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.
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 Operation 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.
What is the NPOESS Instrument Sensing?

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.

Cloud Base Height

Wind Speed and Direction

Vegetation Index

Cloud Particle Size

NPOESS JUMBLE

Unscramble the letters to create a new word

OSTMR

DALN

NDWI

CDUSOL

NCOEA

ISUERTOM

Get Stuck? Answers can be found on page 14
It's a bird. It's a plane. Oh, wait, it's NPOESS!

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!

Get Stuck? Answers can be found on page 14
NPOESS CROSSWORD PUZZLE

ACROSS
3. AROUND THE TOTAL EARTH
4. WHEN COOKING, YOU USE _______ TO DETERMINE HOW MUCH INGREDIENTS GO INTO THE BOWL
5. WE LIVE ON PLANET_______
6. THE _______ ANTHEM
7. RAIN AND LIGHTNING ARE PARTS OF A_______
8. AIR AROUND THE EARTH
9. STORMS, RAIN, SNOW, AND WIND ARE DIFFERENT TYPES OF_______
10. TO STUDY AND LOOK OVER SOMETHING
11. WEATHER CONDITIONS IN A PARTICULAR REGION OVER A PERIOD OF TIME
12. _______ DISH FOR TELEVISION RECEPTION

DOWN
1. NUMBERS USED FOR WEATHER PREDICTIONS
2. BUG’S ANTENNAE ARE USED AS_______
3. THE SOIL, CLIMATE, AND LIVING THINGS ARE ALL PART OF OUR_______
4. A VERY SMALL PART OF MATTER SUCH AS MOLECULES OR ATOMS
5. THE EARTH CIRCLING AROUND THE SUN IS AN EXAMPLE OF WHAT

Get Stuck? Answers can be found on page 14

ICEBERG MAZE

NPOESS VIIRS and MIS instruments can identify sea ice breaking away to form icebergs. Help the NPOESS locate the newly-formed iceberg by maneuvering through the maze.
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.

1.)

2.)

3.)

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.

1. __________
2. __________
3. __________
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.

FIND THE HIDDEN NOAA SEABIRDS

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

WORDS

AURORAL
DENSITY
FIRES
FLOODS
GLOBAL
HURRICANE
ICE LIGHTS
MONITOR
NPOESS ORBITING
OZONE PARTICLES
POLAR
RAIN SNOW
TYphoon VEGETATION
WATER WAVES

Get Stuck? Answers can be found on page 14
Find the NPOESS that's different from the rest.

NPOESS CRYPTOGRAM

Use the chart below to decode the secret message.

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