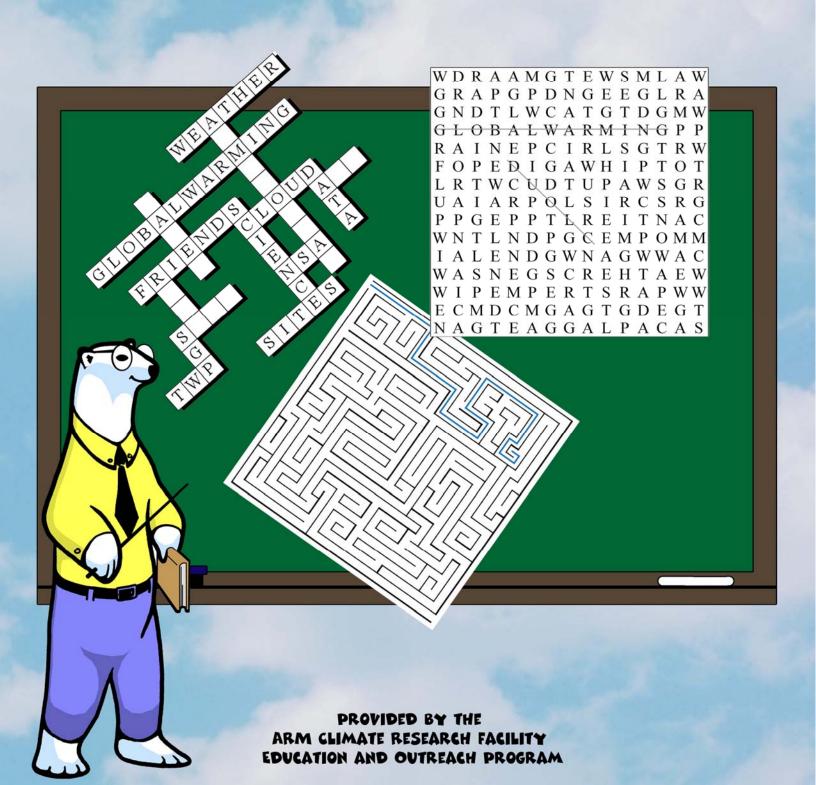
CLIMATE, COLORING, CROSSWORDS

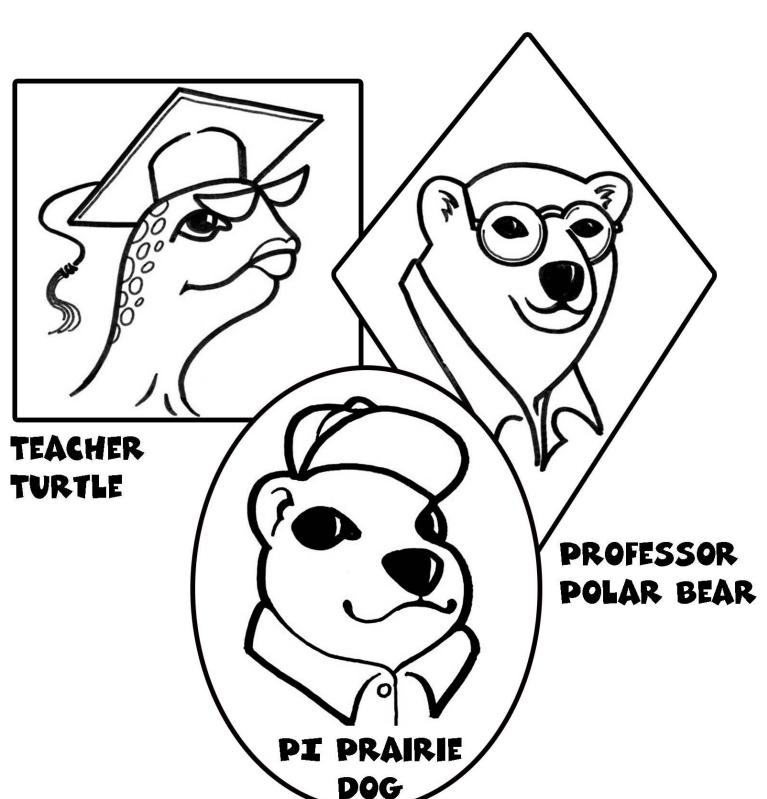
...AND OTHER FUN STUFF



CLIMATE, COLORING, CROSSWORDS ...AND OTHER FUN STUFF!

PROVIDED BY THE ARM CLIMATE RESEARCH FACILITY EDUCATION AND OUTREACH PROGRAM

MEET THE ARM FRIENDSA



WELGOME TO THE ARM PROGRAMS

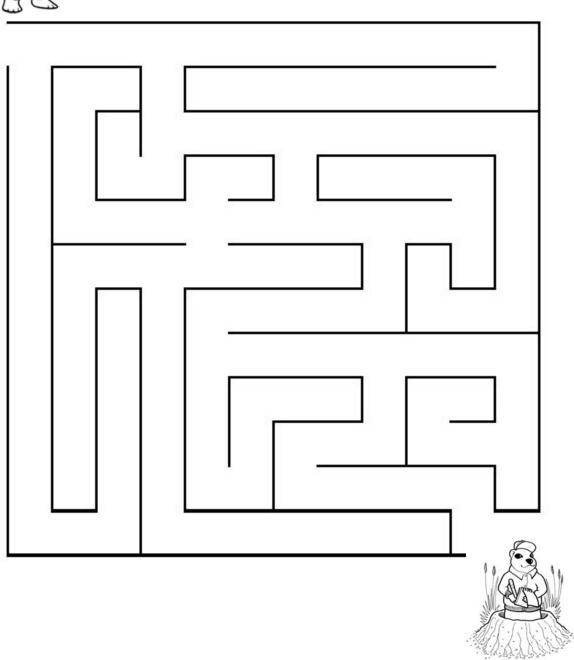


The Atmospheric Radiation Measurement (ARM) Program plays an important part in understanding changes in weather and climate all over the globe. The ARM Program chose three places in the world to build outdoor research sites with lots of scientific instruments and computers. At these sites, scientists gather and use information to study sunlight, radiant energy, and how clouds affect temperatures, weather, and climate.

AMONG FRIENDS



The ARM Friends, Professor Polar Bear, Teacher Turtle, and PI Prairie Dog, are meeting for lunch. The three friends work with the ARM Program scientists to study and teach people about weather and climate! Can you help Professor Polar Bear and Teacher Turtle meet PI Prairie Dog on time?



WEATHERING WORDS

ACROSS							
			1	2			
2 When it's							
outside, it's important to							
wear a coat and hat!	<u> </u>						
	3						
3 Light reflects off of raindrops and puddles,							
and makes a colorful							
after it rains!		4	<u> </u>		ſ	6	
						U	
4 When the				7			
blows, it is usually cold.				ľ			
-							
7 These white ice							
crystals are fun to play in!					L		
111:							
DOWN							
1 The is actually a	star that s	its in th	ne center	of our so	olar sy	/stem	
2 Some of these look big a	and fluffy	and so	ma look	thin and	ctrook	an an	4
when it rains, the sky is fil	•		THE TOOK	tilli allu	Suear	су, ап	u
Whom it rums, the sky is in	iod With th	101111					
3 This falls from the sky in	n drops – r	naking	puddles!	!			
5 When water freezes, it makes							
o when water neezes, it i	11akes	·					
6 When it's outside	, it's impo	rtant to	drink lo	ts of wat	er and	l wear	-

sunscreen!

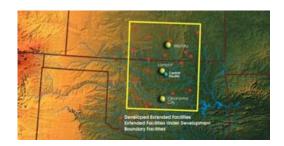
GETTING HOME

The ARM Friends just met with the ARM scientists to talk about global warming and the new things the scientists have learned. Now, they can't wait to go home and share all the new information – can you help them by matching each of the ARM Friends to their correct home?

A.



1.



Southern Great Plains

В.



2.



North Slope of Alaska

C.

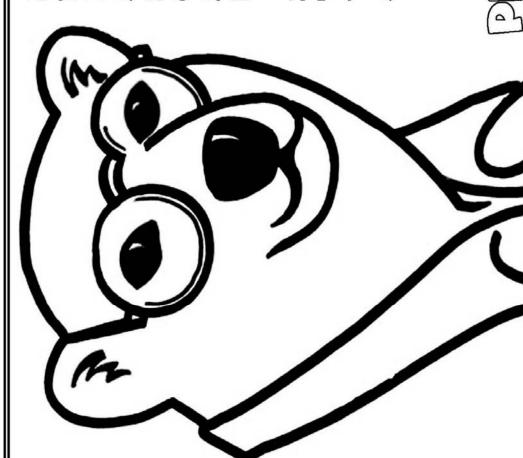


3.



Tropical Western Pacific

OBTHI SHOPE OF MYSKY



SUN OR STAINING CAN MAKE IT LOOK YELLOW WEIGHT: 775 TO MORE THAN 4,500 POUNDS! APPEAR WHITE, BUT OXIDATION FROM THE fur color: reflecting light makes it HEIGHT: 2.5-8 FEET FROM NOSE TO TAIL OR BROYN

INTERESTING FACT: FUR IS WATER REPELLENT. AGE: 15-18 YEARS TYPICALLY, BUT A SMALL THE BEARS TO EASILY SHAKE FREE OF WATER THE HAIRS DON'T MAT WHEN WET, ALLOWING PROPORTION LIVES PAST 20-30 YEARS

AND ANY ICE AFTER SWIMMING.

A PATOU OF SEA IGE OFF THE PAGIFIC PROFESSOR POLMR BEMR ENBROW WHASTAN DEPRE

STORMY DAYS

MCAIOSHAILRAIN LRRD R \mathbf{C} P I LN E CS \mathbf{C} E N R RRMAU T Α Е Α S \mathbf{C} P L T R \mathbf{E} В N S N R S R B B TAP () \mathbf{E} RMRNSN () WMAN S S I UM

Cloud Hail Icy Mittens Puddles Rain Rainbow Sleet Snow Snowman Storm Umbrella

LET'S TWIST AGAIN...

- **G.** What did one tornado say to the other?
- A. Let's twist again, like we did last summer!
- **G.** What did one hurricane say to the other hurricane?
- A. I have my eye on you.
- What did one cloud say to the other cloud?
- **A.** Don't rain on my parade!



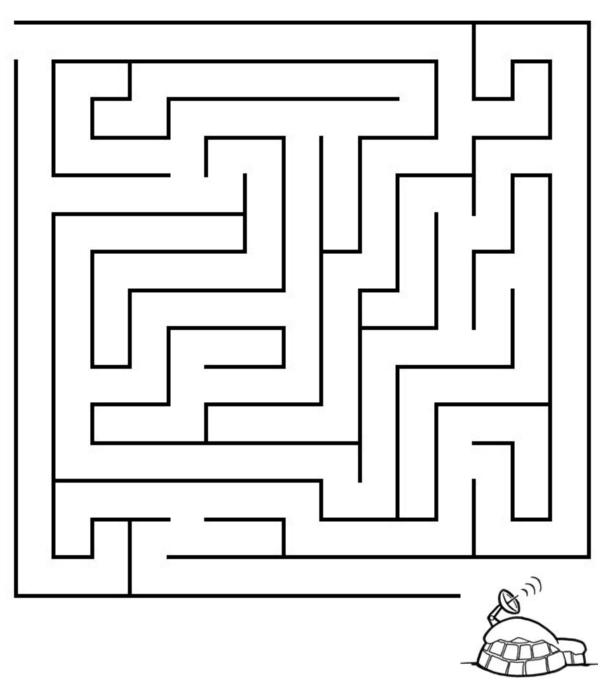
- **A.** You make my temperature rise.
- **C.** What happens when it rains cats and dogs?
- **A.** You have to be careful not to step in a poodle!
- **C.** What did the sand say to the rain?
- A. Stop, or my name will be mud!
- **G.** What did the snowman say when he got lost?
- A. We're in the middle of snowhere!
- What does lightning wear beneath its clothes?
- A. Thunderwear!
- What did Santa Claus's wife say during a thunderstorm?
- **A.** Come and look at the rain, dear.



IGLOO, SWEET IGLOO



Professor Polar Bear had a long day teaching people about global warming, and he is ready to go home. Global warming is the rise in the earth's average temperature. The earth's temperature has risen by about 1°F over the past 100 years. Scientists are studying to find out what causes this and how it affects us. Can you help Professor Polar Bear make it to his igloo?

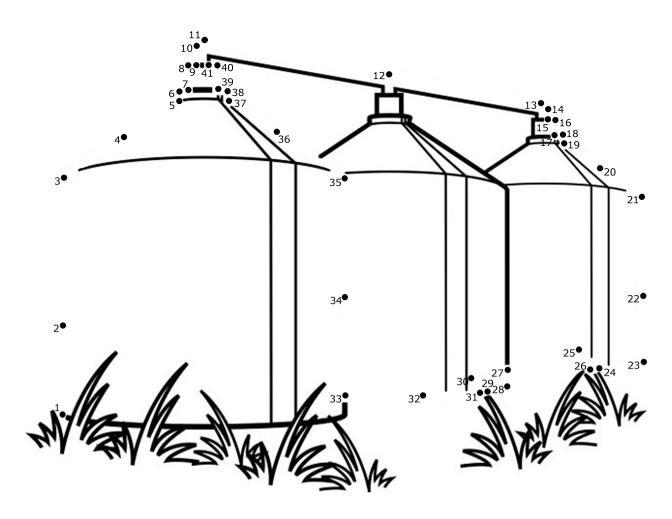


PE PRAIRIE DOG



PRINCIPAL INVESTIGATOR PRAIRIE DOG IS A SCIENTIST WHO LIVES ON THE SOUTHERN GREAT PLAINS IN OKLAHOMA. HE IS CONCERNED ABOUT GLOBAL WARMING BECAUSE HIS ENVIRONMENT IS SENSITIVE TO CHANGES IN PRECIPITATION AND TEMPERATURE. THESE FACTORS INCREASE THE CHANCE OF FIRES AND MAKE HIS HOME MORE VULNERABLE TO INVASIVE PLANTS AND INSECTS. ALTHOUGH PI PRAIRIE DOG HAS A "DOG" NAME, HE IS ACTUALLY PART OF THE SQUIRREL FAMILY!

SOUTHERN GREAT PLAINS



The Southern Great Plains (SGP) was the first outdoor research site built by the ARM Program. The SGP site is located in northern Oklahoma and southern Kansas. This area was chosen for its fairly uniform geography, easy accessibility, and changing climate and clouds. It was also chosen because there is a big difference in temperature and humidity during the various seasons, which lets scientists gather a wider range of information.

GETTING TO KNOW ARM

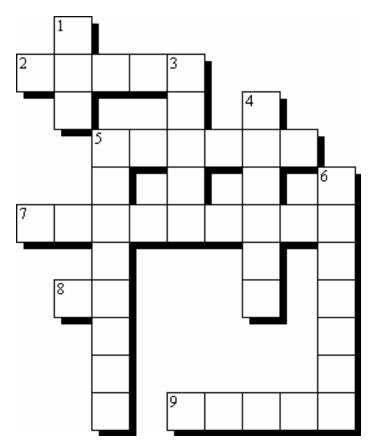
The Southern ____ Plains site.

Teacher ____ lives at the TWP site.

____ Polar Bear lives at the NSA site.

_____ Prairie Dog lives at the SGP site.

SGP, TWP, and NSA make up the ARM outdoor research



DOWN

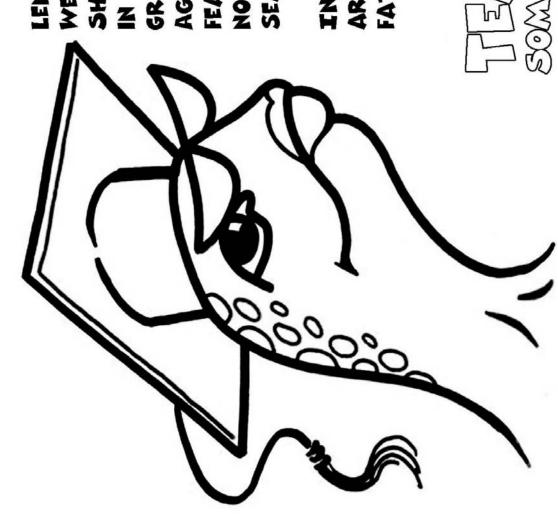
- 1 The ____ Program.
- This is the number of outdoor research sites.
- The North Slope of ____ site.
- The ____ Western Pacific site.
- A polar bear, prairie dog, and turtle make up the ARM _____.

EXTREME WEATHER

H D N I	WL	RI	HW	N O	O	H P	Y	Γ S	Н	Y
UNRS	S O	A H	D M	T H	P	I H	Y	ΓС	T	I
ROSE	NV	S T	S I	WH	T	R E	T	R A	T	Q
RNIE	LM	TI	QN	O I	U	I R	N S	S H	I	W
IVAN	EI	T O	T W	V N	R	NT	L	ΓV	H	I
C S W R	OV	G T	R N	$R\ N$	T	N D	DI	R V	D	N
ATTW	C S	НН	P A	L U	V	TN	E	3 V	C	D
NOIC	VO	N R	TR	OR	T	TT	L	R N	O	I
E F N F	RO	TR	TN	O U	E	C I	V (CT	U	L
UROR	IM	D Q	P O	I V	E	Z U	T	ΓΑ	T	D
RSDU	ST	S T	O R	M N	\mathbf{Z}	V O	\mathbf{R}	ΓΕ	X	O
H M O E	IT	T E	IT	O A	G	TT	C	R	R	C
RTWN	CI	IT	TL	R N	N	S M	C	\ U	N	E
V R R R	P D	R T	C D	G I	I	U T	O A	/ T	F	L
NVIN	WL	ΙΥ	O Q	I R	\mathbf{M}	N N	T	R U	L	N
R S S T	RI	C O	NT	UT	\mathbf{M}	A O	Al	I A	T	R
N R S I	T W	NV	C W	H C	\mathbf{E}	M U	NU	JS	R	I
MONS	OO	N O	U Z	LT	D	I E	Q 1	V Z	I	T
N S I T	IN	H T	DT	A I	R	L S	I	I I	M	T
IRNC	IN	R T	ТО	R U	D	P R	E 7	IR	T	R

Blizzard Cyclone Dust storm Funnel Hurricane Lightning Monsoon Squall Storm Thunder Tsunami Typhoon Vortex Whirlwind Wind

(0) $(4/\sqrt{1})$



LENGTH: 78-412 INCHES

WEIGHT: 150-410 POUNDS

SHELL COLOR: GREEN SEA TURTLES FOUND IN THE PACIFIC HAVE A DARK GREY, BLUISH GREEN SHELL

AGE: UP TO AN 80-YEAR LIFESPAN IS
FEASIBLE FOR SEA TURTLES, BUT THERE IS
NO ADEQUATE METHOD OF DETERMINING A
SEA TURTLES'S AGE

ARE NAMED FOR THE COLOR OF THEIR BODY INTERESTING FACT: GREEN SEA TURTLES

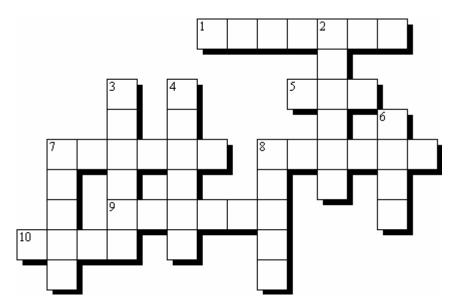
1/4/4/17 12/4/4/17

PAPER MEN COUNTY

FEEL THE HEAT

ACROSS

- 1 Reusing resources is important to saving energy ____ things like plastic, newspapers, glass bottles, and aluminum cans.
- **5** The _____ Program scientists are studying the effects of clouds on weather and climate clouds are a very important piece of the global warming puzzle!



- **7** Heating and cooling our homes and things in our homes takes a lot of energy take a shorter _____ in the morning to reduce how much water needs to be heated.
- **8** _____ warming refers to the rise in the earth's average temperature.
- **9** Saving energy is important to solving global warming save electricity by turning off _____, the television, or other appliances when we leave a room.
- **10** Planting a ____ is a good way to help reduce greenhouse gases because they absorb carbon dioxide.

DOWN

- **2** When we burn wood, coal, or gasoline in our cars, _____ dioxide is released.
- **3** Scientists can estimate how much carbon dioxide, soot, ozone, and other pollutants _____ will put into the air, with their cars and factories, over the next 100 years.
- **4** Carbon dioxide traps _____ that is trying to leave the earth and when more is coming into the earth than leaving, we get global warming.
- **6** Cars play a big part of the global warming problem _____, carpool, ride the bus, or ride bikes.
- **7** ____ with your family and friends tell them what they can do to reduce global warming!
- 8 Global warming is caused by greenhouse ____ that are released into the air.

WIPE OUT!



Teacher Turtle's chalkboard got hit by an ocean wave and erased part of her lesson – using the words below, can you help her match the term with the definition?

Altocumulus	
Altostratus	
Atmosphere	
Cirrocumulus	

Cirrostratus Cirrus Cumulus Fog

Mesosphere Nimbostratus Stratus Stratocumulus

Stratosphere Thermosphere Troposphere

1. ALTRA	Middle-level, layered clouds.
2 LCMULS	Middle-level, medium-sized, puffy clouds.
3. C R	High-altitude, thin, wispy clouds.
4. CROM_LU	High-altitude, small, wispy, patchy, puffy clouds.
5IRRRAU	High-altitude, thin, wispy clouds in layers.
6ULU	Low, puffy clouds.
7. F	Ground-hugging clouds.
8. NOSTT S	Low, dark rain cloud
9. STT	Low, layered, horizontal, wispy clouds with a flat base.
10. SROCUUS	Low clouds, broad and flat on the bottom, puffy on top.
11. AOSPE	This is made up of the troposphere, stratosphere, mesosphere, and thermosphere.
12ROPHE	This is the layer of air we live in. It extends upward ~10 kilometers from the earth surface.
13. STOSP R	The region above the troposphere. It extends from the top of the troposphere to an altitude of 50 kilometers.
14. MSSER	The region that goes from the upper limit of the stratosphere to an altitude of ~80 kilometers.
15HEOPRE	Above the mesosphere, it can extend to an altitude of ~400 kilometers or ~500 kilometers.

SEND IN THE CLOUDS

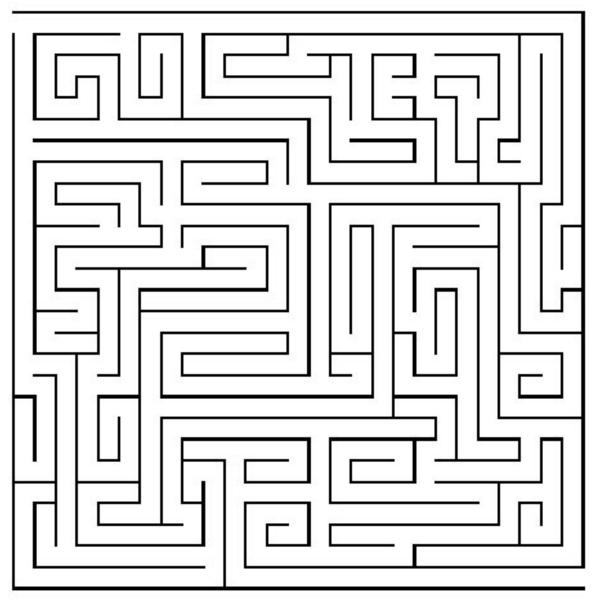
S	U	T	A	R	T	S	P	R	C	R	U	Ο	E	E	P	U	U	U	Н
C	H	R	U	E	E	S	N	Η	I	S	E	N	R	Ο	I	\mathbf{C}	R	Η	R
I	M	E	S	O	S	P	Η	E	R	E	A	E	O	\mathbf{M}	U	U	R	Ο	S
R	S	Ο	Н	Ο	R	U	\mathbf{C}	T	R	R	Н	I	E	\mathbf{C}	T	R	P	A	D
R	R	Ο	C	I	O	E	R	I	O	P	H	E	T	U	D	A	Ο	S	U
U	R	U	T	I	U	T	A	T	S	U	E	R	O	E	V	Н	T	S	O
S	S	U	T	A	R	T	S	O	T	L	A	A	Н	R	S	T	R	U	L
Н	E	R	E	Η	S	R	T	L	R	\mathbf{C}	R	O	E	D	R	Ο	O	T	C
R	T	S	I	S	R	A	Ο	O	A	R	U	T	R	O	S	Ο	P	A	Е
S	T	A	O	T	R	W	R	\mathbf{C}	T	L	A	M	R	U	U	\mathbf{C}	O	R	R
R	A	R	C	T	В	A	U	O	U	W	T	R	U	Η	L	U	S	T	Е
S	S	P	S	A	R	S	R	E	S	M	I	O	S	L	R	A	P	S	Н
A	O	S	U	Η	L	F	O	G	E	A	U	L	C	\mathbf{C}	U	T	Н	O	P
N	O	I	T	A	S	N	E	D	N	O	C	L	S	U	C	S	E	В	S
Y	T	R	U	E	T	R	R	A	E	Н	A	A	U	Ο	M	\mathbf{C}	R	M	O
S	T	Ο	S	R	Н	S	R	U	R	S	O	S	C	S	P	U	E	I	M
M	Н	U	S	T	R	A	A	O	T	U	U	P	T	M	S	Ο	L	N	T
T	Н	E	R	M	O	S	P	Н	E	R	E	C	E	R	S	S	E	U	\mathbf{A}
T	U	A	Н	U	E	A	R	P	R	E	A	E	C	Ι	P	K	M	U	S
S	T	R	A	T	O	C	U	M	U	L	U	S	U	E	E	O	Y	E	R

Air Altostratus Altocumulus Atmosphere Cirrocumulus Cirrostratus Cirrus Clouds Condensation Cumulus Fog Mesosphere Nimbostratus Sky Stratus Stratocumulus Stratosphere Thermosphere Troposphere Water vapor

SAVED BY THE BELL



The bell is about to ring, and these students need to get to Teacher Turtle's class on time! Today, Teacher Turtle is teaching about rising sea temperatures and global warming. She has seen evidence of widespread coral bleaching and more frequent and intense ENSO (El Niño/Southern Oscillation) storm patterns around her home, the Pacific "warm pool."



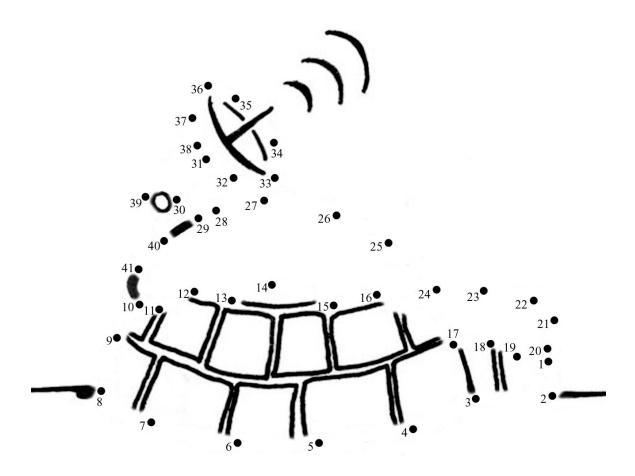


PROFESSOR POLAR BEAR



Professor Polar Bear's Home is located at "the top of the world," Just North of Barrow, Alaska. Barrow is the Northernmost Point on the Continent. Professor Polar Bear is worried about melting ice and the warming environment because it endangers his home and his survival?

WORTH SLOPE OF ALASKA



The North Slope of Alaska (NSA) is home to one of the ARM Program's outdoor research sites. The NSA site has locations in the towns of Barrow and Atqasuk. These areas are important because ice and snow take in sunlight much differently than water, and it is important for scientists to understand the differences. Also, the Arctic is the most sensitive area on earth for potential warming due to heat trapped by greenhouse gases.

IT'S A SCIENCE

ACROSS 3 Meteorology is the name for the scientific study of _____. 5 The ____ point of water is 100°C and 212°F. 7 A ceilometer is a tool used to measure cloud ____. 8 Scientists gather information, also called ____, to study 13 and make predictions or get ideas. 14 10 ____ are formed when water vapor condenses in the air. 11 The ____ point of water is 0°C and 32°F. 13 Humidity is the amount of moisture present in the air in the form of invisible _____ vapor. **14** Temperature is typically measured in Fahrenheit, _____, or Kelvin. **DOWN 1** A meteorologist is a _____ who studies weather conditions. **2** A _____ is a tool used for measuring temperature. **4** An anemometer is a tool used for measure ____ speed. **6** A wind ____ is a tool for measuring the direction of wind.

12 A scientist often makes a hypothesis, or an educated _____, before conducting an experiment.

9 A barometer is a tool used for measuring ____ pressure.

10 Climatology is the name for the scientific study of _____.

ALL MIXED UP



Professor Polar Bear slipped and fell on the ice on his way to class. Now, all his note cards for his global warming presentation are mixed up! Can you help him put them back in order in time for his presentation?

HINT: Visit the ARM Climate Research Facility Education Study Hall for help finding the answers: http://education.arm.gov/studyhall.stm.

1. This is the result of a rise in the average temperature of the earth. In the last 100 years, the average temperature rose less than 1 degree.

BALLOG MANWIRG

1 2 3 4 5 6 7 8 9 10 11 12 13

2. These gases absorbs energy emitted from the earth and prevents it from going back out into space, thus causing global warming.

HORSENGEEU SASEG

14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

3. These are a very important piece of the global warming puzzle.

SOLDUC

29 30 31 32 33 34

4. This is not only a greenhouse gas but also shields us from ultraviolet light.

ZOONE

35 36 37 38 39

5. These occur when global temperatures fall and sheets of ice build up from snowfall accumulations over long periods of time.

CIE SEGA

40 41 42 43 44 45 46

6. A naturally occurring greenhouse gas that is made up of one molecule of carbon and four molecules of hydrogen. It is odorless, colorless, and it is lighter than air.

TEANHEM

47 48 49 50 51 52

7. Studying these reveal climatic information back to more than 10,000 years ago and provide us with annual and seasonal changes in climate.

ERET GRINS

ALL MIXED UP

8. To understand what is happening today and what might happen tomorrow, a scientist makes this (or an educated guess) about what is going on.

SPHEOTYHIS

62 63 64 65 66 67 68 69 70 71

9. The most effective, fastest changing, and least understood of the greenhouse gases. This is a powerful greenhouse gas; and it is the dominant greenhouse gas.

REWAT RAVOP

72 73 74 75 76 77 78 79 80 81

10. Global warming is primarily a result of the burning of these and deforestation, which are both manmade sources.

SOFSIL LESUF

82 83 84 85 86 87 88 89 90 91 91

11. The most common greenhouse gas; it accounts for 64 percent of the total absorption of infrared energy by greenhouse gases.

OBCRAN DEXIODI

92 93 94 95 96 97 98 99 100 101 102 103 104

12. You can help control global warming by saving energy – find out how by filling in the blanks using the numbers above!

9 16 33 21 29 17

15 23 32 26 27 5 18 98

54 39 29 63 92 30 39

In Kansas, tornadoes often hit hard and without warning. In one case, a house was completely blown away, leaving only the foundation and first floor. A silver-haired farm lady was seen sitting dazed, in a bathtub, the only part of the house left above the floor. The rescue squad rushed to her and found her unhurt. She was sitting there in the tub, talking to herself.

"It was the most amazing thing... it was the most amazing thing," she kept repeating dazedly.

"What was the most amazing thing, Ma'am?" asked one of the rescuers.

"I was visiting my daughter here, taking a bath, and all I did was pull the plug, and doggone-it if the whole house didn't suddenly drain away."

31 (V) (G) / J) (V) (G)



HEIGHT: 44-17 INCHES WEIGHT: 4-3 POUNDS FUR COLOR: LIGHT BROWN, WHICH BLENDS WELL VITH THE DIRT

AGE: UP TO 5 YEARS FOR MALES, UP TO 8 YEARS FOR FEMALES

COLONY CAN HAVE THOUSANDS OF RESIDENTS AND EXTEND FOR MILES IN ALL DIRECTIONS. ONE COLONY THAT WAS DISCOVERED IN THE "TOWNS" OR "VILLAGES." AN UNDISTURBED Interesting fact: Prairie Dogs Live in 19TH CENTURY WAS AS BIG AS BELGIUM!

PES PRAMIS PO MONE IN THE GROWND LAWOND, ORLANDAM PROPE

STUDY HALL CAN BE FUN!

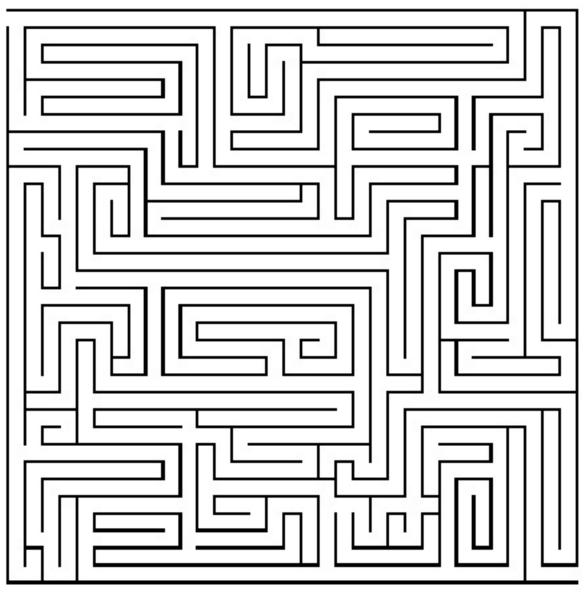
HINT: Visit the ARM Education Center (http://education.arm.gov) to find the answers!	3	1 2 4		5
ACROSS				0
1 Teachers' provides resources for teachers including lesson plans and background information.4 Global Warming is broken	11 12 13	9	8 10	
up into three different levels: Global Beginners, Global, and Global Experts. 7. The APM Program is	14			
7 The ARM Program is working to understand global c	limate .			
9 The Radiation Measure11 The ARM Climate Research resource for homework help (2)	Facility Education	_	vides	, a great online
14 PI Prairie Dog, Professor Po	olar Bear, and Te	eacher Turtle	make up the A	ARM
DOWN				
2 Homeroom contains informa	tion about educa	ation and	_•	
3 The Just for section inc	cludes word seel	ks, crossword	puzzles, and c	coloring pages.
5 Ask a allows you to ask radiation, weather, and the env		tists question	s about global	warming,
6 To test your knowledge of gl	lobal warming, y	ou can visit T	ake a !	
8 Sites lists great online weather.	resources for in	formation abo	ut science, glo	obal warming, and
10 Before you submit a questi Questions (FAQs) and Qu		•		
12 This is the number of outdo	oor research site	es the ARM Pro	ogram has esta	ablished.
13 The ARM Program is an imp	portant part in tl	nis governmer	nt agency's str	rategy to

understand global climate change (initials).

IT'S A BEAUTIFUL DAY!



There are lots of great clouds in the sky, and PI Prairie Dog needs to get to his instrument, the Millimeter Wave Cloud Radar (MMCR), to take some important measurements for the ARM Program. The MMCR measures cloud compositions at millimeter wavelengths, which helps scientists study cloud boundaries – the tops and bottoms of clouds.



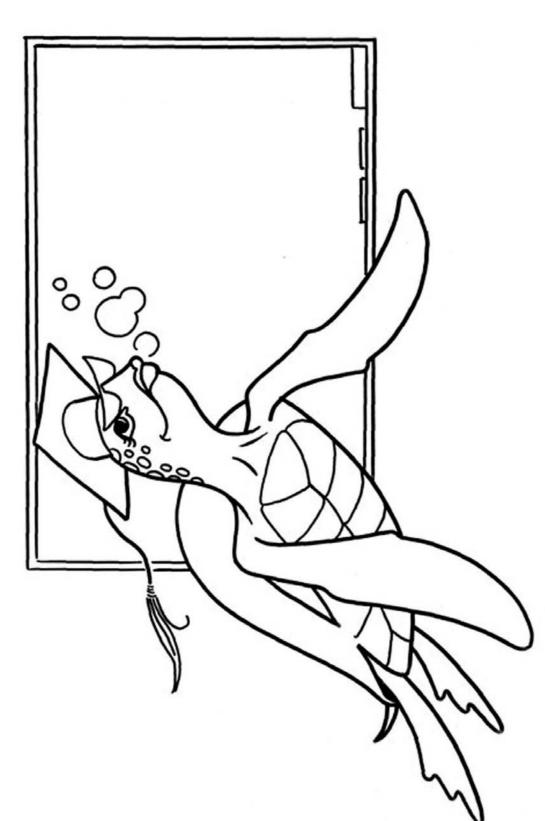


A SCIENTIFIC FIND

ASGMEEHSRDSQCTEREIUCRS R D G S M H L I I R R R O I S E C N E I C S MUPOIECIRSTPOUGSIAUIAE PORRDITRMLTIRECERRCRRS RLGOOSISEHTOPYHAIESSOR OCMREPORTMERIRERPRNCSS GRMSEMNMNEHEETRCSOCRRL RSCIENTISTNRSRRHISIOUU AOITNEETTMNSCTSTMEIECE MOOSRMIESSEAANSDSANTRG TETSIMEUIMEESETATRRNEE MEASUREMENTXUTMTSRTEQS RTGMRRRLRTEOPSTAEHMMSL MERDTS TMHO I PNETRLO I UR S UMSHMHRETTTTSNRSTMRRSS S S P U T M C M T R S O S S S I T U M T S R ARPPLETRREISOMTCMRTSSO SNCRTTMRCORTCEEMMEONSR UETSTASASRENROETRONIUE ITOMMDTPGCREOMCOITCTEE SEOMRTEEOISRLCGCNPHATC EOESSRRPEOSRESPUERTDHH

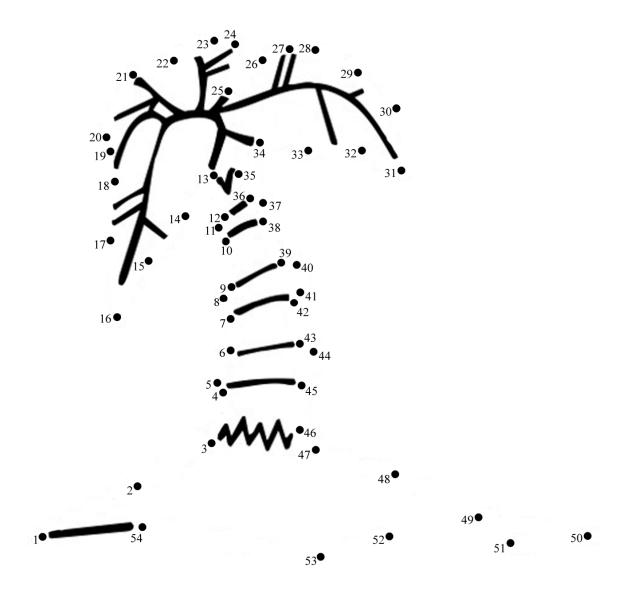
ARM Program Clouds Data Experiment Hypothesis Instrument Measurement Models Questions Report

Research Results Science Scientist Sites



ABOUT RISING SEA TEMPERATURES AND GLOBAL WARMING. SHE HAS SEEN EVIDENCE OF WIDESPREAD AND CLIMATE CHANGE ARE THE MAJOR THREATS TO HER SURVIVAL. TEACHER TURTLE IS CONCERNED ONE OF EIGHT SPECIES OF SEA TURTLES, ALL OF WHICH ARE THREATENED OR ENDANGERED. HUMANS TEACHER TURTLE LIVES IN THE TROPICAL WATERS REFERRED TO AS THE PACIFIC "WARM POOL," Coral bleaching and more frequent and intense enso storm patterns. OFF THE COAST OF PAPUA NEW GUINEA, JUST NORTH OF AUSTRALIA. SHE IS

TROPIGAL WESTERN PAGIFIG

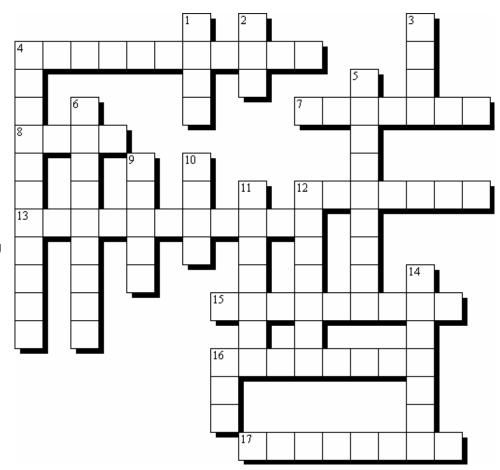


The Tropical Western Pacific (TWP) site is next to the Pacific "warm pool" – off the coast of Papua New Guinea, just north of Australia. The "warm pool" is important because it gives off heat and moisture to the atmosphere above it, forming deep convective cloud systems. These cloud systems control the amount of solar energy that reaches the earth's surface and the amount of the earth's heat energy that can escape into space. The TWP site has locations in Manus, Nauru, and Darwin, Australia.

WEATHERING THE STORM

ACROSS

- 4 This refers to the degree of hotness or coldness of a substance, as measured by a thermometer.
- **7** This loud sound is caused by rapidly expanding gases in a lightning discharge.
- **8** This kind of precipitation falls to earth in drops.
- **12** This refers to the accumulation of daily and seasonal weather events over a long period of time.



- **13** This is the study of the atmosphere and the atmosphere's interaction with the earth's surface, oceans, and life in general.
- **15** This instrument measures atmospheric pressure and looks a lot like a clock.
- **16** This is an estimate or prediction of expected future weather conditions.
- **17** This severe weather condition is characterized by low temperatures, strong winds (greater than 32 miles per hour), and a lot of snow.

DOWN

- **1** This frozen precipitation falls to the earth in the form of balls or irregular lumps if ice some pieces have been known to be the size of baseballs!
- **2** This star is the central part of our solar system; the planets revolve around it and receive light and heat from it.
- 3 This weather condition involves air in motion relative to the surface of the earth.

WEATHERING THE STORM

- **4** This instrument is used to measure temperature.
- **5** This is a severe tropical cyclone having winds in excess of 64 knots (74 miles per hour). These tropical cyclones are named; past names have included Andrew, Frances, and Jeane.
- **6** This is a visible electrical discharge produced by a thunderstorm. The discharge may occur within or between clouds, between the cloud and air, between a cloud and the ground or between the ground and a cloud.
- **9** This disturbance of the normal atmospheric conditions is often accompanied by rain, thunder, lightning, hail, snow, or sleet.
- **10** This kind of precipitation is made up of ice crystals, formed directly from the freezing of the water vapor in the air.
- **11** A small mass of air that spins rapidly about an almost vertical axis, forming a funnel cloud; it is also commonly referred to as a "twister."
- **12** A large-scale circulation of winds around a central region of low atmospheric pressure, counterclockwise in the Northern Hemisphere, clockwise in the Southern Hemisphere.
- **14** This refers to state of the atmosphere with respect to wind, temperature, cloudiness, moisture, pressure, etc.
- **16** This is actually a cloud with its base at the earth's surface; it can make it very difficult to see!



Although he was a qualified meteorologist, Hopkins ran up a terrible record of forecasting for the TV news program. He became something of a local joke when a newspaper began keeping a record of his predictions and showed that he'd been wrong almost three hundred times in a single year. That kind of notoriety was enough to get him fired.

He moved to another part of the country and applied for a similar job. One blank on the job application called for the reason for leaving his previous position. Hopkins wrote, "The climate didn't agree with me."

SOLUTIONS

Weathering Words

S C O L D U L R A I N B O W A U H H N C S N O W E T

Getting Home

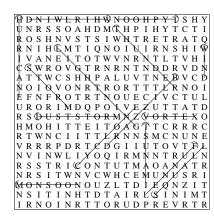
Α	_	2
В	_	3
С	_	1

Stormy Days

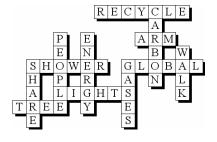
Getting to Know ARM



Extreme Weather



Feel the Heat



Wipe Out!

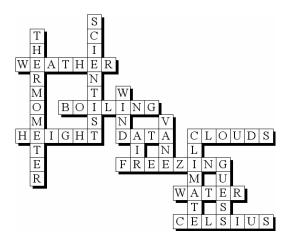
- 1. Altostratus
- 2. Altocumulus
- 3. Cirrus
- 4. Cirrocumulus
- 5. Cirrostratus
- 6. Cumulus
- 7. Fog
- 8. Nimbostratus
- 9. Stratus
- 10. Stratocumulus
- 11. Atmosphere
- 12. Troposphere
- 13. Stratosphere
- 14. Mesosphere
- 15. Thermosphere

Send in the Clouds

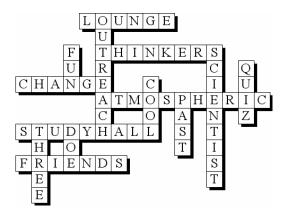
S U T A R T S) P R C R U O E E P U U U H
CHRUEESNH I SENKOICRHA
I MESOSPHEREAZOMUURØ\$
R S O H O R U C T R R H I E C T R P A D
RROCIOERION HETUDAOSU
URUT KUTAT & UEROEX HTS O
S S U T A R T S Ø T L A A H R S T R U L
HEREHSRALR CROEDROOT C
RTSISRAQOARUZ ROSOPAE
S T A O T R W R C T L A M R U U C O R R
RARCZ BAUOWYRUHLUSTE
S S P S A R S R E S M X Q S L R A P S H
AOSUHL (FOGE LAUL CCUTHOP
NOITASNEDNOOLSUCSEB\$
YTRUETRRAEHAAUOMCRMO
STOSRHSRURSOSCSPUEIM
MHUSTRAAOTUUPTMSOLVT
THERMOSPHERECERSSEWA
TUAHUEARPREAECIPKMUS
(S T R A T O C U M U L U S U E E O Y E R

SOLUTIONS

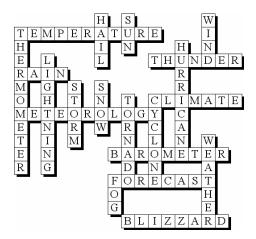
It's a Science



Study Hall Can be Fun



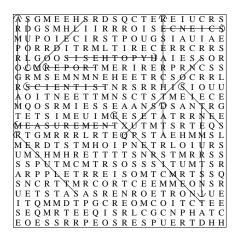
Weathering the Storm



All Mixed Up

- 1. Global warming
- 2. Greenhouse gases
- 3. Clouds
- 4. Ozone
- Ice ages
- 6. Methane
- 7. Tree rings
- 7. Tree fings
- 8. Hypothesis
- 9. Water vapor
- 10. Fossil fuels
- 11. Carbon dioxide
- 12. Reduce, reuse, and recycle!

A Scientific Find



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