

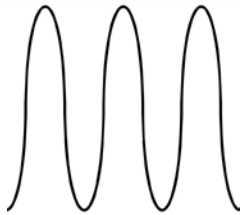


## Catching the Wave

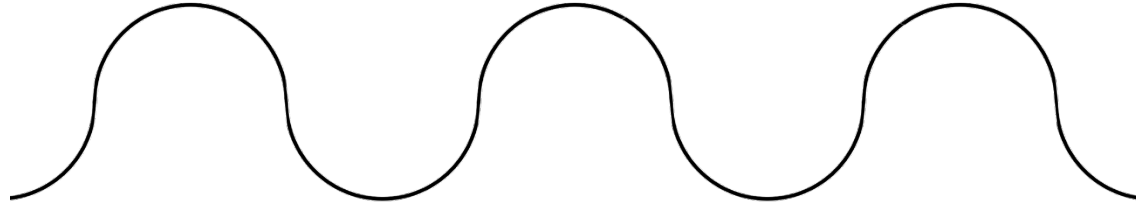
Visible light is only a portion in the range of wavelike energies. The whole range of wavelike energies is called the **electromagnetic spectrum**.

**Gamma rays** have the smallest waves of all. They can be used to sterilize medical equipment.

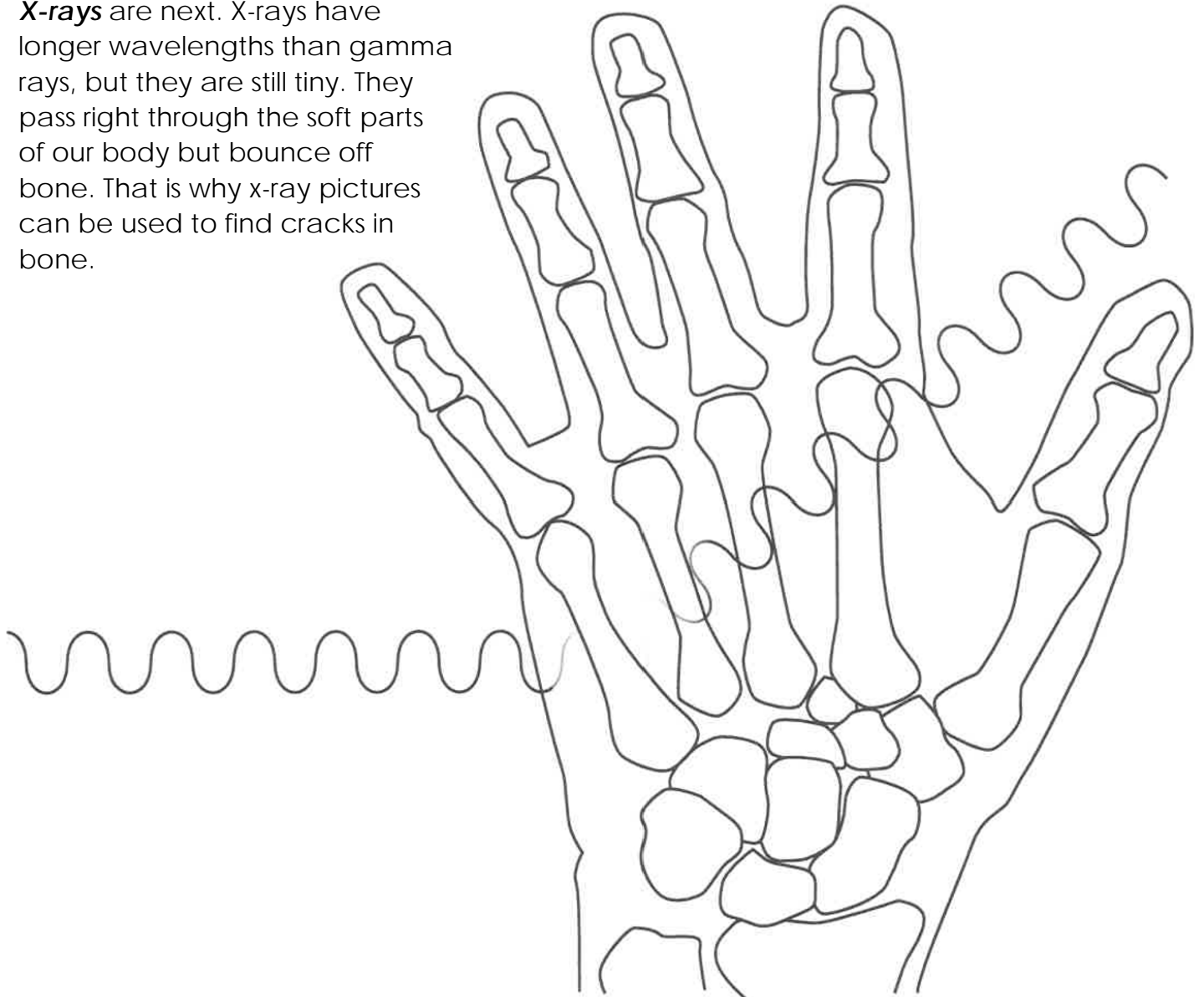
Small wavelength



Long wavelength



**X-rays** are next. X-rays have longer wavelengths than gamma rays, but they are still tiny. They pass right through the soft parts of our body but bounce off bone. That is why x-ray pictures can be used to find cracks in bone.





## Catching the Wave

**Ultraviolet waves** are too small to be seen but we notice their effects. We feel ultraviolet radiation from the sun when we get a sunburn.



Ouch! This mom has been playing at the beach all day without wearing any sunscreen. **Color her red.**

Her kids were wearing sunscreen, which can block ultraviolet waves, and did not get a sun burn.



## Catching the Wave

The next size of wave in the electromagnetic spectrum is **visible light**.

Our eyes can see the colors of the rainbow from red to violet.

**Color all the shades of visible light you can see in the rainbow.**







## Catching the Wave

**Infrared** is next. You can't see infrared waves, but you can feel them as heat.

Looking at this picture, what do you think gives off the most infrared waves?

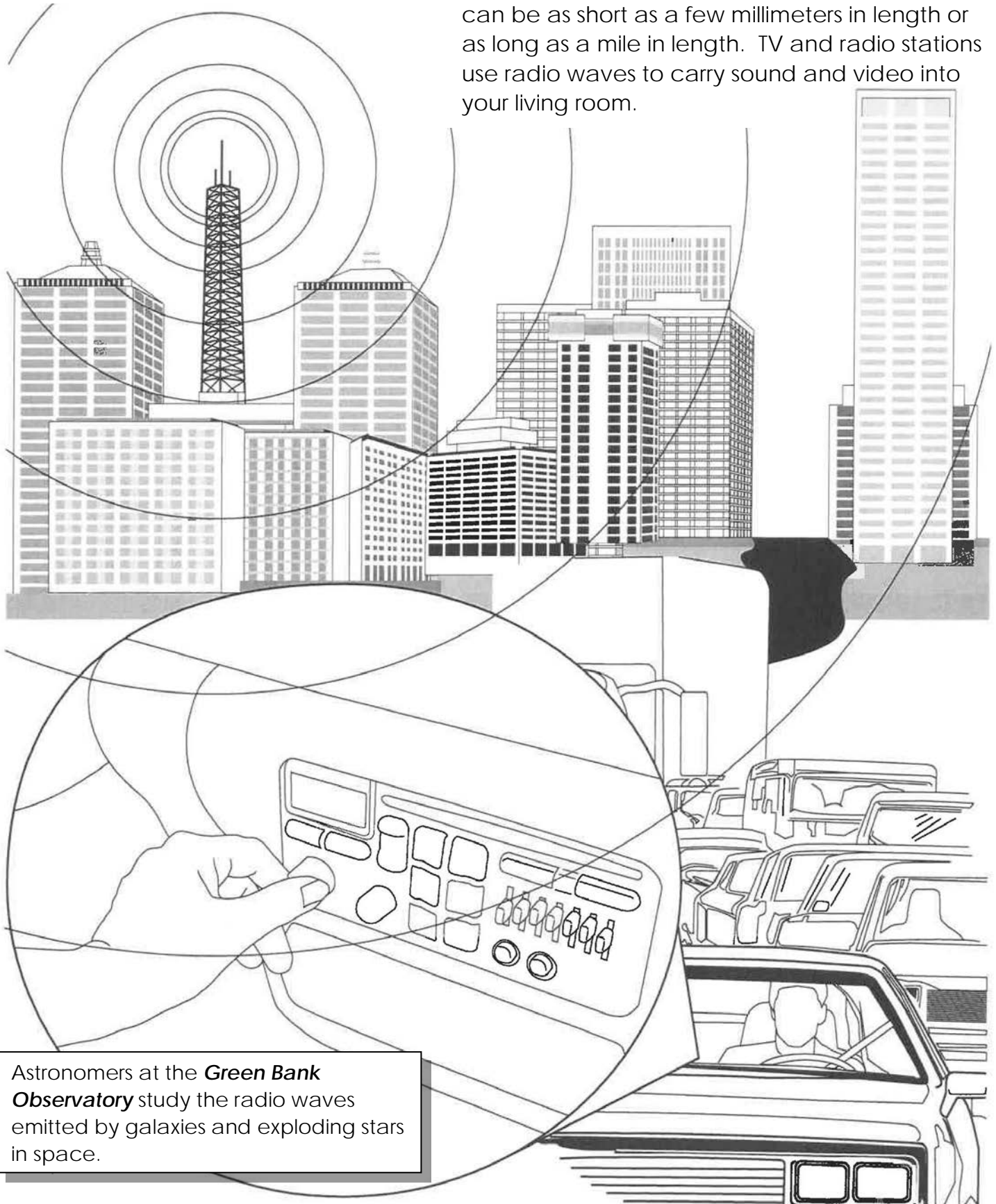
Answer: \_\_\_\_\_





## Catching the Wave

The longest waves of all are **radio waves**. They can be as short as a few millimeters in length or as long as a mile in length. TV and radio stations use radio waves to carry sound and video into your living room.



Astronomers at the **Green Bank Observatory** study the radio waves emitted by galaxies and exploding stars in space.