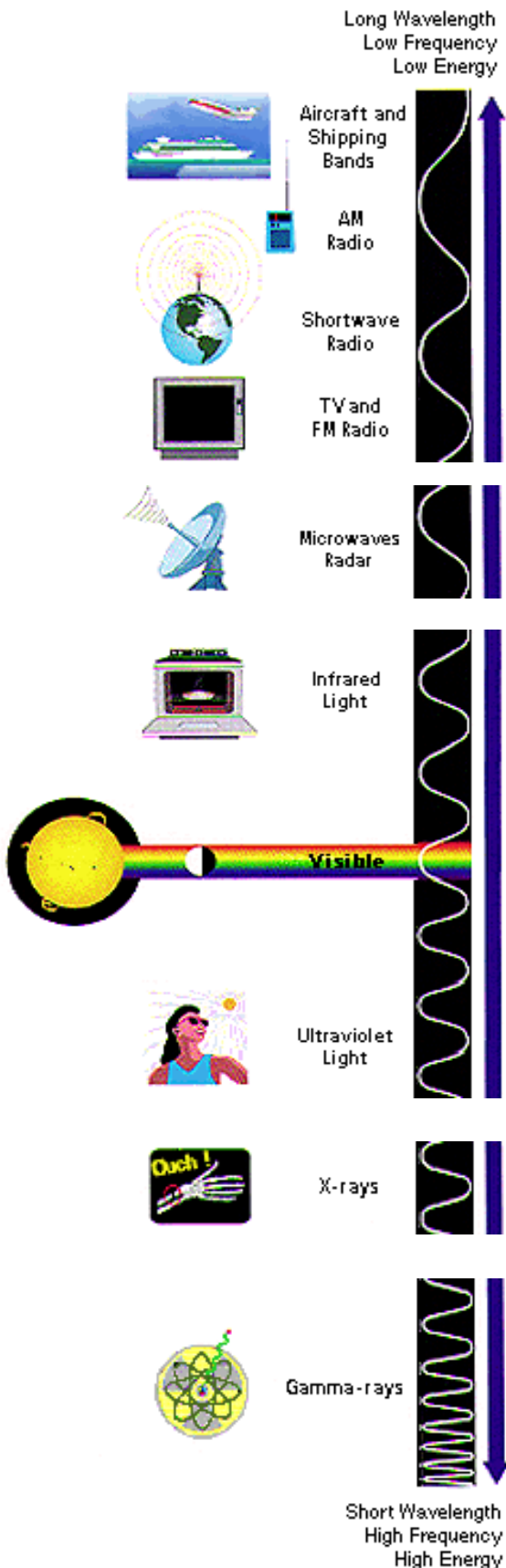
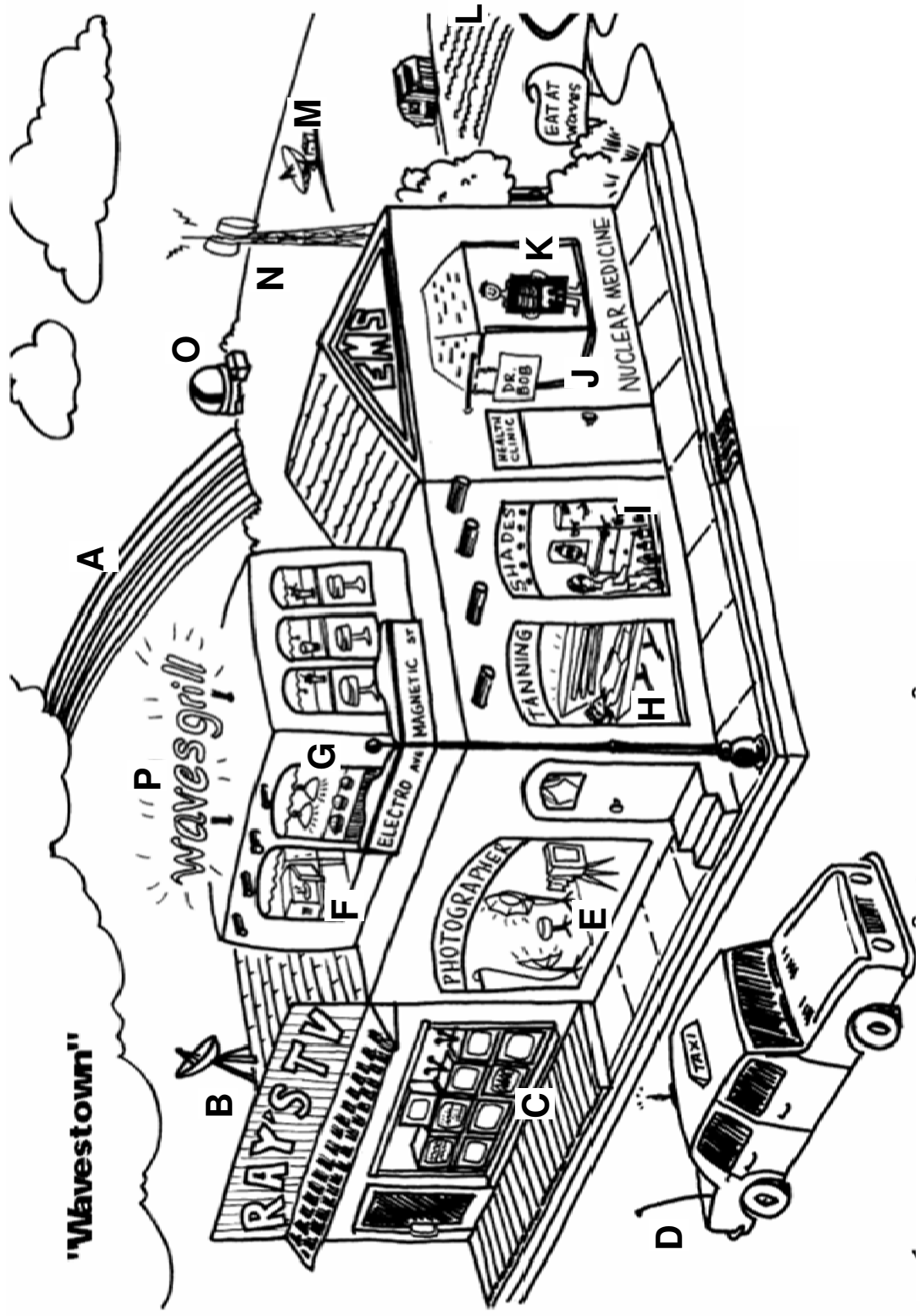


Wavestown Descriptions

The **electromagnetic spectrum** is used to study space. The energy emitted by space objects travel through empty space! The energy from electromagnetic radiation is useful here on Earth.

- 1. Radio waves:** this is the same kind of energy that radio stations emit into the air for your boom box to capture and turn into your favorite tunes. But radio waves are also emitted by other things... such as TVs, MRI machines, and even stars and gases in space. You may not be able to dance to what these objects emit, but you can use it to learn what they are made of.
- 2. Microwaves:** actually radio waves with the lowest frequency... they will cook your popcorn in just a few minutes! They are also used in radars and cell phones. In space microwaves are used by astronomers to learn about the structure of nearby galaxies, including our own Milky Way!
- 3. Infrared:** these are used in electric stoves, toasters & heat lamps... we often think of this as being the same thing as 'heat', because it makes our skin feel warm. Plants and people give off infrared. In space, infrared light maps the dust between stars. (detected by thermograms)
- 4. Visible:** yes, this is the part that our eyes see. Visible radiation is emitted by everything from fireflies to light bulbs to stars ... also by fast-moving particles hitting other particles. Each wavelength of light has a different color.
- 5. Ultraviolet:** the Sun is a source of ultraviolet (or UV) radiation. UV rays in small amounts cause our skin to produce vitamin D, but too much can cause sunburns and can even lead to cancer. Stars and other "hot" objects in space emit UV radiation.
- 6. X-rays:** they can go through your body to allow doctors to use them to look at your bones & your dentist to look at your teeth. Hot gases in the Universe also emit X-rays.
- 7. Gamma-rays:** radioactive materials and some nuclear reactions can emit gamma-rays. Controlled amounts can be used to treat cancer, but too much can also cause cancer. The biggest gamma-ray generator of all is the Universe! It makes gamma radiation in all kinds of ways. Gamma rays cannot pass through the atmosphere from space!





'Wavestown'

A

P wavesgrill

B

F

G

PHOTOGRAPHER

E

TANNING

H

SHADES

HEALTH CLINIC

J

DR. BOB

K

NUCLEAR MEDICINE

EMS

N

M

O

S

L

D

TAXI

Wavestown

Objective:

Explore the different wavelengths of the electromagnetic spectrum.

Directions:

- Using the descriptions of the different electromagnetic spectrum waves, match the wave type to the lettered places in Wavestown. Write you're the wave type in the table next to the letter.
- Label the electromagnetic spectrum at the bottom of the page with the types of waves.

Letter in Wavestown	Type of Wave
A	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	
L	
M	
N	
O	
P	

