

### 3. SOUND WAVES – NOT RADIO WAVES

Purpose: To demonstrate the difference between sound waves and radio waves.

Materials: MP3 Player\* with speakers, metal frying pan spatter cover (a sheet of aluminum foil or a bare metal cookie sheet will also work), metal strainer, and solid plastic salad spinner dome. \*An iPod with speakers or a tape player can also be used to generate sound waves.

Configuration and Operation: Turn the MP3 player on, place it on the spatter cover, and cover it tightly with the metal strainer. The sound will not be affected because the metal strainer has no effect on sound waves. Next, place the solid plastic dome over the MP3 player. The sound will be muffled or blocked by the dome because transmission of the sound waves is reduced by the solid object.

Text for the SOUND WAVES- NOT RADIO WAVES! exhibit at the Science Discovery Museum:

#### SOUND WAVES – NOT RADIO WAVES!

Listen to the songs downloaded on the MP3 Player. Place a metal strainer over the MP3 Player.

Does it stop the sound?

Place the plastic strainer or the plastic dome over the MP3 Player.

Does either stop the sound?

This music is not carried by radio waves. Like a tape recorder, CD, or DVD the sound is produced by recorded information.

Sound waves are not radio waves.

Note: The music used on the MP3 Player are astronomy songs from AstroCapella.CD  
[www.astrocapella.com/](http://www.astrocapella.com/)

About 280 centimeters or 110 inches (107 million Hertz)

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The Last Song - "Cotton Candy Dream"  
High School Chorus - "By The Chemistry"  
Who Wants To See Me? - "The Night At Casino"

Plastic Salad  
Spinner Dome

Metal Strainer

MP3  
Player

Metal Spatter Cover

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waves



To learn about sound waves, go to the Sound Area.