SCIENCE 8 – MIRRORS WORKSHEET

NAME: KEY

Vocabulary			
~~Behind~~	~~Convex mirror~~	~~Images~~	~~Reflect~~
~~Concave mirror~~	~~Diverging~~	~~In front~~	~~Upright~~
~~Converging~~	~~Focal point~~	~~Plane mirror~~	~~Upside down~~

Use your notes from pages 15 – 18 and the terms in the vocabulary box to fill in the blanks for the following nine questions. You will not need to use every term.

1) All mirrors Reflect light.

2) There are three types of mirrors. All three types reflect light rays to form Images.

3) A Plane is a mirror that is flat and smooth. It produces an image that is the same size as the object and appears to be the same distance from the mirror as the object.

4) A Concave mirror is a mirror that curves inward. The image formed by this type of mirror depends on how far away the object is from the Focal point.

5) Light rays that come together at a focal point are described as Converging.

6) If the object is far from the concave mirror, its image is small and upside down.

7) If the object is close to a concave mirror, then the image appears to be larger than the object and is Upright.

8) A Convex is a mirror that curves outwards. It reflects parallel light rays as if they came from a focal point behind the mirror.

9) Light rays that spread apart after reflecting are described as Diverging.

10) Match each **Term** on the left with the best **Descriptor** on the right. Each **Descriptor** may be used only once

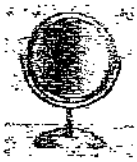
	Term		Descriptor
C	Diverging	A.	Coming together
A	Converging	B.	Curves inwards
D	Plane mirror	C.	Spreading apart
E	Convex mirror	D.	Is smooth and flat
B	Concave mirror	E.	Curves outwards

11) Identify the type of mirror (plane, convex or concave) used in each situation below. Write your answer on the line provided.

Make-up mirror

plane

Jeweller's mirror



Concave

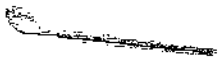
Full-length mirror

plane

Car side-view mirror

Convex

Dental mirror



Concave

Mirror in flashlight

Concave

Car rear-view mirror

Convex

Surface of a lake

plane

Store security mirror

Convex

Shaving mirror

plane / Concave

Use the following information to answer questions 12 – 14

I.	Plane mirror
II.	Convex mirror
III.	Concave mirror

12) Which mirror(s) can be used to produce an upright image? ~~mirr~~ plane

13) Which mirror(s) can be used to make you look taller? Concave

14) Which mirror(s) can be used to make you look smaller? Convex

Regents Physics Name KEY

Waves & Electromagnetic Spectrum Worksheet

Directions: Use the word bank to answer the following questions. **Each word will be used only once.**

Crest	Frequency	Mechanical	Infrared
Trough	Transverse	Radio	Gamma
Wavelength	Longitudinal	Ultraviolet	X-Rays
Visible Light	Amplitude	Electromagnetic	

1. X-ray waves are used to penetrate solids and are used in doctor's offices and as airports.

2. Wavelength is the distance between one point of a wave to the same point in the next wave.

3. Frequency is the number of waves per unit of time.

4. longitudinal waves occur when the motion of the medium is parallel to the direction of the wave.

5. Visible light waves have a color spectrum known as ROYGBIV.

6. Mechanical waves disturb matter.

7. The Crest is the top of a wave.

8. The Trough is the bottom of a wave.

9. Amplitude is the maximum distance that matter is displaced from the resting position.

10. Electromagnetic waves are produced by stars and galaxies.

11. Transverse waves occur when the motion of the medium is at right angles (perpendicular) to the direction of the wave.

12. Infrared waves are often used in heat lamps.

13. Ultraviolet waves are utilized by insects to locate nectar.

14. Radio waves are transverse waves that disturb electromagnetic fields.

15. GAMMA waves have the shortest wavelength and the highest frequency.

Name _____ Period _____

Electromagnetic Spectrum Worksheet #1

1. In each of the following pairs, circle the form of radiation with the LONGER WAVELENGTH:

   a. red light or blue light
   b. microwaves or radiowaves
   c. infrared radiation or red light
   d. gamma rays or UV radiation

2. In each of the following pairs, circle the form of radiation with the GREATER FREQUENCY:

   a. yellow light or green light
   b. x-rays or gamma rays
   c. UV radiation or violet light
   d. AM radio waves or FM radio waves

3. In each of the following pairs, circle the form of radiation with the LOWER ENERGY:

   a. red light or blue light
   b. microwaves or radiowaves
   c. infrared radiation or red light
   d. gamma rays or UV radiation
   e. yellow light or green light
   f. x-rays or gamma rays
   g. UV radiation or violet light
   h. AM radio waves or FM radio waves

4. Springfield's "Classic Rock" radio station broadcasts at a frequency of 102.1 MHz. What is the length of the radio wave in meters?

5. A beam of light has a wavelength of 506 nanometers. What is the frequency of the light? What color is the light?

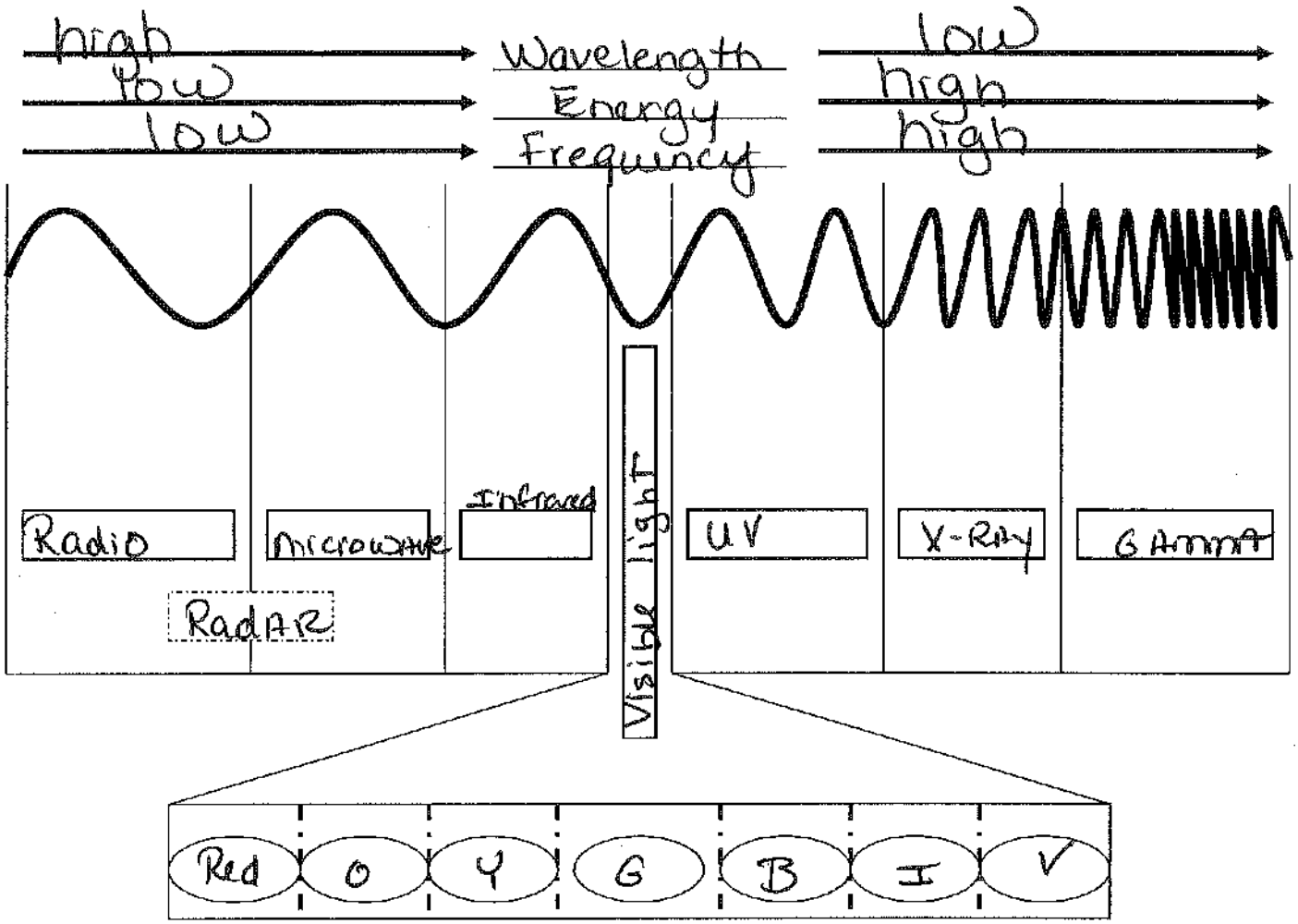
6. Blue light has a frequency of 6.98×10^{14} Hertz. Calculate the wavelength of blue light in nanometers.

KEY

Study Guide for Chapter 18 and 19

Electromagnetic Waves and Mirrors

1. Label the different parts of the electromagnetic spectrum. On the arrows tell me where you would find high and low frequency, high or low energy, and high or low wavelength.



2. Explain what we use each part of the spectrum for.

Gamma Rays: Kill cancer cells

X-rays: Dr office & Airports

Ultra Violet: Tan

Infrared: Keeps food warms

Microwave: phones,

Radiowave: TV & Radios

3. How does Light act like?

Photons acts like a wave

4. How do electromagnetic waves vary?

By frequency.

5. How do x-ray photographs show softer tissue? ~~The~~ Rays Pass through to form an image. Ray that Pass through form an image on the photographic plate.

6. Describe the difference between translucent, opaque, and transparent materials.

Translucent: ~~Reflect some light~~ Scatter some light

Opaque: ~~Reflect most light Scatter it~~ Scatter all light

Transparent: ~~most light gets through~~ does Not scatter light

7. What is white sunlight made of? ~~*~~ All Colors of visible spectrum

8. When light goes through a prism, the colors in sunlight undergo? ~~Refraction~~ / Dispersion *

9. Explain the law of Reflection and include angle of incidence in your description.

angle on incidence = angle of reflection

Draw the three types of Mirror and label them.

| ( )

Plane Convex Concave

10. Explain the difference between a virtual image and a real image. Real Image can be viewed on a screen

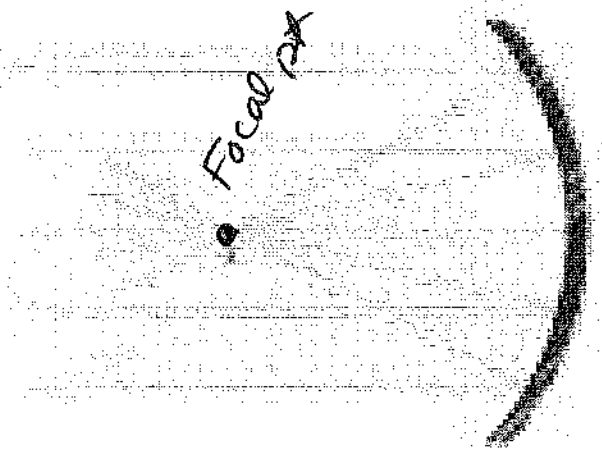
11. Explain if the object is far from the mirror or close up what would the image look like? (Would it be larger or smaller, upright or upside down) Label where the focal point for each mirror is?

Concave: far = small & upside down
Close = large & upright

Convex: Smaller

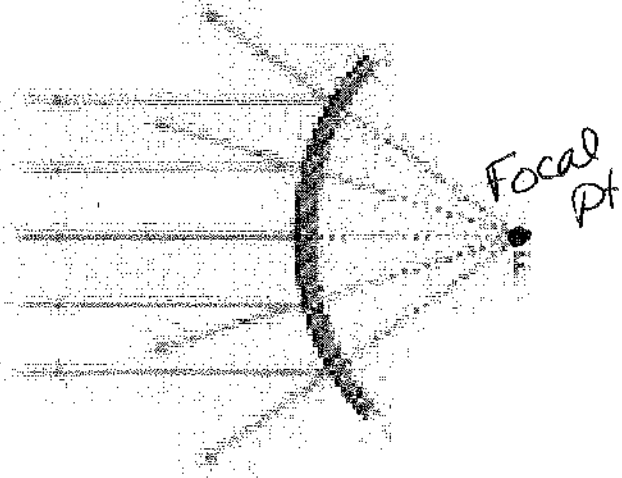
Curved Mirrors

Concave



"converging" mirror

Convex



"diverging" mirror