PART TWO

ACTIVITY 1

Material: few ropes or latex tubes, each a few meters long, a large shallow disk/pan full of water

Get a large pan and poke the tip of your finger in the center. You should see a wave travel from your finger outward. Dip your finger repeatedly at a steady rate. Notice what changes when you change rate.

Divide the students in groups and give each group a rope (or latex tube). In each group have one student hold one end of the rope still and the another student move the other end up and down once, to create a wave pulse. Then ask him/her to move up and down several times, at a constant rhythm. Notice what changes when you change rate. Increase the displacement and discuss what happens.

ACTIVITY 2

Material: a led, a transparent jar filled with water

http://www.andybrain.com/sciencelab/2007/12/30/how-to-make-your-own-rainbow-and-meet-roy-g-biv/

http://www.lessonplanspage.com/ScienceExHowMakeASpectrum-RainbowMO68.htm

http://www.kids-science-experiments.com/rainbowsinadarkroom.html

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ACTIVITY 3

Material: Soap Film can or a black coffee mug, soap water, a piece of dark paper. Alternatively make a frame with cardboard.

Dip the open mouth of the can, the mug, or the frame in soap water and create a soap film like.

Keep your wall film vertical on a black paper to better see the light effect.
Take note of the colors and structure and how they change over time.

RECIPE for a SOAP SOLUTION

1 cup of dishwashing soap (e.g., in the US, Ultra Ivory Blue or Palmolive or Joy or Dawn)
12-16 cups water
3/4 tablespoon glycerin (available in pharmacies or chemical supply houses) or corn syrup or 2 tablespoons of sugar (cheaper---but bugs like sugar)

Stir gently. Prepare the bubble solution two to three days in advance.
Glycerin/corn syrup slow down the evaporation, making the soap films last longer, but too much makes the films too heavy to support their own weight.

Make sure anything your bubble may touch is wet. Try to avoid dust and other material that may contaminate the solution.

NOTE: This is a lot of soapy solution, so you may need a big container. You can make less solution by keeping the proportions (e.g., 1 spoon of soap, 16 spoons of water).

ACTIVITY 4

You can hear the effects of wave superposition if you move about in the area in front of two loudspeakers.

You can see an example of the experimental configuration on the website:

http://www.iop.org/activity/education/Projects/

in the Word Document file

"Hearing superposition". Sounds from two sources can cancel. You can hear the effects of wave **superposition** if you move about in the 'sound

field' ...

www.iop.org/activity/education/.../**Superposition**/file_4266

OR you can build a Quicke tube!

http://www.practicalphysics.org/go/Experiment_158.html?topic_id=1&collection_id=19

ACTIVITY 5

Material: straw, film can or a black coffee mug, soap water, a piece of dark paper.

Dip the open mouth of the can, the mug, or the frame in soap water and create a soap film. Dip the straw in the soapy solution and use it to blow inside the mug, so that the soap film becomes curved.
Keep your film vertical on a black paper to better see the light effect. Blow gently on the soap film, try to create vortexes and other patterns. Repeat keeping the mug horizontal.

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