MAST ACADEMY OUTREACH

ELEMENTARY PROGRAM

Adventures Aboard WOW (Weather on Wheels)

Post-Site Packet



MAST Academy Maritime and Science Technology High School Miami-Dade County Public Schools Miami, Florida

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WEATHER ON WHEELS POST-SITE PACKAGE

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TEACHER INSTRUCTIONS

Make copies of the post-site lessons for each student. Do not copy the answer key.





Have each student complete the lessons. Grade the lessons.

Incorporate the score for the post-site activities into the scores for the pre- and on-site activities. A Certificate Request Form will be mailed to you after the date of your WOW visit. Record percent scores for all participating students on this form. Certificates of recognition will be awarded top all students earning a percent score of 80% or above.



Complete the evaluation form mailed to you with the Certificate Request Form, and return it to **MAST Academy Outreach**, **Mail Code 7161**, or fax to 305-365-9409 within 10 days of completing activities.

TEMPERATURE

The Fahrenheit Scale

In 1714, Gabriel Fahrenheit, a Dutch Physicist, created a standardized temperature scale by placing four fixed pints of reference on a thermometer. He found his first fixed point by placing a mercury thermometer in a mixture of ice water and salt. He called this temperature reading zero degree.

For his second fixed point, Fahrenheit decided to call the temperature of the healthy human body 96° . Later on, more accurate thermometers measured the average temperature of the human body to be higher.

The Fahrenheit scale is still used in the United States.

1. What is the actual temperature of the average healthy human body?

Fahrenheit established his third fixed point by marking one-degree lines of equal distance from zero to 96. He ran experiments to find where the liquid in a thermometer was when ice begins to melt.

2. Based on his thermometer with fixed points at zero and 96⁰, what did he find the melting point of ice to be?

Fahrenheit fixed a fourth point on his thermometer to mark the boiling point of water.

3. What is the boiling point of water on Fahrenheit's scale?

The Celsius (Centigrade) Scale

Anders Celsius, a Swedish Astronomer, simplified the Fahrenheit scale in 1742. He reasoned that only the melting point of ice and the boiling point of water should act as fixed points on a thermometer. He chose these as fixed points because at sea level, the melting point of ice and the boiling point of pure water are always the same. He called the melting point of ice zero degrees, and the boiling point of pure water 100° .

4. How many equal units is the Celsius scale divided into?

Celsius originally called his scale the Centigrade scale. The name was changed to the Celsius scale in his honor in 1954. The Celsius scale is used in most countries around the world, as well as in the scientific community.

WHEN LIGHTNING STRIKES

How Far Away Is The Storm?

Light travels 186,000 miles (300,000 kilometers) a second, so you see it almost the instant it is produced. Sound travels much more slowly - only about 1,100 feet (330 metros) a second. It takes quite a while to reach you.

When you see lightning, start counting seconds.

Count until you hear the thunder. If there's five seconds between the lightning and the thunder, the lightning is about 5,500 feet away-about one mile (1 and one half kilometers.) Divide the number of seconds you count by 3 and you will find the number of kilometers.





- If there are 8 seconds between seeing lightning and hearing thunder, how many miles away is the lightning?
 (Show your work.)

Read each statement below. Circle DO if it is something you should do during a lightning storm. Circle DON'T if it is something you should not do.

12720r

(DO / DON'T) use the telephone.

(DO / DON'T) go inside if possible.



(DO / DON'T) go near metal fences.



(DO / DON'T) go under a large tree.



(DO / DON'T) go in a lake or the ocean.

(DO / DON'T) get in a crouch position if you are outside.



(DO / DON'T) stand in a crowd.



(DO / DON'T) use a hardtop car as shelter.

(DO / DON'T) go fishing.



Down

- 1. Highest cloud; made of ice crystals
- 2. Middle-altitude cloud that forms thin veils and makes sky look hazy
- 5. What clouds are made of
- 7. Any type of cloud that has rain coming from it
- 8. A mass of tiny water droplets in the atmosphere that appears white

WEATHER SATELLITE WORD SEARCH

Find the words below hidden in the puzzle. Read across, down, backwards, and diagonally.

	DATA GOES ORBITS SATELLITE					II IV P(TH	TOS NFR OLA ELE	AR AR EVIS	ED SIO	N	WEATHER LAUNCH RADIO TIROS							SPACE NOAA ROCKET GEOSTATIONA						
R	м	U	۷	В	0	R	В	ł	T	S	Ν	A	ε	F	х	L	l	ł	Q	В	S	L	м	G
х	A	К	Х	T	C	G	Q	۷	А	S	Ρ	Y	У	D	Q	S	A	Ν	W	0	D	н	A	ε
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L	۷	L	1	D	0	L	Н	S	R	У	t	Z	c	Q	А	Т	У	R	м	T	R	0	A	s
Ν	D	T	Q	0	У	S	D	R	0	C	к	Ε	Т	Ε	Ε	1	W	Α	Q	L	В	J	J	т
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J	S	0	Ν	۷	L	Ε	Т	Ρ	W	У	١	0	L	Ρ	L	Ν	۱	Ε	ับ	Ν	Н	н	Ζ	т
Ν	S	м	A	Ρ	м	м	L	Ρ	к	К	Т	У	R	н	0	С	. V	D	F	V	J	м	0	1
Ν	J	W	Т	J	S	S	M	Ε	F	L	B	Ρ	E	L	Ó	L	۷	S	1.1	J	W	X	Т	0
0	м	Ρ	н	0	J	Α	Z	Ε	۷	U	Q	Ν	н	м	Α	Q	Α	х	U	Ε	Ε	х	Ε	Ν
A	۷	Ρ	G	D	х	S	Т	Z	C	١	У	Х	R	L	Z	Н	н	R	Ε	Х	0	τ	У	A
A	1	н	U	Т	W	L	У	Ε	R	Т	S	Х	0	S	т	S	D	A	т	Α	Ζ	U	ε	R
U	E	Х	V	Ρ	Е	1	R	н	L	У	Ν	i	R	G	G	н	L	G	Ρ	L	L	S	U	У
К	С	Х	J	R	А	1	U	0	Ν	L	Ν	т	0	G	۷	J	н	L	L	U	1	G	Ē	Ζ
Т	S	S	U	G	T	U	т	L	Q	Ρ	I	C	к	Ν	.T	C	В	Α	. V .	Q	0	D	ן	U
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Z	I	R	1	Q	Ε	Н	W	У	S	к	м	U	Ε	G	W	R	Ε	Ν	ſ	T	W	А	R	U
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Н	К	C	Ζ	G	0	Ε	S	м	l	D	Ε	У	G	F	К	R	Ε	W	А	8	۷	W	к	W

Answer Keys (100 Total Points)

Temperature (26 total points – 4 for each question at the end of the experiment; 10 for doing the experiment)

- 1. Soil is warmer.
- 2. Water is warmer.
- 3. Soil molecules are closer together and, therefore, move slowly and cannot carry heat deep as water molecules which are farther apart and which, therefore, move more can easily to carry heat deeper under the surface.

When Lightning Strikes (22 total points - 2 for each question)

- 1. 8seconds/5 miles per second = 1.6 miles
- 2. 8/3 = 2.7 km

Don't use the telephone Do go inside if possible. Don't go near metal fences. Don't go under large trees. Don't go in a lake or the ocean. Do get in a crouch position if you are outside. Don't stand in a crowd. Do use a hardtop car as shelter. Don't go fishing.

Cloud Crossword Puzzle (20 total points)

Weather Satellite Word Search (32 total points)





The School Board of Miami-Dade County, Florida, adheres to a policy of nondiscrimination in employment and educational programs/activities and strives affirmatively to provide equal opportunity for all as required by:

Title VI of the Civil Rights Act of 1964 - prohibits discrimination on the basis of race, color, religion, or national origin.

Title VII of the Civil Rights Act of 1964, as amended - prohibits discrimination in employment on the basis of race, color, religion, gender, or national origin.

Title IX of the Education Amendments of 1972 - prohibits discrimination on the basis of gender.

Age Discrimination in Employment Act of 1967 (ADEA), as amended - prohibits discrimination on the basis of age with respect to individuals who are at least 40.

The Equal Pay Act of 1963, as amended - prohibits sex discrimination in payment of wages to women and men performing substantially equal work in the same establishment.

Section 504 of the Rehabilitation Act of 1973 - prohibits discrimination against the disabled.

Americans with Disabilities Act of 1990 (ADA) - prohibits discrimination against individuals with disabilities in employment, public service, public accommodations, and telecommunications.

The Family and Medical Leave Act of 1993 (FMLA) - requires covered employers to provide up to 12 weeks of unpaid, job-protected leave to "eligible" employees for certain family and medical reasons.

The Pregnancy Discrimination Act of 1978 - prohibits discrimination in employment on the basis of pregnancy, childbirth, or related medical conditions.

Florida Educational Equity Act (FEEA) - prohibits discrimination on the basis of race, gender, national origin, marital status, or handicap against a student or employee.

Florida Civil Rights Act of 1992 - secures for all individuals within the state freedom from discrimination because of race, color, religion, sex, national origin, age, handicap, or marital status.

School Board Rules 6Gx13- <u>4A-1.01</u>, 6Gx13- <u>4A-1.32</u>, and 6Gx13- <u>5D-1.10</u> - prohibit harassment and/or discrimination against a student or employee on the basis of gender, race, color, religion, ethnic or national origin, political beliefs, marital status, age, sexual orientation, social and family background, linguistic preference, pregnancy, or disability.

Veterans are provided re-employment rights in accordance with P.L. 93-508 (Federal Law) and Section 295.07 (Florida Statutes), which stipulate categorical preferences for employment.

REVISED 8/1/01