



Topic/Objective CHAPTER: 11

NAME:

Layers of Atmosphere

Pd: 1 2 4 5 other

DATE

10/5

Essential Question

What are the ^{layers} ~~Atmosphere~~ of atmosphere?

Cue: Review:
Thoughts: Main idea

NOTE Taking AREA:

Video

Earth's Atmosphere by Veronica Kimes

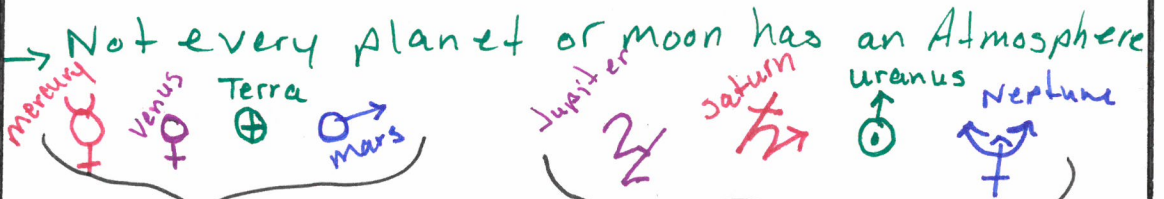
→ Sphere is a 3-D object i.e. a Ball
Not a circle

→ Atmo is Air or Gases; mixture of
↳ see previous notes

Atmosphere

→ is a layer of gases that surround
a planet or moon

Planets



Inner Planets
Terrestrial Planets
Rocky Surface

outer planets
Jovian Planets
Gases / Icy Surface

No. Atmo.

♀ = is the only planet w/ an Atmosphere... BUT

No Atmo.

♁^(moon) = Luna has No Atmosphere

Layers of

- has 4 layers (some books say 5 some say 6)

⊕ Atmosphere



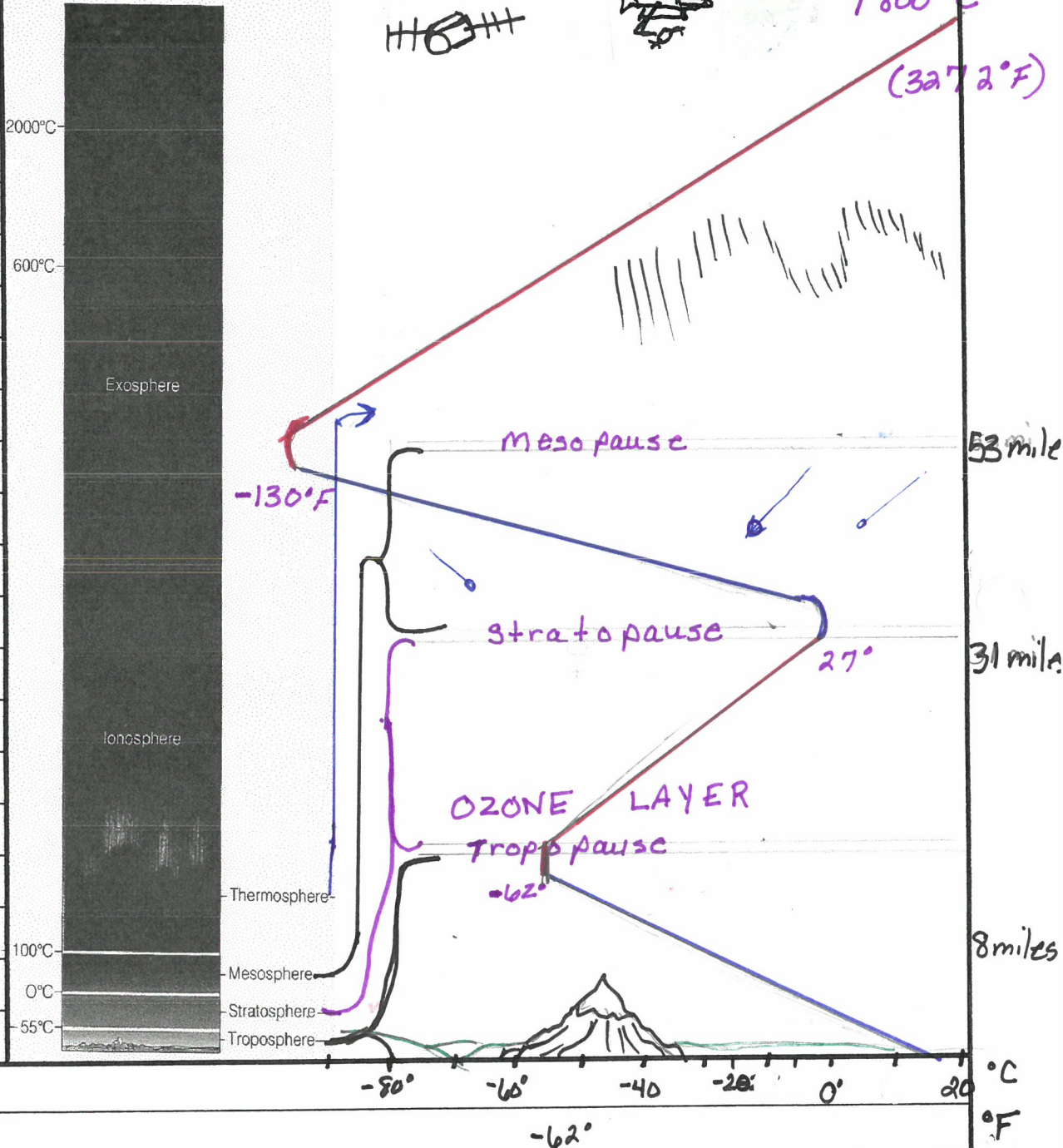
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Cue: Review:
Thoughts: Main Idea

NOTE Taking AREA:
Temperature Layers



SUMMARY:

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Layers of
Atmo.

Pd: 1 2 4 5 other

DATE

2 of 5

Essential Question

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Thoughts: Main Idea
video

NOTE Taking AREA: *Earth's Atmosphere by Veronica Kimes*

Troposphere
we live here

→ Layer we live in (All life is in)
→ Lowest layer to the surface
→ 75% (85%) of the atmosphere is located here.

All Weather

→ All weather takes place here

Temperature

→ temp changes a lot in this layer But decreases to -62°F (-52°C)

Altitude

→ This layer extends about 3-8 miles (8-12 km) above the surface.
→ beyond this layer it is difficult to breathe because the air is getting thinner. e.g. → Denver, Co. 1 mile high.

Tropopause

→ The boundary b/t the lowest layer and the layer above it.
→ about 3-8 miles (8-12 km) above the surface.



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Thoughts: Main Idea

NOTE Taking AREA:

Stratosphere → layer above the Troposphere

Temp

→ in this layer, Temp. increases as you go higher

↳ due to the Ozone layer

Ozone layer

→ The Ozone layer is here which helps warm this layer

→ See Notes on OZONE

Jet Stream

→ is also here (in Stratosphere)
↳ Airplanes fly here (Big Jets) which helps them travel faster

→ boundary between (Stratosphere) and where the next layer begins
↳ 31 miles above the surface (50 km)

SUMMARY:



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Essential Question

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NOTE Taking AREA:

Mesosphere

→ here the temperature drops from -3°C to -90°C making it the coldest layer
(27°F to -130°F)

↳ this drop is b/c the ozone layer is no longer around to heat it up.

Temp

→ b/c of the cold temperature, ICE crystals can be found in this layer.

Why does this protect us?

→ these "ICE CRYSTALS" help protect ⊕ from meteors & space junk

→ They collide w/ crystals which creates friction & heats them up

→ Leaving a trail of hot glowing gases in the atmosphere

Shooting stars

→ These "trails" are called shooting stars & see other side

↳ they are not stars falling but are meteors or space debris

~~Nitrogen~~
Reddish

~~Calcium~~
Blue/purple

~~Magnesium~~
pale blue

~~Iron~~
Yellowish

~~Sodium~~
tan/brown

→ boundary b/t the end of this layer and the next ↳ 53 miles (85km) above the surface

NOTES CONTINUE ON OTHER SIDE



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Cue: Review:
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NOTE Taking AREA:

Rocks From Space

Meteors

a shooting \star is really a rock which Burns up as it enters the Atmosphere

Meteoroids

a Rock (Rx) that is floating or moving in space is called a meteoroid
 \hookrightarrow is like an asteroid... Rock floating in space

Meteorite

\hookrightarrow IF the meteor hits the surface then we call it a meteorite
 \hookrightarrow meaning you can pick it up right Now

Thermosphere

Temp

\hookrightarrow Thermo meaning "HEAT" or "Hot"
 \hookrightarrow Largest layer
 \hookrightarrow Temperature increases from -90°C (-330°F) to over $+1800^{\circ}\text{C}$ (3272°F)
 \hookrightarrow Air is SO thin you need a space suit

layer

before Space

\hookrightarrow The last layer before space

\hookrightarrow There is **NO** clear boundary b/t Thermosphere and **OUTER SPACE**

SUMMARY:

2 groups

\hookrightarrow That is known as **EXOSPHERE**
 \hookrightarrow w/ the Thermosphere is another layer known as the **IONOSPHERE**

(cont.)



Essential Question

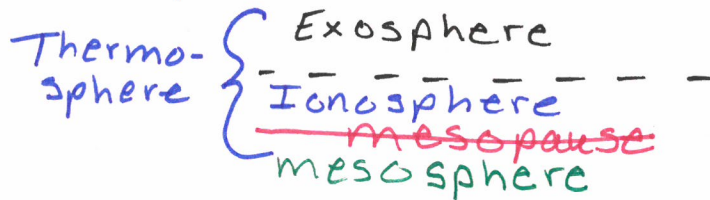
Cue: Review:
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NOTE Taking AREA:

* Now we have a problem *

Thermosphere

Hottest layer due to Ionosphere
Some books Do Not recognize this layer as Exosphere w/ Ionosphere
But say Thermosphere is divided into 2 layers



Ionosphere

↳ is a layer which electrical charged particles called: "Ions" exist.
↳ Ions are from the ☉ (sun)
↳ see Chemistry Notes

↳ Ions - when they enter our Atmosphere create the Aurora Borealis

Aurora Borealis

→ A.K.A. The Northern Lights
↳ Ions enter our Atmosphere, striking particles, and heat up and begin to glow.

Radiowaves

↳ Also in the Ionosphere, radio waves (signals) are bounced around or off this layer



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NOTE Taking AREA:

Exosphere

→ here is where satellites exist
→ Also the I.S.S. (International Space Station)
→ Rockets (space shuttle once flew) go.

SUMMARY:



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Essential Question

50/5

Video Review

Cue: Review:

Thoughts: Main Idea

Video

NOTE Taking AREA:

Earth's Atmosphere - video ?'s

1.

Layers of Atmosphere are broken into 4 sections Based on what?

- a) distance from Earth's surface
- b) Amount of oxygen
- c) change in Air temperature
- d) by how they would fare in a flight

2.

Why does the moon have so many craters?

- a) the moon has less gravity than the planet Earth.
- b) The m has NO atmosphere to protect it from meteors or debris.
- c) The m 's orbit travels into a meteor hot spot.
- d) Let's face facts; the m has really slow release.

3.

Which layer of Atmosphere contains the Ozone Layer?

- a) the Thermosphere
- b) the Stratosphere
- c) The mesosphere
- d) The Troposphere

NOTES CONTINUE ON OTHER SIDE

1. C 2. B 3. B

Key



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SUMMARY:

[Lined area for writing the summary]