

For complete lesson plans or more information on NPOESS, please visit our website at:  
[www.npoess.noaa.gov](http://www.npoess.noaa.gov)



Activities and illustrations created by Erica Handleman and Jane Whitcomb, GD Feb 07.

National Polar-orbiting Operational Environmental Satellite System



# NPOESS Activity Book



Have fun while learning about the next generation of weather satellites! This fun-filled activity book contains exciting games and puzzles as well as interesting facts.

JDW



There is a saying in New England that goes "If you don't like the weather, just wait an hour and it will change." While this is a bit of an exaggeration on most days there, it is true that the weather does change. But more than just the weather, the environment in which we live is also changing.

Satellites, circling over 800 kilometers above the earth, help us to detect and monitor weather changes; not just the changes we see daily, but also the less obvious changes to our environment. The National Polar-orbiting Operational Environmental Satellite System (NPOESS) is the future system that will provide this data.

NPOESS is a joint effort between the Department of Defense, the Department of Commerce (NOAA), and NASA. These three Government agencies have come to work together to create the next-generation weather satellite system. This future satellite system will remotely sense the environment from space. It will obtain a lot more information than the current satellites and be able to transmit that information much quicker than ever before.

In this package, we have included some games and puzzles and what we hope are fun ways to learn about satellites in general, NPOESS, and the environment.

Our goal is not only to help the students learn about these topics, but also to help make science a bit more fun and to turn you on to the wonders of the world in which we live.



# Answers

## What Type of Cloud am I?

1. Cirrus    2. Cumulus    3. Stratus

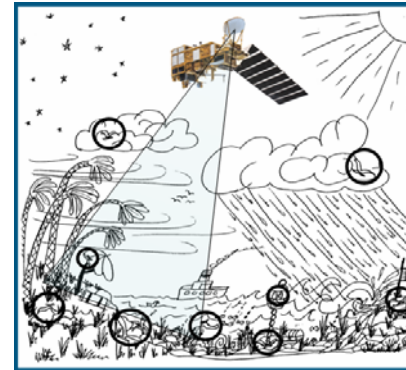
### Secret Message

NPOESS remotely senses the...  
*environment from space*

### NPOESS Jumble

1. STORM    2. LAND    3. WIND  
4. CLOUDS    5. OCEAN    6. MOISTURE

### Hidden Birds



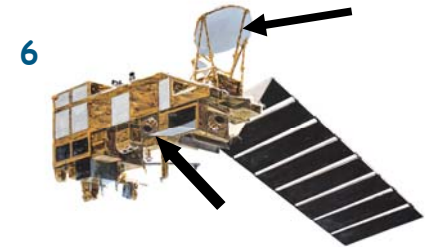
### Sudoku

4	6	7	8	2	9	3	1	5
3	8	9	1	6	5	7	4	2
2	5	1	7	4	3	6	8	9
7	4	6	5	1	2	9	3	8
1	2	5	3	9	8	4	6	7
9	3	8	6	7	4	2	5	1
5	1	4	2	3	7	8	9	6
6	9	2	4	8	1	5	7	3
8	7	3	9	5	6	1	2	4

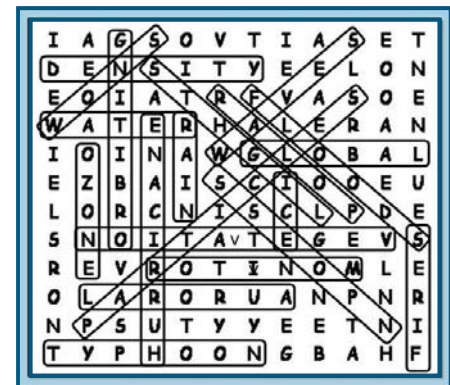
## Crossword Puzzle

- | Across          | Down           |
|-----------------|----------------|
| 3. Global       | 1. Data        |
| 4. Measurements | 2. Sensors     |
| 5. Earth        | 5. Environment |
| 6. National     | 8. Particles   |
| 7. Storm        | 11. Orbit      |
| 9. Atmosphere   |                |
| 11. Observe     |                |
| 10. Weather     |                |
| 12. Climate     |                |
| 13. Satellite   |                |

This is the NPOESS that is different



### Word Search





# What is the NPOESS Instrument Sensing?

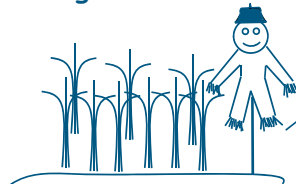
Cloud Base Height



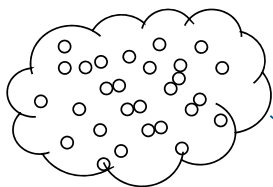
Wind Speed and Direction



Vegetation Index



Cloud Particle Size



Ocean Characteristics



MIS (Microwave Imager/Sounder) detects ocean characteristics, wind speed and wind direction.

The APS (Aerosol Polarimeter Sensor) instrument measures the amount of moisture or ice crystal formation within a cloud.

The VIIRS (Visible/Infrared Imager/Radiometer Suite) instrument will determine how deep and wide the clouds are either day or night.

VIIRS will also see how much vegetation is growing on earth.



# NPOESS JUMBLE

Unscramble the letters to create a new word

□ □ □ □ □ □

O S T M R

□ □ □ □ □ □

D A L N

□ □ □ □ □ □

N D W I

□ □ □ □ □ □ □ □

C D U S O L

□ □ □ □ □ □ □ □

N C O E A

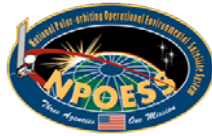
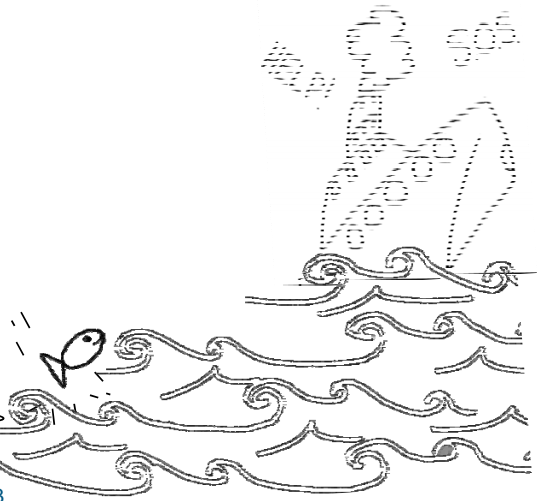
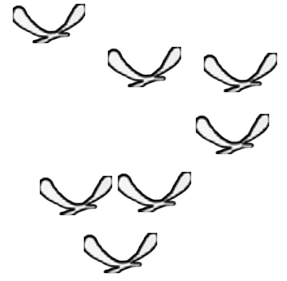
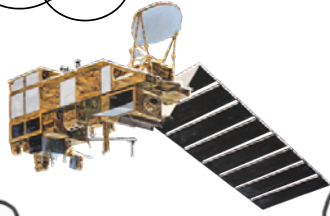
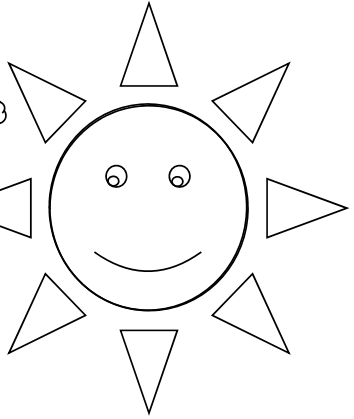
□ □ □ □ □ □ □ □ □ □

I S U E R T O M



COLOR ME!

It's a bird. It's a plane. Oh, wait, it's NPOESS!



# SODOKU

It takes excellent math skills to become an aerospace engineer and work on satellites. Math can be fun. Try to solve the puzzle below:

4		7		2		3		5
	8			6			4	
		1	7		3	6		
7			5		2			8
1	2			9			6	7
9			6		4			1
		4	2		7	8		
	9			8			7	
8	3		5			1		4

The object of this game is to place the numbers 1 to 9 in each of the empty cells so that each row, each column, and each 3X3 block contains all the numbers from one to nine.

Hint: It is possible to determine the content of a single cell by taking account of the other numbers in the row, column, and 3X3 box in which it appears. That will help you identify the only number that must appear in that cell.

Remember: Have fun and NEVER guess!





# WHAT TYPE OF CLOUD AM I?



Write the name of the cloud on the dotted line

Clouds can help forecasters tell what type of weather can be expected for the next day or two at their location. NPOESS will send images of clouds from around the world so forecasts can be made for any spot on the Earth.



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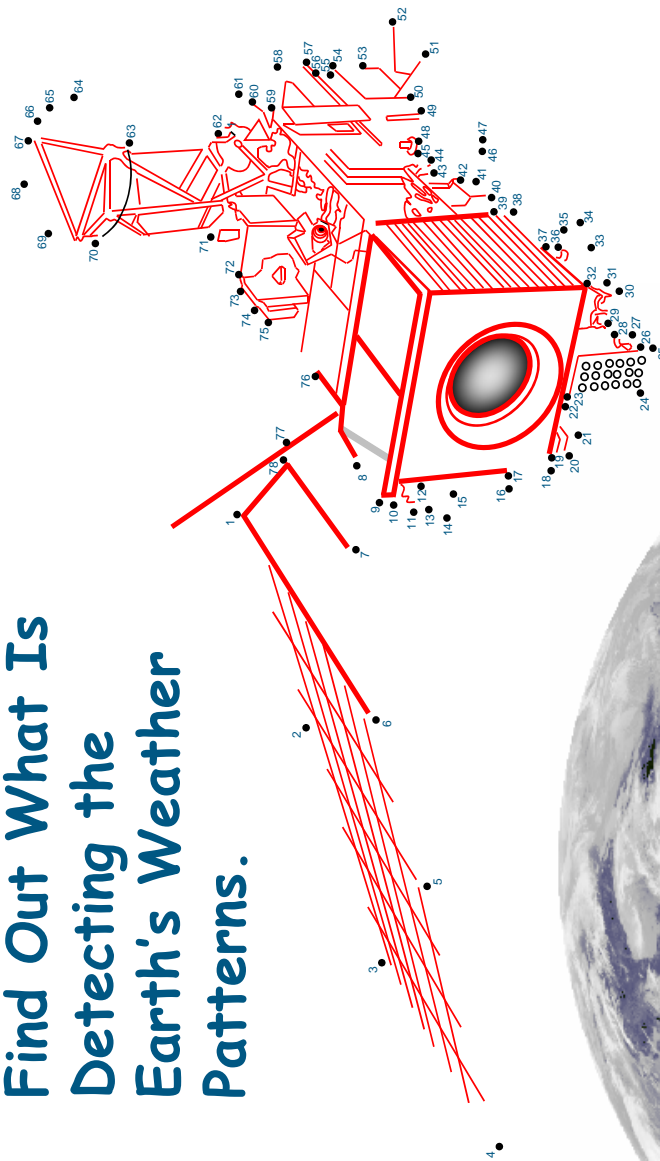
## Clouds come in three basic shapes:

Cumulus: heaped and puffy clouds

Cirrus: light, wispy clouds

Stratus: layered clouds

Connect the Dots to Find Out What Is Detecting the Earth's Weather Patterns.



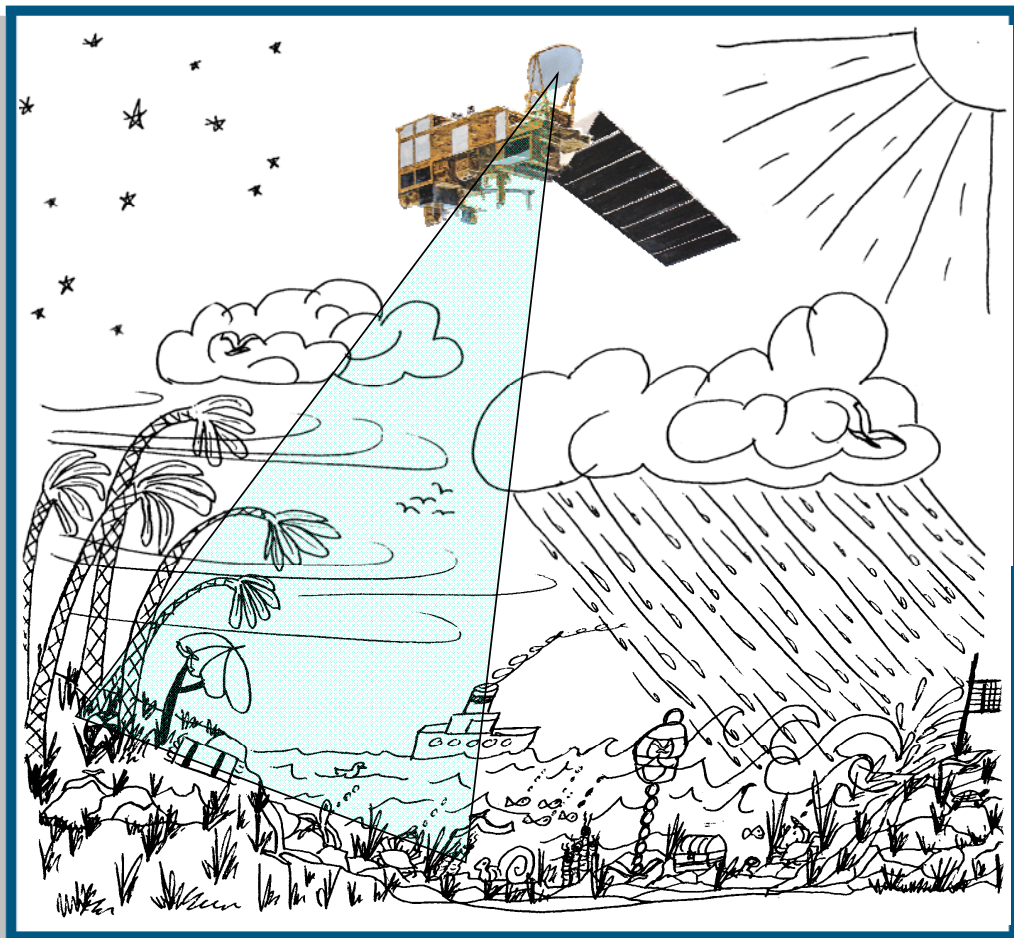


# FIND THE HIDDEN NOAA SEABIRDS



# NPOESS WORD SEARCH

NPOESS can detect all of the words in the box below. Find the words in the word search from the box below.



NPOESS will scan the environment and the earth.

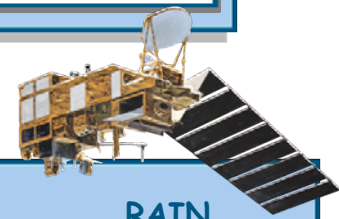
You can scan this picture with your eyes and, if you look carefully enough, you can spot 9 hidden NOAA sea birds.



## WORDS

AURORAL  
DENSITY  
FIRES  
FLOODS  
GLOBAL  
HURRICANE

ICE  
LIGHTS  
MONITOR  
NPOESS  
ORBITING  
OZONE  
PARTICLES  
POLAR



RAIN  
SNOW  
TYPHOON  
VEGETATION  
WATER  
WAVES

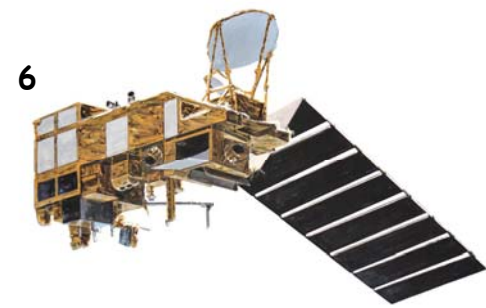
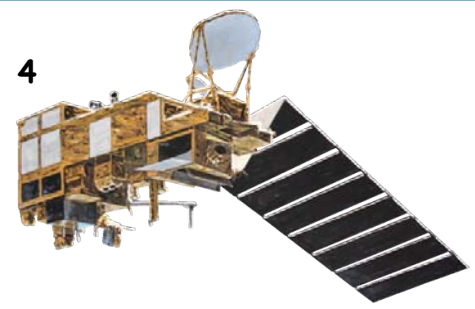


# FIND THE NPOESS THAT'S DIFFERENT FROM THE REST



# NPOESS CRYPTOGRAM

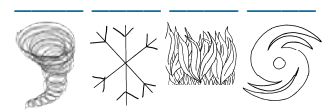
Use the Chart Below to Decode the Secret Message



A	C	E	F	I	M	N
O	P	R	S	T	V	

Write the letters below the matching symbol to find the secret message.

## NPOESS REMOTELY SENSES THE ...



Get Stuck? The answer can be found on page 14

8 Get Stuck? Answers can be found on page 14