SDO Project Suite Module 2

2A Electromagnetic Spectrum "What's the Wavelength?" Foldable

guided instructions key

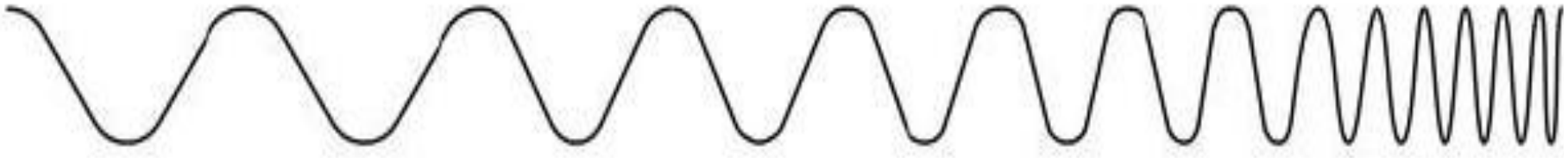
SDO Project Suite Module 2

Directions:

Create your Electromagnetic (EM) Spectrum Foldable

1. Cut along the dashed lines up to the solid mid-line.
2. Fold “hotdog” style along the solid mid-line.
3. Write the missing wavelength labels on the flaps.
4. Research the EM Spectrum to find out each EM wavelengths’:
   - wavelength size comparisons and identify longest and shortest EM waves
   - wavelength frequency (highest and lowest only)
   - example of the wavelength (source, use, etc.)
5. Use the clues from EM Spectrum printed on the foldable to assist you.

Wavelength size: **_____** **Wavelength** **_____** **Frequency** **Wavelength example: Radio Broadcasting**	**Wavelength size:** **Wavelength example:**	**Wavelength size:** **Wavelength example:**	**Wavelength size:** **Wavelength example:**	**Wavelength size:** **Wavelength example:**	**Wavelength size:** **Wavelength example:**	**Wavelength size:** **_____** **Wavelength** **_____** **Frequency** **Wavelength example: Cosmic Rays from Space**



	X-Rays		Visible Light			

Define:
Wavelength:

Frequency:

Parts of a Wave
Sketch (label “crest”, “trough”, “wavelength distance”)

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   - and an example of the wavelength.)source, use)

Note: Use the clues on the EM Spectrum foldable to assist you.

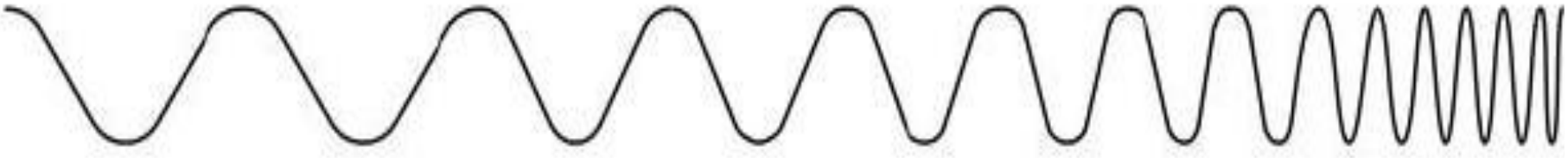
Names:

Key: Double-sided copy (top edge)
(inside side 1)

Cut along the dashed lines.

Fold on the solid line.

Wavelength size: Height of Buildings Longest Wavelength Lower Frequency Wavelength example: Radio Broadcasting	Wavelength size: Size of Honey Bee Wavelength example: Microwave Oven	Wavelength size: Size of Pinpoint Wavelength example: Night Vision Goggles	Wavelength size: Size of Protozoans (single cell micro-organisms) Wavelength example: Rainbow	Wavelength size: Size of Molecules Wavelength example UV Light from the Sun	Wavelength size: Size of Atoms Wavelength example: Airport Security Scanner	Shortest Wavelength size: (nucleus of atom) Shortest Wavelength Highest Frequency Wavelength example: Cosmic Rays from Space



Names:

Key: Double-sided copy (outside side 2)

Define:

Wavelength:

Frequency:

Parts of a Wave

Sketch (label "crest", "wavelength distance", "trough")

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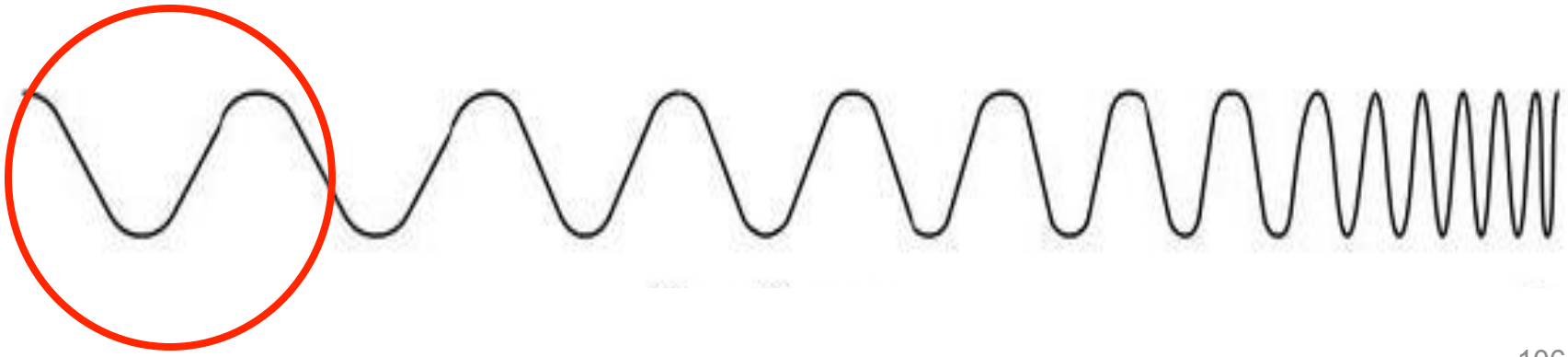
Note: Use the clues on the EM Spectrum foldable to assist you.

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

(top edge)

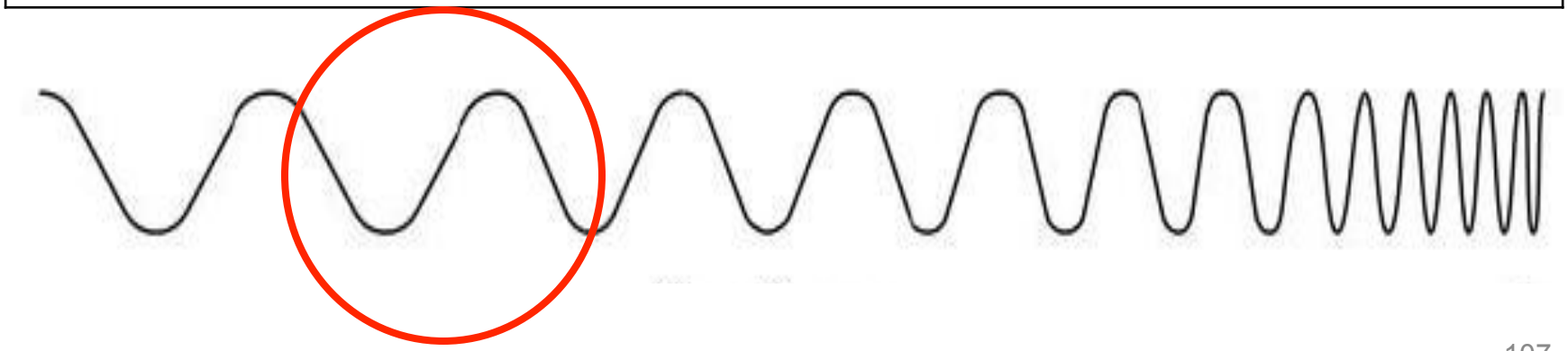
Radio Waves

- **Longest electromagnetic (EM) wavelengths**
- **Lowest EM frequencies**
- **Not harmful to living organisms**



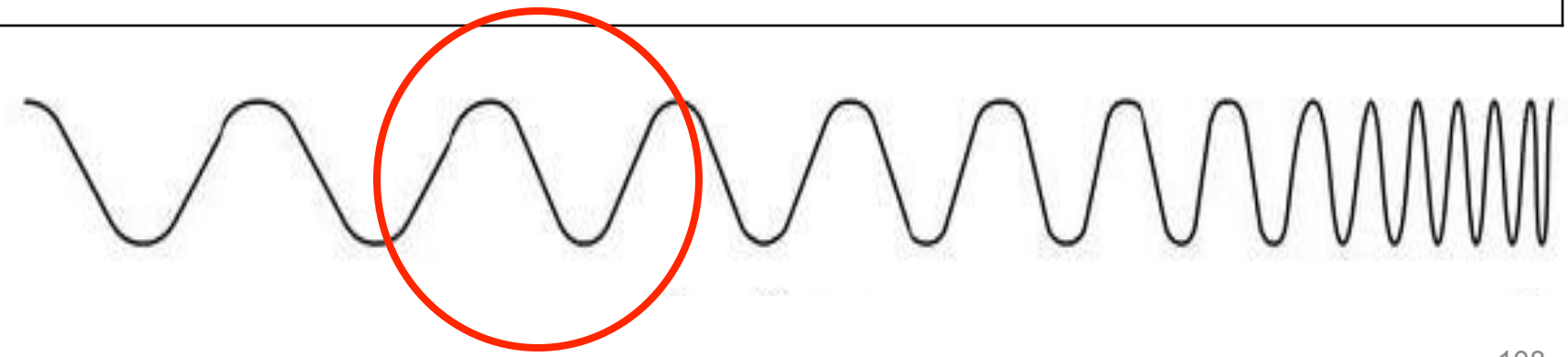
Microwaves

- **A type of radio wave**
- **Not dangerous to living organisms**
- **Speed guns, and of course microwave ovens, use microwave EM waves**



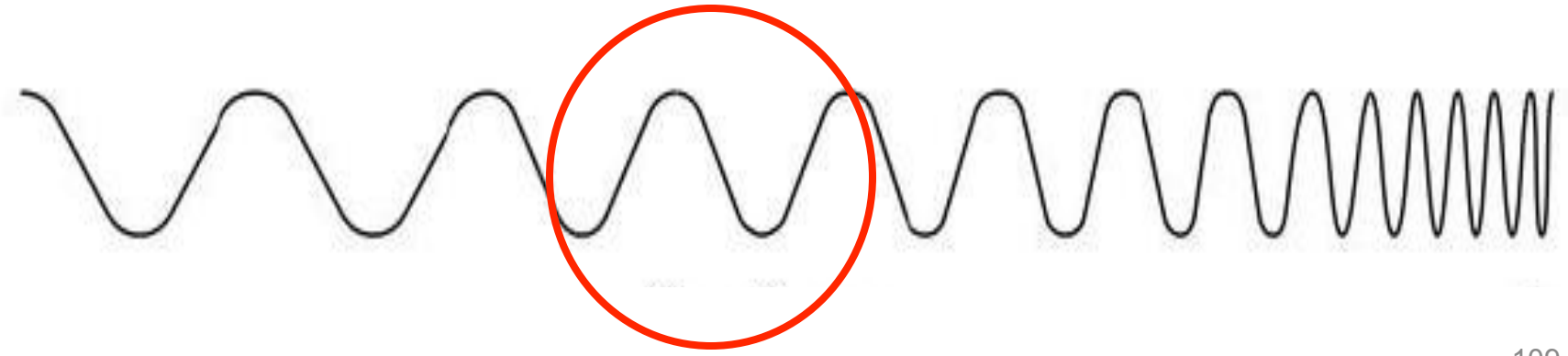
Infrared Rays

- **IR wavelengths are shorter than radio waves and microwaves**
- **IR waves can be felt as heat**
- **Heat lamps and infrared cameras use IR electromagnetic waves**



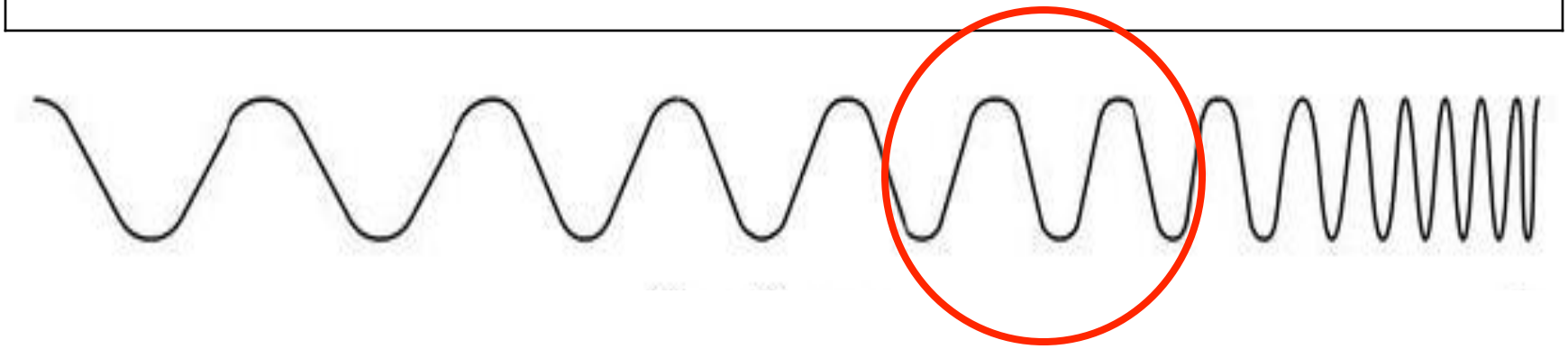
Visible Light

- **Wavelengths that are longer than UV, X-ray, and Gamma Ray waves**
- **Humans can see this form of electromagnetic radiation**
- **White light can be separated into red, orange, yellow, green, blue, indigo, violet**



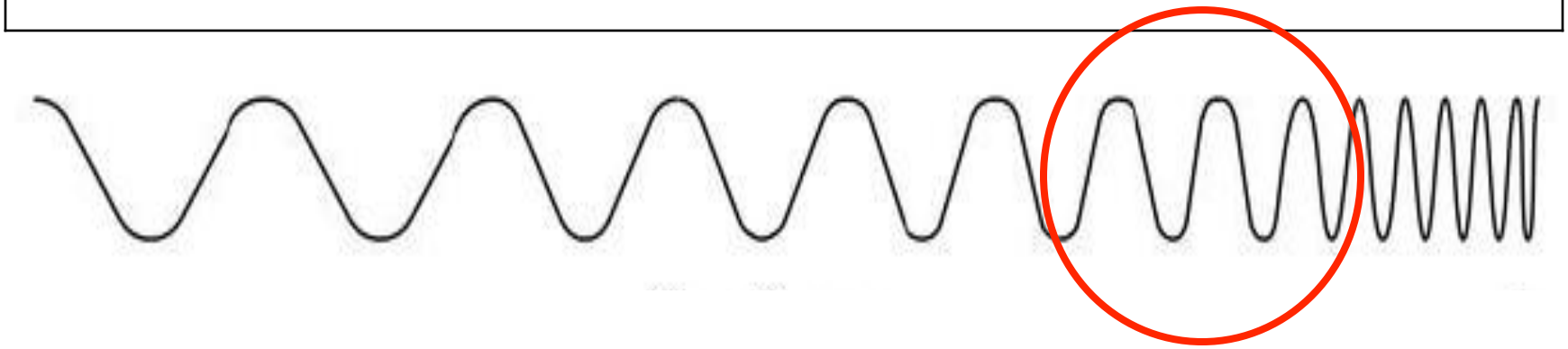
Ultraviolet Rays

- **UV electromagnetic radiation can damage or kill living cells**
- **UV waves cause sunburns and skin cancer in humans**
- **Used as a disinfectant**



X-Rays

- **X-rays penetrate most matter**
- **Dangerous to living organisms**
- **Too much exposure to X-rays can cause cancer in humans**



Gamma Rays

- **Shortest electromagnetic (EM) wavelengths**
- **Highest EM frequencies**
- **Most penetrating and dangerous of all electromagnetic waves to living things, including humans**