

# Layers of the Atmosphere Foldable

Name \_\_\_\_\_ Class \_\_\_\_\_

1. Fold a piece of light blue paper in half hamburger bun-style.
2. Open flat and then fold each side toward the center fold - shutter-style.



3. Color the long dark lines that represent temperatures changes: from the bottom -- blue, red, blue, red, representing decreasing, increasing, decreasing, increasing temperatures.
4. Carefully cut out the diagram of the atmosphere. Fold in half lengthwise and cut apart. Paste each half onto the front shutters of the light blue paper. Paste toward the bottom so you have room for a title at the top.
5. Cut the two parts of the title out and paste on the top of the shutters.
6. Cut out the boxes that contain the characteristics of each of the eight layers of the atmosphere. Paste inside the foldable under the correct layer. Be sure to put the main layers on the inside left and the minor layers on the inside right.
7. Cut flaps for each of the layers on the front shutters.
8. Carefully cut out the small sketches **ONE AT A TIME**. Read the words that tell you where to paste the sketch and paste to the front of the foldable on the diagram of the atmosphere. **Do NOT cut out the words that tell you where to paste each sketch!**
9. Fill in the Name Tag and paste on the back.

## **\*\*Answer these questions:**

1. List the four main layers.
2. List the four minor layers.
3. Which two minor layers of parts of a main layer?
4. Which layer is the most important to you and why?
5. What two layers protect you?
6. Which layer acts like a giant magnet? What does it attract?
7. What does the air in the troposphere do as it heats up from the sun?
8. What cloud indicates the top of the troposphere?
9. What runs along the top of the troposphere?
10. What attaches itself to this jet stream and, in a sense, tells you where the stratosphere begins?

Blackbird SR-70  
26 km



Boeing 747  
12 km



Balloon  
5-7 km



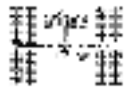
Ozone molecules  
20-30 km



Aurora Borealis  
100-250 km



Intl. Space Station  
300 km



Flock of Geese  
6-7 km



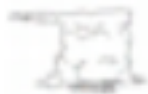
Weather  
near the surface



Cirrus Clouds  
16 km



Cumulonimbus  
up to 16 km



Radio Waves  
96-112 km



Meteors  
48-80 km



Unmanned Spacecraft  
3000 km



### TROPOSPHERE

Temperature: DECREASES, 6.5 °C per km  
Characteristics: to about -60 °C

1. Most weather occurs here where we live
2. Convection Currents

### STRATOSPHERE

Temperature: INCREASES, to about -20 °C  
Characteristics:

1. Contains most of atmosphere's ozone
2. Where jets and manned balloons have gone

### MESOSPHERE

Temperature: DECREASES, -100 °C at top  
Characteristics:

1. Protects Earth from meteors
2. Coldest region of atmosphere

### THERMOSPHERE

Temperature: INCREASES, 2,000 °C at top  
Characteristics:

1. Temps get up to 2000 °C
2. Air molecules are 1 km apart!

### OZONOSPHERE

Characteristics:

1. Ozone is made of 3 oxygen atoms
2. Protects the surface from Sun's UV rays
3. Humans are causing Ozone depletion

### IONOSPHERE

Characteristics:

1. Lower part of Thermosphere
2. Radio waves bounce back to Earth's surface

### EXOSPHERE

Characteristics:

1. Upper part of Thermosphere
2. Artificial Satellites orbit here

### MAGNETOSPHERE

Characteristics:

1. Earth's Magnetic Field
2. Causes Aurora Borealis (Northern Lights)

# Layers of the

# Atmosphere

Name \_\_\_\_\_

Class \_\_\_\_\_

Date \_\_\_\_\_

