



Superposition

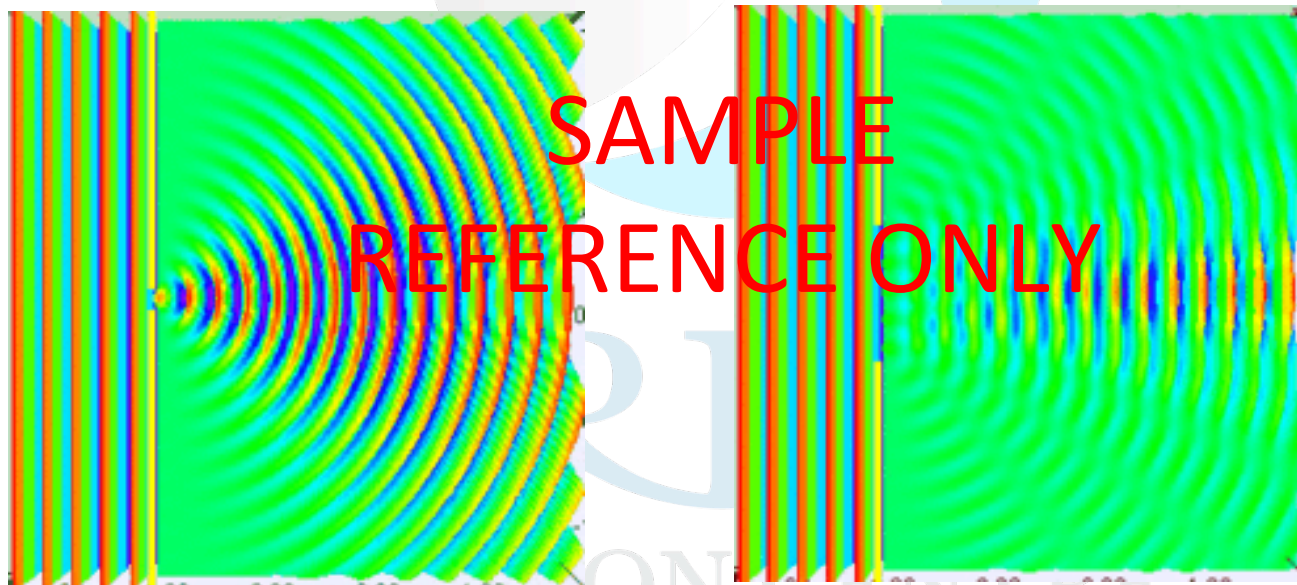
SAMPLE

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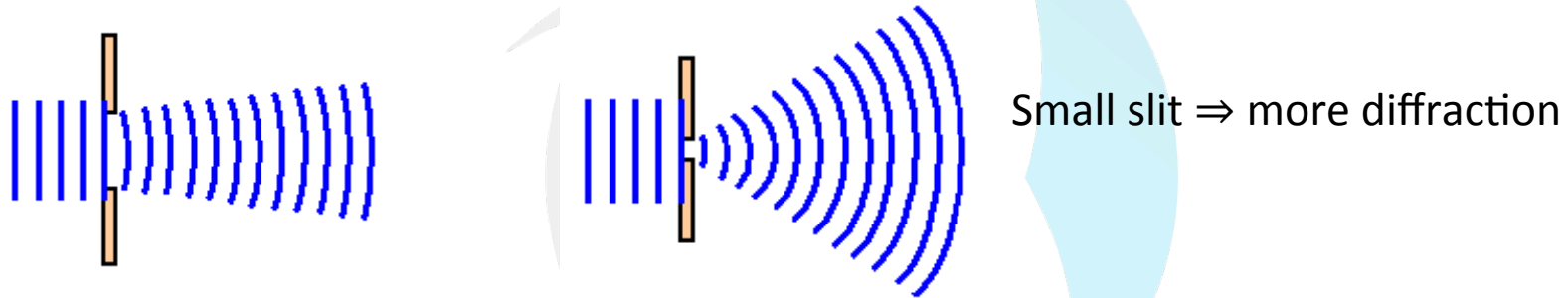
Diffraction

- Diffraction is the **bending or spreading** of a wave after it passes through an **opening or obstacle**.



Water Wave Diffraction

Same wavelength, different opening size.



Same opening size, different wavelength.



Diffraction pattern is most noticeable if the wavelength is **comparable in size** to the opening. When the wavelength is much smaller than the opening, little diffraction pattern will be observe.

Sound and Light Diffraction

- Light source does not diffract well through the opening of door. This because it does not undergo significant diffraction through the small opening. Wavelength of visible light range from 400nm to 700nm which is many time smaller than the door opening. (How about reduce the gap of the door?)
- However you are probably still able to hear your mum crystal clear instruction from inside the room. This is because sound waves can diffract through the door opening appreciably.



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