**

F 

H 

G 

J 

***Data collected from these assessments will be found in the grade sheet**

Post- Assessment Data:

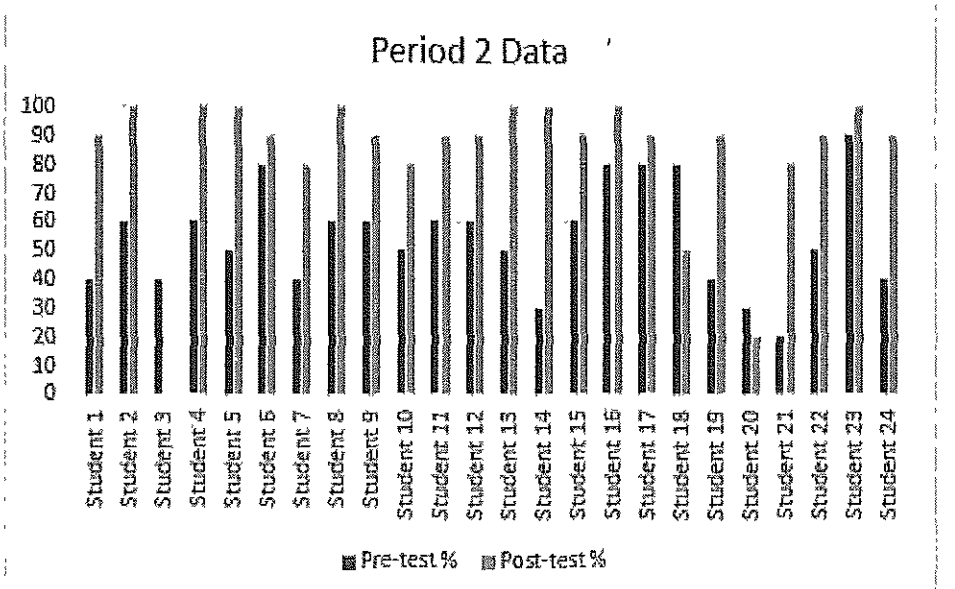
Period 2

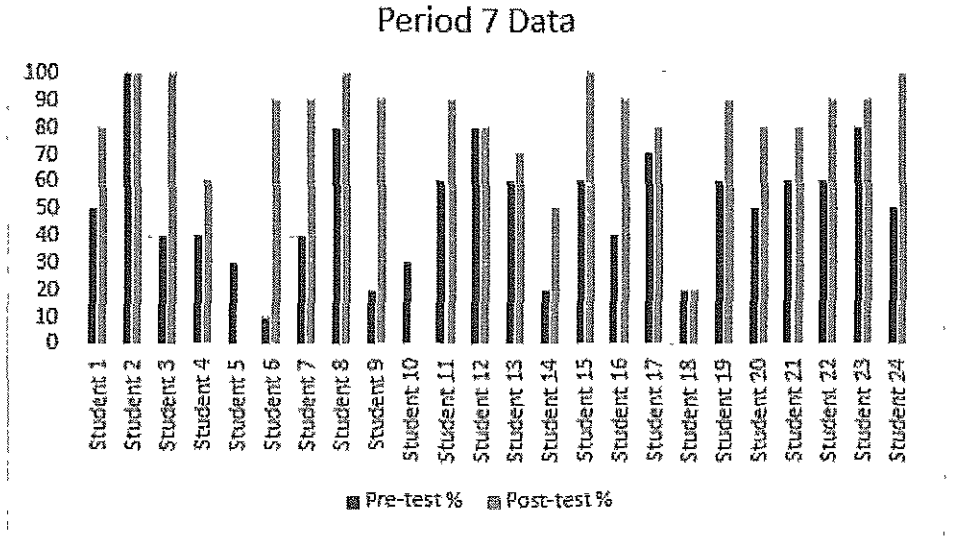
Student	Q1 6.6d	Q2 6.6e	Q3 6.6f	Q4 6.6b	Q5 6.6b	Q6 6.3c	Q7 6.3e	Q8 6.3a	Q9 6.6a	Q10 6.6c	Post-test %	Pre-test %	% up or down ans.	
Student 1						x					90	[illegible]	40	50
Student 2											100	[illegible]	80	40
Student 3											DNC	[illegible]	40	N/A
Student 4											100	[illegible]	60	40
Student 5											100	[illegible]	50	50
Student 6									x		90	[illegible]	80	10
Student 7						x		x			80	[illegible]	40	40
Student 8											100	[illegible]	60	40
Student 9										x	90	[illegible]	60	30
Student 10					x			x			80	[illegible]	50	30
Student 11						x					90	[illegible]	60	30
Student 12						x					90	[illegible]	60	30
Student 13											100	[illegible]	50	50
Student 14											100	[illegible]	30	70
Student 15	x										90	[illegible]	60	30
Student 16											100	80		20
Student 17										x	90	80		10
Student 18	x	x		x		x				x	50	80		-30
Student 19						x					90	[illegible]	40	50
Student 20	x	x	x		x		x	x	x	x	20	[illegible]		-10
Student 21								x		x	80	[illegible]	20	60
Student 22						x					90	[illegible]	50	40
Student 23											100	90		10
Student 24		x									90	[illegible]	40	50
% Correct	88	88	99	99	92	71	99	83	92	79	92% pass	13% pass		

Period 7

Student	Q1 6.6d	Q2 6.6e	Q3 6.6f	Q4 6.6b	Q5 6.6b	Q6 6.3c	Q7 6.3e	Q8 6.3a	Q9 6.6a	Q10 6.6c	Post-test %	Pre-test %	% up or down ans.
Student 1			x			x					80	[redacted]	50 30
Student 2											100	100	0
Student 3											100	[redacted]	40 60
Student 4			x	x		x		x		60	[redacted]	[redacted]	40 20
Student 5											DNC	[redacted]	N/A 30
Student 6								x			90	[redacted]	10 80
Student 7								x			90	[redacted]	40 50
Student 8											100	80	20
Student 9								x			90	[redacted]	20 70
Student 10											DNC	[redacted]	N/A 30
Student 11								x			90	[redacted]	60 30
Student 12						x		x			80	80	0
Student 13					x	x		x			70	[redacted]	60 10
Student 14				x		x	x		x	50	[redacted]	[redacted]	20 30
Student 15											100	[redacted]	60 40
Student 16								x			90	[redacted]	40 50
Student 17			x					x			80	70	10
Student 18		x	x	x		x	x	x	x	x 20	[redacted]	[redacted]	20 0
Student 19								x			90	[redacted]	60 30
Student 20								x		x	80	[redacted]	50 40
Student 21			x					x			80	[redacted]	60 20
Student 22								x			90	[redacted]	60 30
Student 23								x			90	80	10
Student 24											100	[redacted]	50 50
% Correct	100	96	79	88	96	75	92	[redacted] 38	92	92	80% pass	21% pass	

Data Comparison:





Post-test Data Analysis:

I was a bit nervous thinking about what the data for this unit would look like The atmosphere and weather unit consisted of two SOL topics 6 3 and 6 6 and took a little more than six weeks to complete. We also had many days that were shortened or cancelled due to bad weather over the Winter months. I was unsure on how a unit of that length could affect the students' ability to retain the plethora of information covered. Although this course was taught in five class periods, I chose period two and period seven to dig deeper into the data, as I wanted to compare scores across class periods before and after lunch/exploratory classes

The post-test for this unit was exactly the same as the pre-test found on Page 1 and consisted of ten multiple choice questions administered on the PowerSchool software. I was pleasantly surprised by the results of our students Out of forty-eight students in the data above, forty-six of them improved upon their pre-test scores, most of them with significant improvements. Looking at the students who had not succeeded, I feel this was due to a high rate of absences from school either due to disciplinary actions or illnesses. I believe the success rate of the rest of the students came from a variety of methods for questioning, including but not limited to verbal questioning, Google Form bellringers and exit tickets, two mid-unit check-ups, homeworks, relevant labs, a problem based learning project which included higher level thinking and also a new review game (Review Connect 4) that the students enjoyed. Each student worked very hard to complete their post-test and their unit test, which had a class average above a 75% as well.

In period 2, our pre-test resulted in only 13% of students passing We had 92% of students in the class period passing the post-test. Out of the ten questions, all ten were answered correctly by at least 70% of our students. This shows me that the lessons were engaging and relevant enough for the students to retain the information necessary for passing. In period 7, originally we had 21% of students passing the pre-test. 80% of students passed the post-test. Although this does show growth, there is not as much growth as period 2. Why do I think this is so? I believe that after lunch and exploratory classes including physical education, students are no longer focused The focus shifts from learning mode to watching the clock as we tick forward towards the end of the day Even with keeping lessons moving, and including relevant lessons and conversation, it is very challenging to reach every student at that time of the day. For example, if you notice the post-test data for period 7, a majority of students did not correctly answer question 8 In fact, only 37% of the class answered this question correctly. The image for this question was in their folder, showed to them in class multiple times, was on a check-up and was included in their review game. Still, they were unable to answer this correctly and I believe that has a lot to do with their focus I would be interested to see how the data would be different if we had a rotating schedule, similar to that of other schools in our area

Overall, I am very pleased with the results of my students I think it is worth saying that 27% of the class walked away from the post-test with 100% and 38% had a 90%. They demonstrated their ability to grow and that is what I personally look for when it comes to data analysis. Moving on to the space unit, 6.8, I would say that a combination of all of the methods consistently used over this unit will greatly supplement learning. Attached, you will also find the data collected for the other methods for gauging information retained. These are scores for two check-ups, bellringers, and a homework and you will also see the unit test scores as well. I kept track of these scores throughout the unit to know which items I would likely have to have questioning on in the future. This data came in handy throughout the unit.

For those students with significant absences from school due to disciplinary action or other reasons, I would like to see a system in my future classroom where students can more easily see what they are missing in the classroom Although missing work is listed online on Infinite Campus, I think it would be beneficial to have a visual within the room for students to prominently see Another way that I thought of after completing this unit is that it would be neat to have students record their pre-test data and post-test data and make their own graph for each unit I believe that would show them how they are doing and promote growth.

Unit Grade Book for Period 2 and 7:

ol [redacted]

I AM **Blank Spreadsheet** Course 02) 410560-2 Science 6

Teacher [redacted]

	Pre test (0-100)	Bell ringer 1 (0-2)	Bell ringer 2 (0-2)	Exit ticket (0-10)	Bell ringer 3 (0-3)	Homework (0-100)	check up 1 (0-11)	Bell ringer 4 (0-5)	Bell ringer 5 (0-3)	Bell ringer 6 (0-3)	check up 2 (0-20)	Bellringer 7 (0-3)	Bell ringer 8 (0-4)	Post test (0-100)	Unit test (0-100)
	40	2	0	10	3	100	11	4	2	3	16	3	2	90	97
	60	2	4	7	3	100	11	4	3	3	15	2	4	100	91
	40	2	0	8	3	100	9	4	3	2	19	3	4	DNC	DNC
	60	2	0	7	2	0	10	3	3	3	14	2	3	100	84
	50	2	0	5	2	100	11	4	2	3	11	1	4	100	94
	80	1	0	9	3	100	9	4	3	1	17	2	4	90	94
	40	DNC	2	7	3	0	5	4	3	2	14	1	1	80	81
	60	2	0	8	3	100	9	4	3	3	15	3	4	100	94
	60	2	0	9	3	100	11	4	3	3	19	DNC	4	90	94
	50	2	0	5	1	0	10	3	3	2	13	1	4	80	66
	60	1	0	9	3	100	11	4	3	3	17	3	4	90	91
	60	2	0	7	3	100	11	4	3	3	18	2	4	90	91
	50	2	0	10	3	100	10	4	3	3	16	2	4	100	97
	30	2	0	9	3	100	9	4	3	3	15	3	4	100	72
	60	2	0	6	3	100	10	3	3	3	15	DNC	4	90	84
	80	2	0	9	3	100	11	DNC	3	3	20	3	4	100	97
	80	2	0	9	2	100	11	4	3	3	16	3	4	90	91
	80	1	0	8	2	25	9	4	2	0	15	2	4	50	81
	40	2	0	7	3	100	11	4	3	3	19	3	4	90	94
	30	DNC	DNC	DNC	DNC	0	DNC	DNC	DNC	0	10	2	DNC	30	DNC
	50	0	2	DNC	0	0	3	DNC	2	0	6	2	DNC	DNC	40
	20	1	2	5	3	0	7	DNC	2	2	10	1	0	80	66
	50	2	0	8	1	100	11	3	3	1	16	3	4	90	91
	90	2	0	10	3	0	11	4	3	3	18	DNC	4	100	100

* This is one way to demonstrate multiple sources of evidence.

AM **Blank Spreadsheet** Course. 07) 410560-4 Science 6

Teacher, [redacted]

	pre test (0-100)	Bellringer 1 (0-2)	Bellringer 2 (0-10)	Exit Ticket (0-10)	Bellringer 3 (0-3)	Homework (0-100)	check up 1 (0-11)	Bellringer 4 (0-4)	Bellringer 5 (0-3)	Bellringer 6 (0-3)	check up 2 (0-20)	Bellringer 7 (0-3)	Bellringer 8 (0-4)	post test (0-100)	Unittest (0-100)
	50	2	6	8	2	DNC	DNC	4	3	2	16	3	4	80	78
	100	2	10	10	3	100	11	4	3	3	20	3	4	100	94
	40	2	6	9	3	100	10	DNC	3	3	19	3	4	100	97
	40	2	10	9	3	75	9	4	3	DNC	16	3	4	60	78
	30	2	DNC	DNC	DNC	DNC	7	4	1	0	7	0	4	DNC	DNC
	10	1	2	2	2	100	9	4	2	1	15	3	4	90	78
	40	2	4	10	3	100	11	4	2	3	18	3	4	90	94
	80	1	4	8	1	100	11	4	1	3	17	3	4	100	94
	20	0	2	7	1	25	11	3	0	DNC	DNC	DNC	DNC	90	78
	30	2	6	10	1	100	8	1	DNC	2	15	3	3	DNC	DNC
	60	2	6	10	3	100	DNC	DNC	3	2	18	3	3	90	94
	80	2	2	10	3	DNC	11	4	2	1	14	3	4	80	91
	60	2	6	DNC	3	75	8	4	DNC	3	14	3	4	70	63
	20	1	0	4	0	100	5	3	0	0	14	0	1	50	38
	60	2	2	9	3	100	11	4	3	3	19	3	4	100	97
	DNC	1	4	DNC	1	25	DNC	0	2	3	11	DNC	DNC	70	69
	40	1	2	6	3	100	10	4	3	3	14	3	4	90	75
	70	2	10	10	2	0	10	DNC	3	DNC	17	3	4	80	88
	20	1	6	3	0	100	3	2	0	1	10	3	4	20	44
	60	DNC	6	7	3	DNC	6	4	2	3	14	3	4	90	66
	50	2	6	8	3	100	10	4	DNC	3	18	3	4	DNC	DNC
	60	1	4	9	3	25	8	4	0	1	13	3	4	80	78
	60	2	2	7	2	100	11	4	1	3	15	3	4	90	88
	80	2	4	10	3	0	11	4	2	3	17	3	4	90	88
	50	1	0	6	1	25	8	3	1	1	11	2	3	100	84

Technology in the Classroom:

I feel it is essential to incorporate technology into our lessons as it enhances learning. As we as a society dive deeper into the information age, it is critical that our students are introduced to technology and are able to effectively utilize it once they graduate. Students should be using technology themselves in the classroom, not just following along with a projection or video, so that they have the opportunity to practice their skills.

Throughout my unit, Chromebooks were consistently used in almost every lesson. Google Classroom was a terrific program to share materials, check-ups, bellringers, and assignments with students. I created bell ringers and exit tickets using the Google Form aspect, which allowed students to refresh their knowledge on previous lessons and gave us results in real-time so that we could check understanding using the data immediately. Students also created Google Slides for a few class projects, including their problem based learning project to help them retain information. Although their projects had explicit directions, this gave them the opportunity to collaborate and experiment with fonts, images, and themes, which will give them the background knowledge for when they have to create more in-depth presentations in the future.

Chromebooks are also utilized for review games. Quizlet, Quizizz, and BrainPop Quiz, were used throughout the unit to check understanding with vocabulary and certain topics. Quizlet Live allows students to collaborate with each other to compete against other teams. As middle school aged students are very competitive it prompts them to get the best score possible We used sets that were relevant to the unit. Quizizz allows students to individually compete against each other, with real-time results available. BrainPop Quiz, is used as a follow up from the videos and can be completed either individually or projected so that the class can participate using whiteboards These are fun ways to incorporate technology while still grasping tightly to relevance.

Two out-of-the-box ways that technology was used in the classroom was an interactive weather map and also iPads to demonstrate heat transfer vocabulary. The interactive weather map by Glencoe (http //www glencoe.com/sec/science/activities/weather/index.html) was useful during the weather section of our unit. Students were able to drag fronts, pressure systems and precipitation to different areas of the US and pretend to be real meteorologists. This was used for two seperate Google Slide projects over the course of the unit For our lesson on heat transfer vocabulary we also utilized iPads to access their thermal cameras. This was a great way to demonstrate radiation and the students were able to pass around the iPads in their group to have a look at the warmest and coolest parts of themselves and the room around them. This use of technology was a great way to supplement learning

One very important use of technology during this unit was for our problem based learning lesson This fell at the end of the unit after lessons on weather maps and storms. The students worked to design a set of Google Slides to complete their project. Their first slide would be their title slide, which they could decorate as they chose. Their second slide would be a screenshot of an interactive weather map that they created using the Glencoe Interactive Weather Map. They were asked to place at least ten weather symbols on the map and were given explicit information on the weather events and were given location by coordinates They then had to utilize a latitude/longitude map to decipher where the location was This brought the aspect of geography to the lesson, an area where I felt the students needed a bit more background knowledge. Once they had their map completed, they included it in their slides For part two of the project, they paired up with their seat partner and were given a weather event (thunderstorm, blizzard, hurricane, or tornado) to investigate They had to research and come up with five characteristics of this event. They could use their notes, books, prior knowledge, or the computer to do so. They also had to include two pictures of the storm. They then had to create an evacuation plan for this type of storm and an emergency kit list. By working with another student, they were able to brainstorm and implement their knowledge by sharing with their seat partner. I felt this was a great way to finish out the unit and bring higher level thinking and relevance to the topic. As this was completed on Google Slides, as soon as the students turned in their slides, it was evident what they learned by completing this project I have included four projects attached which include one project for each storm, two of which are from period two and two from period seven.

College & Career Readiness Initiative:

The College and Career Readiness Initiative was created for two reasons, to ensure that skills in English and math are covered in every classroom in Virginia and to strengthen students for either higher education or a career after school. One reason that I feel so passionately about teaching science is that I find it to be an interdisciplinary subject. It is quite easy to include aspects of both English and math into daily lessons. There are quite a few College & Career Readiness Initiative standards that I have accidentally found myself covering throughout this unit. For the purpose of this paper, I am going to focus on two of these, English Standard 12 and Math Standard 50.

College & Career Readiness Initiative Example 1:

Science

SOL in unit: 6 6. The student will investigate and understand the properties of air and the structure and dynamics of Earth's atmosphere. Key concepts include f) basic information from weather maps, including fronts, systems, and basic measurements.

CCRI: Reading: Non Fiction Reading. 12 Interpret and use data and information in maps, charts, graphs, timelines, tables, and diagrams.

Link: In order to learn basic information from weather maps, including fronts, systems, and basic measurements for this SOL, students will need to have the basic ability to interpret and use data in a map These two standards will go hand in hand. For our purposes, we will look at maps of the United States as this is the country that our students currently reside in. In the Atmosphere and Weather unit students will become more familiar with locations of states within our country as well as strengthen their ability to find coordinates using latitude and longitude data in order to place their weather symbols of fronts and systems They will cover these standards in two of their lessons We will have a group lesson on maps where they will be given stickers of weather symbols including fronts, pressure systems, and precipitation to place on a laminated paper map after hearing the type of weather and the state experiencing said weather This will allow them to interpret the U.S. map in front of them to decide where the weather symbol will go. For example, if I were to announce that there is a cold front in Minnesota, headed towards the Great Lakes, students would need to first decide on which symbol represented a cold front (blue triangle shapes) and then interpret the map to decide where to place this symbol and which direction the symbol would be pointing in. Higher level thinking will be incorporated by asking which cities will be experiencing certain weather events. For example, after all symbols were placed on the map, if I were to ask "Which city is experiencing clear, sunny weather?" They would need to interpret that the high pressure symbol meant that it would be clear and sunny and that it was closest to Miami in Florida. To build upon this lesson, as part of their previously mentioned project, students will be given coordinates on a map and will be asked to put the appropriate weather symbol on an interactive map. In order to do this, they will have to interpret a map that includes lines of latitude and longitude. After establishing that points North or South are lines of latitude and East and West are lines of longitude They will have to use the data given to them in order to correctly place this symbol of cold fronts, warm fronts, high and low pressure systems as well as precipitation on their interactive map. Each lesson will have a collaborative or individualized aspect so that they can hone in and develop on these skills. These lessons in this unit should successfully cover the CCRI standard of Reading 12 as well as SOL 6.6 f, preparing students for both testing for college and also for future careers.

College & Career Readiness Initiative Example 2:

science

SOL in unit: 6.6 The student will investigate and understand the properties of air and the structure and dynamics of Earth's atmosphere. Key concepts include e) the relationship of atmospheric measures and weather conditions.

CCRI: Math: Problem Solving, Decision Making & Integration. 9. Design and conduct an experiment/survey. Key concepts include a) sample size, b) sampling technique, c) controlling sources of bias and experimental error, d) data collection, and e) data analysis and reporting.

Link: In order for my students to investigate the relationship of atmospheric measures and weather conditions for SOL 6.6 e, they will design and conduct an experiment to look at atmospheric pressure. The students will create an aneroid barometer, which is a tool that measures barometric pressure. They will do this collaboratively in small groups. Their barometer will be made out of a glass jar, a balloon, tape, a straw (cut to a point) and an index card labeled high and low. Their barometers will sit on the classroom counter for two weeks, giving them a sample size of ten days to collect data. Each day, students will come into class and record weather their pressure is rising, falling or steady, by looking at the height of the straw against their index card and then recording what the weather was for that time, either sunny, cloudy, or partly cloudy. They will try to control sources of error by keeping the barometers in the same area of the classroom, using the exact same materials, and by watching a video that explicitly gives directions on building their barometer. After their ten days of recording data, they will have to analyze their data and create a report on said data. This report will be completed on Google Slides and will include pictures of their written data, pictures of their barometer, and an analysis of their data. For some, their analysis could be that due to error their data was flawed, perhaps their balloon ripped or jar was moved. This will give the students a way to create, evaluate, understand and analyze the relationship between atmospheric measures and weather conditions, covering multiple levels of Bloom's Taxonomy, while also covering the CCRI math standard of designing and conducting an experiment.

* This would be one page if the student teacher used double spaces (APA format) instead of single.

Scaffolding Instruction in the Classroom:

Introduction:

Throughout this unit, I often used scaffolding instruction in my science classes. According to Merriam-Webster Dictionary, Scaffold is a temporary movable platform at a height above the floor or ground. When it comes to instruction, we should think about it in a similar fashion. We must provide our students with a structure to each topic that initially we ease away from. Most of my lessons begin with an individual assessment of knowledge from the day before. We then start the new topic, usually with a demonstration by myself. After the demonstration, we take some written notes as a group, with myself guiding the students They then watch a video to add additional support They then can think-pair-share or read in partners or groups. The next day they will again have an individual assessment of this topic. This not only provides them with an abundance of support in a variety of methods, but also keeps the lesson moving. The students have something different to do every fifteen minutes or so, which also supports brain research that states that students should not have a given task longer than their age plus or minus two minutes. There is a variety of research that has been conducted to show the benefits of scaffolding instruction as well as the best steps to take to make it as effective as possible within a lesson

Research: (yr)

In the article *Providing Support for Student Independence Through Scaffolded Instruction*, Larkin provides us with ways that we as educators can provide our students with effective scaffolding of instruction. One way to do this effectively is to consider curriculum goals and student needs ahead of time. This was done in my classes by reviewing the SOL essential knowledge, learning and previous test questions made available on PowerSchool. We can also look at data from the benchmark and IEPs to see which students need additional assistance during this unit Another way to effectively do this is to provide students with cues, as opposed to correcting them promptly after the mistake is made. Giving them small clues instead of negatively responding will help the students gain confidence as they answer more independently A third way to effectively scaffold is to give feedback. This happens every day either when questioning or an online bellringer is completed. With bellringers, data is produced right away which can guide future questioning and feedback for strategies can be given at that point in time.

All the way on the other side of the Earth, educators are utilizing the strategy of scaffolding their instruction. In an article from the University of Wollongong, called Scaffolding and Learning. its role in nurturing new learners, I learned of the theoretical basis for scaffolding. The theoretical basis for scaffolding according to the article is zone of proximal distance. This is defined as what a student can and cannot do on their own. It is important to address this before you even begin scaffolding your instruction. For instance, in my class, I have a student that has a lot of trouble reading and benefits from texts being read aloud. He may need additional support or to utilize an online text with reading assistance available for him. These are things we must consider. A survey completed by the University of Wollongong Research Council on the topic of scaffolding was included in this article and the following was stated

indent

"Scaffolding is a technique that uses steps to gradually develop learning. Scaffolding breaks tasks down into manageable steps so it does not become overwhelming Scaffolding – breaking tasks down and being more explicit with the teaching of the steps. I think that scaffolding means breaking up the material into parts (as in a scaffolded story when questions are asked to enable the story to continue). Scaffolding helps students to progress at a level comfortable for them and learning is progressive, that means that they're learning little bits at a time in order to develop understanding (p. 170)".

Author, yr

One other lesson that I learned from this was that it is essential to be explicit in directions. The expectations for the days lesson must be crystal clear to each student This may come from a variety of methods, visual or verbal.

(Author, year)

I felt it useful to research an article on scaffolding instruction for a problem based learning lesson and found an article called, *Effect of worksheet scaffolds on student learning in problem-based learning* This article dictated that "soft scaffolding" is essential when it comes to a problem based learning lesson. According to this article soft scaffolding is when a teacher provides additional context through conversation or other information on the topic that may engage the student in the topic. I found that this was the type of scaffolding that I was doing when I circled the room to assist students with their projects. It is important for the teacher to also be collaborative, not only the students to keep the conversation going and ask higher level thinking questions According to this study, students who were provided with scaffolding instruction by their teacher were more likely succeed. I was glad to take this approach with our problem based learning project this unit. Students stayed engaged and when I mentioned emergency kits, some even said they already had an emergency kit at home, which sparked interest.

year?

According to the Northwest Evaluation Association (NWEA), there are at least four benefits to incorporating scaffolding instruction into your classroom. According to their article, *4 Benefits of Incorporating Instructional Scaffolding in Early Childhood Assessments*, these are that it will keep students focused, reduce anxiety, generating formative data, and that it creates momentum. I find that all of these are a result of scaffolding in my classroom. Students are much more independent once they ease dependence off of the teacher through scaffolding. Although there are some very positive benefits to scaffolding their are some challenges that an educator might face. According to the article, *The challenges of instructional scaffolding· The challenges of instruction that supports student thinking. Learning Disabilities Research & Practice* We as educators must realize that not all students are in need of scaffolding. I find this to be true in my classroom. Some students are already knowledgeable on a topic and don't need the level of support that other students do. Because of this, these students are provided with activities for when they finish early or are in need of a challenge. Another challenge according to this article is that the teacher needs to be knowledgeable on the topic at hand. I find this to be critical. I must come prepared on the topic that I am teaching that day to my students. The final tip that this article had was that we must stay positive and patient with our students If one method of scaffolding does not work for students, stay positive and try an alternative method.

year?

Conclusion:

In summary, scaffolding is an essential practice in a middle school science class It can be utilized in both typical instruction and problem based learning projects as well. Creating different levels of dependence before the student is confident enough to be knowledgeable on the current topic is beneficial to both the teacher and student and can boost productivity and engagement in the classroom. After completing this research and implementing it in my classroom, I will continue to incorporate scaffolding into my future lessons

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*APA formatting not followed. *

Middle Science

STUDENT IMPACT PROJECT

Each student teacher is required to electronically submit a "Student Impact Project" that documents an example of K-12 student learning as a direct result of the MBU student's actions during a particular unit of instruction.

Due date: Your Student Impact Project is **due to your cooperating teacher** (if applicable) **and university supervisor by the Monday of your LAST full week of student teaching.** The SIP is worth 25% of the final grade; therefore a student cannot pass student teaching without submitting the SIP.

Submission: *Each student should submit this assignment as one electronic file (Word OR PDF only) saved as his or her student ID number +SIP to Lori Wall at lwall@marybaldwin.edu. For example, the file should be named 301555155SIP. A* grade for student teaching will NOT be posted until this project has been received electronically by the Field Placement Coordinator.

Students must select one of the options below:

Option 1: Pre- and Post-assessment (any endorsement)

The teacher candidate will plan and implement a unit of instruction in which he or she conducts a pre- and post- assessment of student knowledge. The candidate will analyze and reflect upon this assessment data in evaluating his or her success in teaching that particular unit of study based on student outcomes.

Items to be submitted include:

- ✓ cover page with name, ID# and option selected
- ✓ blank copy of the pre- assessment
- ✓ student data for pre- assessment (do not use real names)
- ✓ one-page description of instructional decisions made based on pre- assessment data
- ✓ one-page summary of the unit
- ✓ blank copy of the post- assessment, if different from the pre-assessment
- ✓ student data for post- assessment (do not use real names)
- ✓ one-page reflection of the student data (changes in student knowledge) including any instructional decisions made as a result of this data
- ✓ 2-3 page synthesis of current research and evidence to support instructional practices used in SIP. Proper APA citations must be included
- ✓ one page summary describing instructional decisions and actions engaging student use of technology.
- ✓ one page for each of the College and Career Readiness Initiative standards referenced in SIP describing how they are linked to SOL standards

***Options 2 and 3 are on the following page.**

Middle Science

Evaluator: Please **CIRCLE** one score per row.

	0 Unacceptable	1 Minimal Evidence	2 Adequate Evidence	3 Very Clear Evidence
Evidence of student growth/learning as a direct result of the candidate's instructional actions (Performance)	There is inadequate evidence that the teacher candidate impacted student learning/growth in any measurable way.	The teacher candidate provides partial evidence that his or her instruction of students resulted in positive measurable change in student learning/growth	The teacher candidate provides clear evidence that his or her instruction of students resulted in positive measurable change in student learning/growth	The teacher candidate provides and describes clear and multiple sources of evidence that his or her instruction of students resulted in positive measurable change in student learning/growth.
Evidence of reflecting on student data in order to make instructional decisions (Reflection)	There is in adequate evidence that the teacher candidate used student performance date to make instructional decisions.	The teacher candidate partial evidence that he or she reflected on student performance data in order to make instructional decisions.	The teacher candidate provides clear evidence that he or she reflected on student performance data in order to make instructional decisions	The teacher candidate provides clear and multiple sources of evidence that he or she reflected on student performance data in order to make instructional decisions
Documentation of use of research and evidence to guide instructional decision making	The teacher candidate uses limited examples of current research regarding best practices to guide instructional decision made within this project	The teacher candidate uses one example of current research regarding best practices to guide instructional decision made within this project.	The teacher candidate uses 2-3 examples of current research regarding best practices to guide instructional decision made within this project.	The teacher candidate uses 4-5 examples of current research regarding best practices to guide instructional decision made within this project
Evidence of linking Career and College Readiness Initiative (CCRI) standards to lesson goals and objectives as related to SIP at an appropriate developmental level.	The teacher candidate identifies one CCRI standard. Depth of knowledge or ability to describe the connections is lacking.	The teacher candidate identifies one CCRI standard when linking with SOL standards within goals and objectives Depth of knowledge or ability to describe the connections is weak	The teacher candidate identifies one CCRI standard when linking with SOL standards within goals and objectives Demonstrates depth of knowledge when describing the connection	The teacher candidate identifies more than one CCRI standard when linking with SOL standards within goals and objectives. Demonstrates depth of knowledge when describing the connection
Evidence of modeling technology standards as they design, implement and assess learning experiences.	Rarely integrates instructional technology into instructional practice.	The teacher candidate uses technology to deliver instruction.	The teacher candidate engages student use of technology in design, implementation and assessment of learning experiences	The teacher candidate facilitates student engagement in design, implementation and assessment of learning experiences Use of technology enhances learning

Additional Comments:

_____

_____

Field Placement Coordinator Use Only:

Student Teaching Performance: ____/7 = ____ *75 = ____
Student Impact Project: 14 /15 = .93 *25 = 23.3
GRADE: ____

***Final grade is calculated by averaging the CT/US grades unless otherwise noted by the US; if noted, the US grade only will be assigned.**

Sum of ST Performance + SIP:

A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82

C+ or less: non passing grade

*See explanation on the next page. *

Option 1 –Middle Ed Science
SIP Grade Explanation

1. **Performance – 3 out of 3 points**
   The student teacher clearly documented multiple sources of evidence that showed his/her instruction resulted in positive and measurable changes in student learning. Multiple pieces of evidence included pre- and post-assessment data as well as documentation of other assignments completed.

2. **Reflection – 3 out of 3 points**
   The student teacher clearly reflected on the multiple sources of evidence that showed his/her instruction resulted in positive and measurable changes in student learning. S/he reflected on the pre-assessment data as a whole and by question as well as the post-assessment data as a whole and by question. Reflecting on the other assignments and how the grades impacted the student teacher's planning/instruction would have made this stronger.

3. **Research – 3 out of 3 points**
   The student teacher researched scaffolding instruction, included five quotes/examples, and reflected on the research to show how s/he used this information in their unit. APA formatting was NOT followed and should have been corrected before submission.

4. **CCRI – 3 out of 3 points**
   The student teacher clearly linked the SOL to TWO CCRI skills, one English and one Math, writing one page about each link. The student teacher used single spacing instead of double spacing, but s/he did have a page for each CCRI. (APA formatting uses 12-point font and double spacing.)

5. **Technology – 2 out of 3 points**
   The teacher used technology to engage students in several learning activities. The teacher asked the student to use technology to research a topic, answer questions, and to complete assessments (quizzes, games, etc.). For the student to receive a 3 on this section, s/he would have needed to have the students design, implement, and assess learning experiences. For example, create PowerPoint slides to share what they learned and then contribute a question based on what they shared to be used on the next quiz.

Final grade: 14 out of 15 possible points. Assuming this student was meeting expectations in ALL areas on their final evaluation, thus receiving all points for that part of the grade recommendation form, they would have received a 98.3% in student teaching which is an A.