

8th Grade AMI Packet

#14



AMF Day 14

Write these rules twice!

SAME BASES

* Multiplying Powers

(ADD exponents)

$$10^4 \cdot 10^3 = 10^7$$

$10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 =$ Seven 10's total

* Powers of Powers

(MULTIPLY exponents)

$$(10^2)^3 = 10^6$$

$(10 \cdot 10)(10 \cdot 10)(10 \cdot 10)$
10 10 3 times total of 6

* Dividing Powers

(SUBTRACT exponents)

$$\frac{10^5}{10^3} = 10^2$$

$10 \cdot 10 \cdot 10 \cdot 10 \cdot 10$
 $10 \cdot 10 \cdot 10$
only 10 10 left

* Negative Exponents

follows above rules except re-written as a fraction w/ a numerator of one.

$$10^{-7} \cdot 10^3 = 10^{-4} \rightarrow \frac{1}{10^4} \text{ (so 4 becomes positive when written as a fraction)}$$

(remember add so $-7 + 3 = -4$)

1. Write with a single exponent:

a. $\frac{7^6}{7^2}$

g. $(0.173)^9 \cdot (0.173)^2$

b. $(11^4)^5$

h. $\frac{0.87^5}{0.87^3}$

c. $4^2 \cdot 4^6$

i. $\frac{(\frac{5}{2})^8}{(\frac{5}{2})^6}$

d. $6 \cdot 6^8$

e. $(12^2)^7$

f. $\frac{3^{10}}{3}$

Work Space:

More on Back →

Write as a
Single
exponent

a. $7^5 \cdot 7^6$

e. $\frac{3^5}{3^{28}}$

i. $(7^2)^3$

b. $3^{-3} \cdot 3^8$

f. $\frac{2^{-5}}{2^4}$

j. $(4^3)^{-3}$

c. $2^{-4} \cdot 2^{-3}$

g. $\frac{6^5}{6^{-8}}$

k. $(2^{-8})^{-4}$

d. $(\frac{5}{6})^4 (\frac{5}{6})^5$

h. $\frac{10^{-12}}{10^{-20}}$

l. $(6^{-3})^5$

The Breakaway

As far as Justin knew, there was only one way out of his neighborhood: basketball. So he ran with the ball like the hounds were chasing him. He could drop any of the older guys at the court in a blaze of crossovers, fadeaways, and finger rolls, and the younger guys didn't stand a chance. Justin saw his way out and he ran for it. But the world has a funny way of changing right when you think you've got things figured out, and that's just what happened to Justin.

One day when Justin was shooting around at the local court, some guys from another block ran up and asked to play. The big one in the middle said that he had heard that Justin was the best and he wanted to see if it was true. Justin said, "Nah, Man, I'm just shooting around with my cousin, I ain't trying to get all sweaty right now." But the big guy was insistent, and Justin's cousin was bugging, "C'mon, Justin, drop this guy." So Justin figured that he'd just do what everyone wanted and play.

Justin was running all over the big guy and making his shots while he did it. But just as the outcome of the game seemed certain, the big guy shoved Justin as he went for a lay up. Justin went flying in just such a way that he managed to tear up his right knee. The doctor said Justin might never play again, and if he did play, he wouldn't play the same. Justin was devastated.

The first six weeks, Justin just laid in bed with his leg in a long cast feeling like a broomstick. He watched three reruns of *The Simpsons* every day and ate potato chips until the bag was empty, and then he'd dig the salt and grease out of the corner with his index finger. Justin blew up like a balloon as he watched his once bright future fade away. Right when he reached the bottom of the pit of despair, Justin's sister, Kiki came home from the university

She came in the house like a whirl of sunshine, bringing exciting tales of a far away land called college. Justin was amazed and intrigued by the dorm room dramas and campus craziness that Kiki told, but he could hardly believe any of it. It was as if she were telling him about some fantasy land high above the clouds. Justin gazed off dreamily as she spoke.

"Justin!" She interrupted his day dream. "Let me see your progress report." Justin was ashamed. His grades had really slumped since his injury. "Oh no, this won't do, J," she said. "We're going to have to get these up." Well, Justin was a pretty stubborn guy, but his older sister had a way of getting him to do things that nobody else could. So, while she was home on break, they studied together, and they talked, and they worked, and Justin felt better than he ever had before.

After spending those weeks with his sister, Justin realized that he didn't want to feel bad for himself any more, and he didn't want to quit. Basketball used to be his thing, and he was good at it, but now there was only school, so he had to get good at that. Justin passed through all his classes like a half-court trap. By the time he got to senior year in high school, his GPA was hovering in the slam-dunk position. The last thing that Justin had to do to get into the college of his choice was score well on the ACT. Well wouldn't you know it? Using the study skills Justin had acquired from his sister, Justin scored a 24 on the ACT. That's not the highest score a person can get, but it was high enough for Justin. Now he had his academic game together.

Though the recruiters never came to Justin's door, every university that he applied to accepted him; and when the fall came, Justin had his choice in colleges. Though he'd miss his family, Justin decided to enroll in the sunniest university in Hawaii, and nobody could say that Justin made a bad choice.

“The Breakaway” - Reading Skill Sheet

1. Author's Purpose: **entertain** **inform** **persuade**
Why did the author write this?

2. Genre: _____ Subgenre: _____
Ex: Nonfiction, fiction, or folklore Ex: Autobiography, science fiction, fable, informational writing, etc.

3. Narrator's Point of View: _____
1st-person, 2nd-person, 3rd-person objective, 3rd-person limited, or 3rd-person omniscient

4 & 5. Summarize the text:
Five key events from beginning, middle, & end.

6. Exposition

A. Setting: _____
When and where does the story take place?

B. Conflict: _____
Describe the conflict in the story.

7. Rising Action: List some events that occur before the climax.

1. _____
2. _____
3. _____

Climax:
The turning point

Falling Action: List some events that occur after the climax.

1. _____
2. _____

Resolution:
When the conflict is solved

Name: _____

Date: _____

■ Electromagnetic Spectrum Reading Passage

Day 14

ELECTROMAGNETIC SPECTRUM

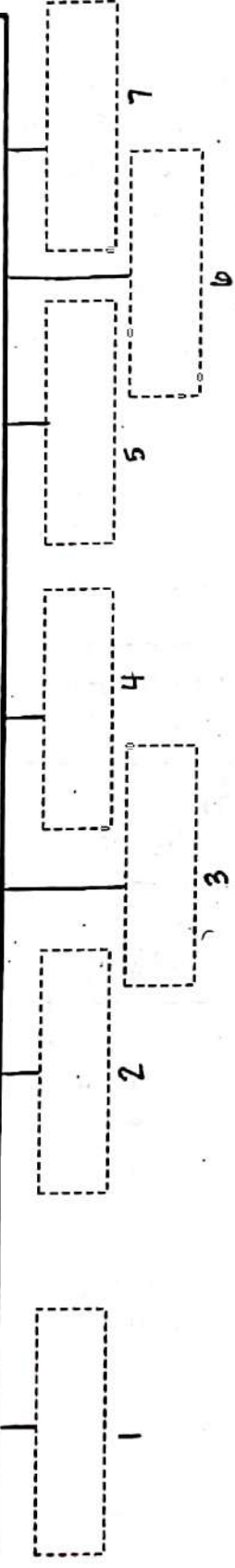
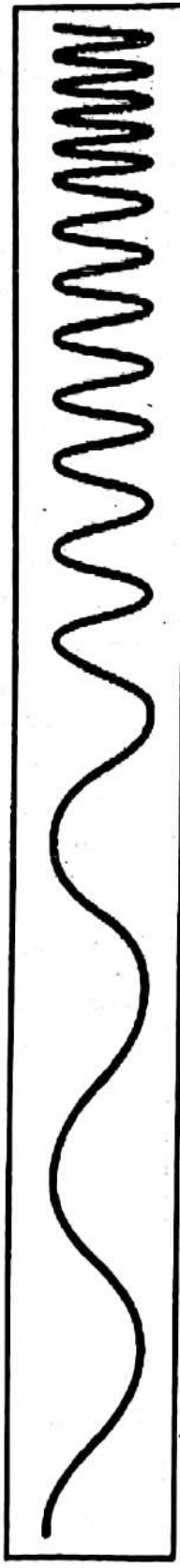
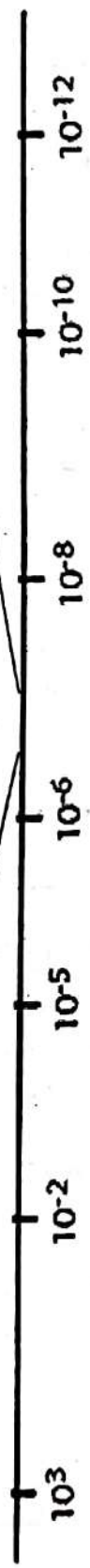
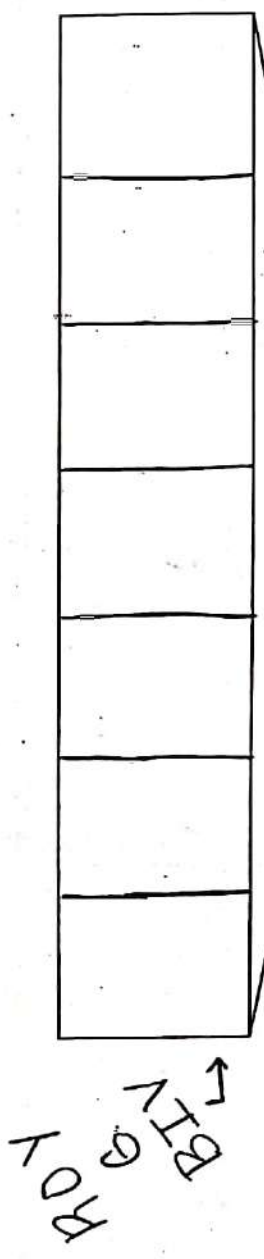
Different types of electromagnetic waves make up the **electromagnetic spectrum**. The electromagnetic spectrum is continuous. It is a range of electromagnetic waves with different wavelengths and frequencies. Different types of electromagnetic waves oscillate at different rates. The rate determines the frequency and wavelength of each type of EM wave. The faster the wave oscillates, the higher the frequency. As the frequency of an EM wave increases, the wavelength of an EM wave decreases. As the frequency of an EM wave increases, the energy carried by EM wave increases.

There are eight major types of electromagnetic waves, summarized in the table below.

Type	Wavelength	Frequency	Uses
Long Radio Waves	> 1,000 meters	$< 3.0 \times 10^5$ Hz	Aeronautical & marine navigation, Morse Code
Radio Waves	1 m to 1,000 m	3.0×10^5 Hz to 3.0×10^9 Hz	Radio & TV broadcasting, radar, naturally made by lightning & stars
Microwaves	1 mm to 1 m	3×10^9 Hz to 3×10^{12} Hz	WiFi, cellphones, GPS, air traffic control, weather forecasting, cooking
Infrared (IR)	700 nm to 1 mm	3.0×10^{12} Hz to 4.3×10^{15} Hz	Associated with thermal energy
Visible Light	700 nm (red) to 380 nm (violet)	4.3×10^{15} Hz to 7.9×10^{15} Hz	Made of seven colors: red, orange, yellow, green, blue, indigo, violet
Ultraviolet Light (UV)	380 nm to 10 nm	7.9×10^{15} Hz to 3.0×10^{16} Hz	Promotes vitamin D production in skin, overexposure damages skin & eyes
X-Rays	10 nm to .01 nm	3.0×10^{16} Hz to 3.0×10^{18} Hz	Medical imaging, airport security, overexposure can damage cells
Gamma Rays	< .01nm	$> 3.0 \times 10^{18}$ Hz	Produced during radioactive decay, can cause radiation poisoning

ELECTROMAGNETIC SPECTRUM: Using page 3 of the Waves Notes provided, you may either fill in the blanks using the vocab terms OR cut out and glue/tape the vocab terms in the proper location on the EMS. If you have colors/colored pencils/markers, color the visible light spectrum with the proper order of color wavelengths.

Day 14



- Microwaves
- Infrared
- Visible Light
- Radio waves
- Gamma Rays
- X Rays
- Ultraviolet

8th Grade Arkansas History AMI Day 14 (4/13/2020)

Directions: Use the reading passage on the next page to answer the following questions. The questions go in order with the passage. You do not have to write in complete sentences, but make sure you thoroughly answer each question.

Questions from Race Relations and Segregation

1. How did most whites continue to treat African Americans following the end of slavery?
2. How did whites frequently react to black aspirations in rural areas? How did whites respond in towns and cities?
3. What did the 1890 Democratic candidate for governor, James P. Eagle, campaign on?
4. What was the first of numerous measures that formally segregated the races in all public spaces?

Questions from Toward the Twentieth Century

5. What was a major symbol of the state's integration into the wider nation?
6. Fill-in-the-blank: _____ increased for some people, but at the same time, the new economy added to the _____ of the _____.
7. Why had race relations worsened?

Post-Reconstruction through the Gilded Age, 1875 through 1900

Race Relations and Segregation

Supporters of the election law took advantage of another important characteristic distinguishing this era. In Arkansas, as well as throughout the rest of the South, race relations were altered as a result of broader social changes. Most whites had continued to treat African Americans as inferiors following the end of slavery, and the races lived in informally segregated worlds. Still, as free people, black citizens had secured political and civil rights along with opportunities to improve themselves. In towns, the rise of a black middle class presented an increasing challenge to existing relationships. Wiley Jones of Pine Bluff, John E. Bush, founder of the Mosaic Templars of America, and Mifflin W. Gibbs, prominent Little Rock attorney, all represented this prosperous class. Even in the countryside, some black farmers such as Scott Bond of Madison (St. Francis County) and Pickens Black of Jackson County achieved financial success, as did an entire community of black landholders at Meniffee (Conway County). By the 1880s, such men were able to pay for better accommodations on the state's railroads and in hotels, theaters, and other public venues, and they wanted equal access. In the countryside, black workers continued to protest unfair treatment, including participating in the various farm movements that challenged Democratic rule.

Frequently, whites reacted to black aspirations with violence. In rural areas, they tried to drive African Americans off of their land. In the towns and cities, whites responded with an increasing demand for a more formal separation of the races and the exclusion of black citizens from whites' facilities. Contemporary development of scientific theories of inherent racial differences provided support for their arguments, and by the middle of the 1880s, Arkansas's white newspapers increasingly referred to African Americans as racially inferior and demanded formal segregation.

Racist arguments helped secure passage of the 1891 election law, but they also set up the creation of laws systematically separating the races. In 1890, the Democratic candidate for governor, James P. Eagle, campaigned on a promise not only to change the election laws but also to support laws requiring railroads to provide separate coaches for black passengers. The popularity of the issue among whites was clear. Eagle won, and in February 1891, the legislature passed a "Separate Coach" law. This was only the first of numerous measures that formally segregated the races in all public spaces. Leaders in the black community protested these efforts, but because they were excluded from political power by changing election laws, their voices remained largely unheard in the rush to create a segregated society during these years. These measures established the character of race relations in the state until the middle of the next century.

Toward the Twentieth Century

Arkansans ended the nineteenth century in a world that differed from that existing at the end of Reconstruction. A major symbol of the state's integration into the wider nation was its participation in the Spanish-American War, with two regiments of Arkansas troops in the service of the United States. The war marked a final reconciliation of not only Arkansas but all of the former Confederate states with their northern neighbors as Southern and Northern boys fought together again. At the same time, the changes of this era brought about by closer ties with the rest of the country produced their own unique results for Arkansas. Prosperity increased for some people, but at the same time, the new economy added to the grinding poverty of the farm. Urbanites participated to a much greater degree in the success and culture of the nation, yet during the same period, those in the countryside found themselves left behind. Race relations worsened as whites moved toward the creation of a segregated society. By 1900, the economic and social differences that set apart economic regions from each other, town dwellers from those in the countryside, and African Americans from whites were well-established and would dominate the life of Arkansas for years to come.

Source: <https://encyclopediaofarkansas.net/entries/post-reconstruction-through-the-gilded-age-1875-through-1900-402/>