How to make a wave-front model

Jed Marshall

Alexandra Park School

Physics TSST

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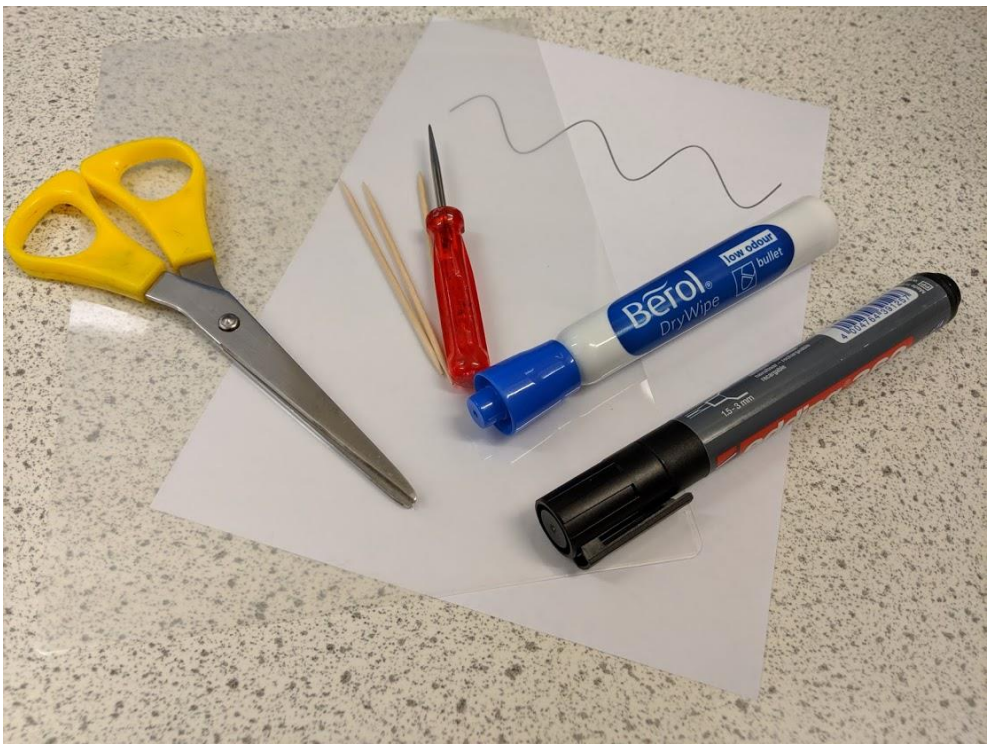
Introduction

Students often find it difficult to make a conceptual comparison between different representations of waves. This model is a teaching tool to bridge the gap between two representations of waves and allows visualisation of the link between wavelength on a wave front and wave diagram.

Either follow the instructions below to build a large demonstration model, or alternatively students can make their own mini-models.

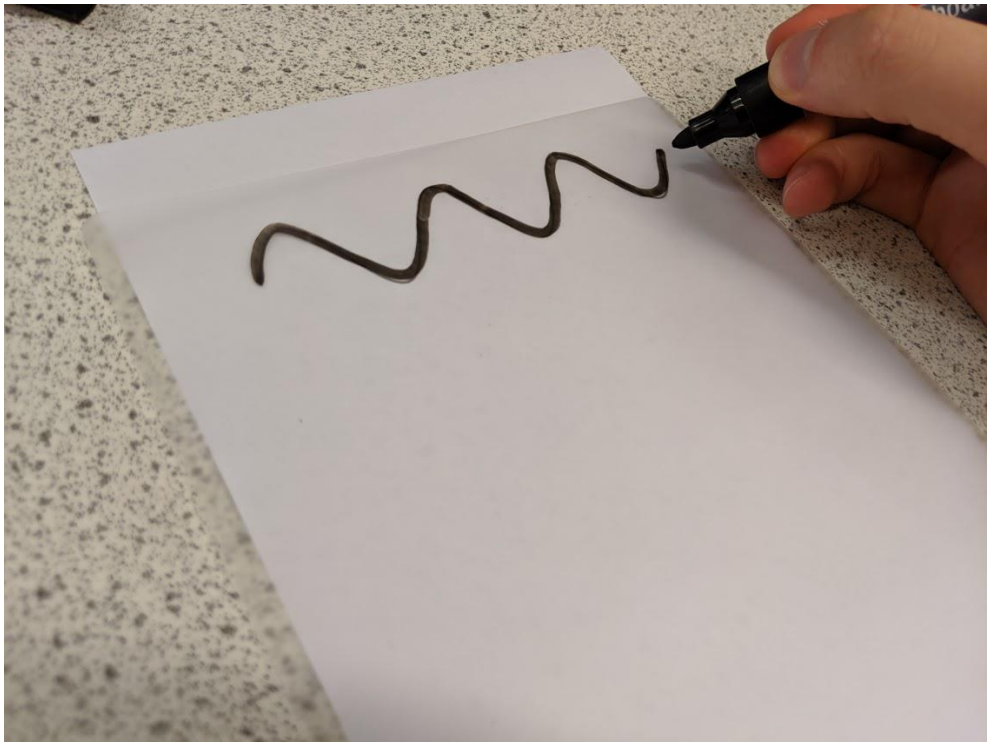
Equipment

- Laminate Sheet (any size) or Photocopy Acetate
- Marker
- Cocktail Sticks (or skewers)
- Puncture Tool
- Scissors
- Wave Template (graph your own here: https://www.geogebra.org/)

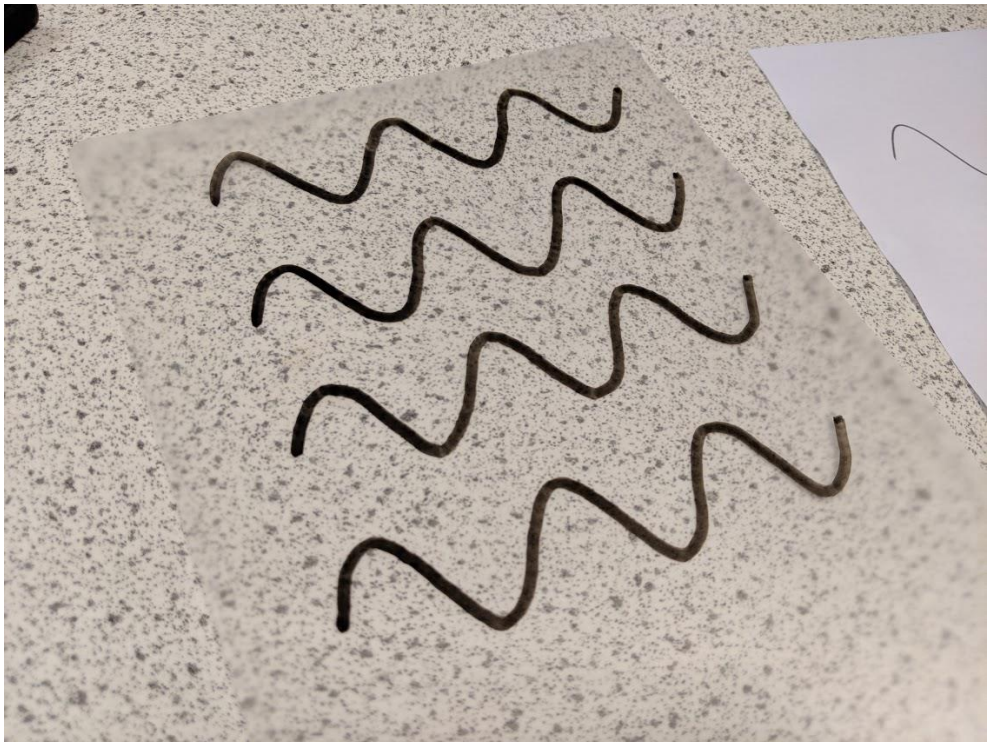


Procedure

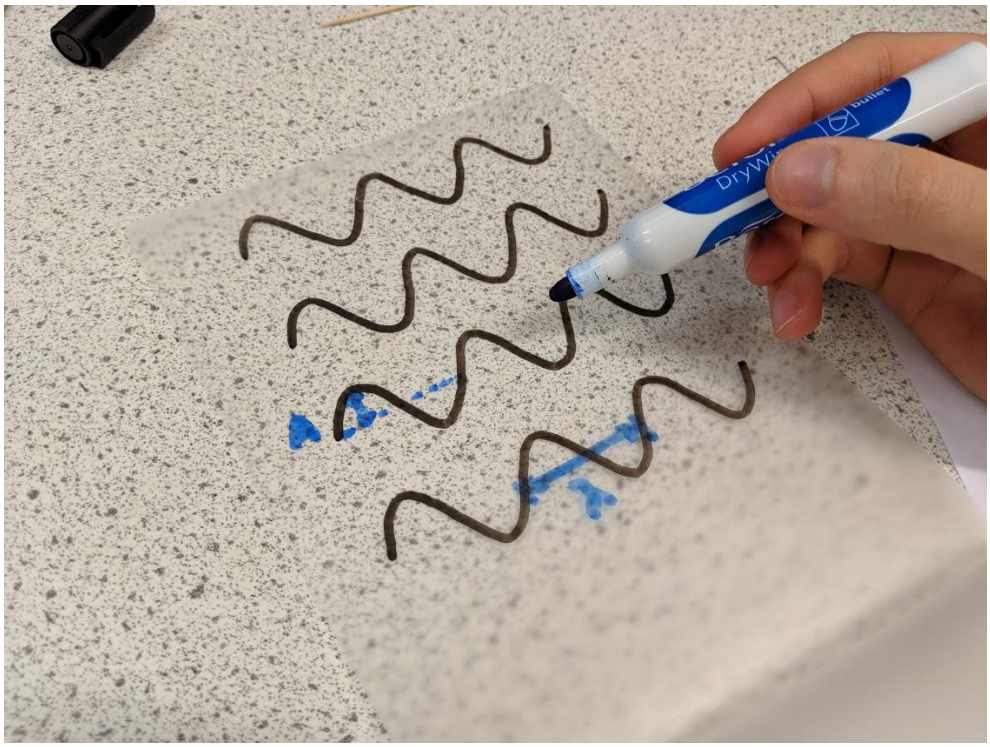
1. Using the marker trace out the wave template onto the laminate sheet.
   Alternatively, photocopy the template onto acetate.



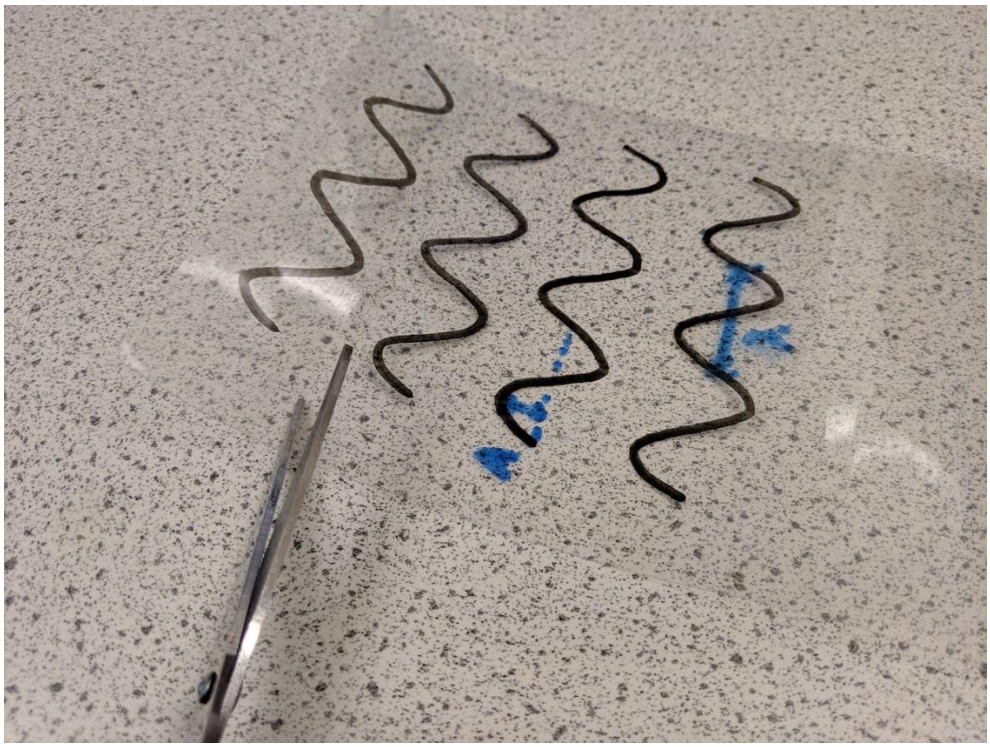
2. Repeat for the desired number of waves (recommended: 4).



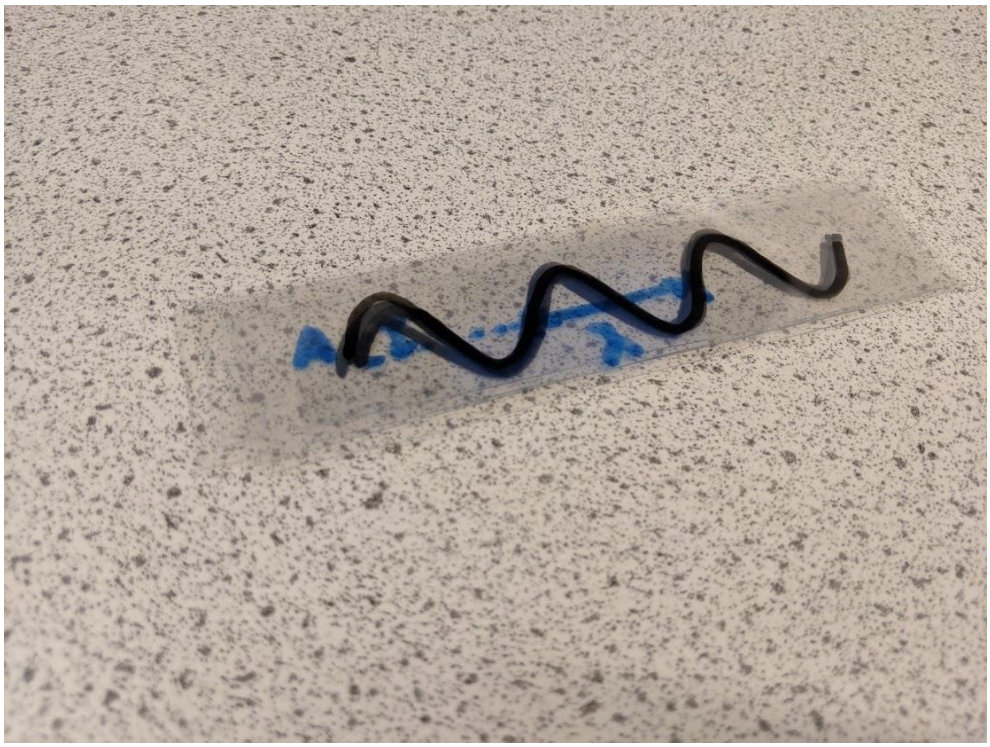
3. Annotate wave properties. *Optional*.



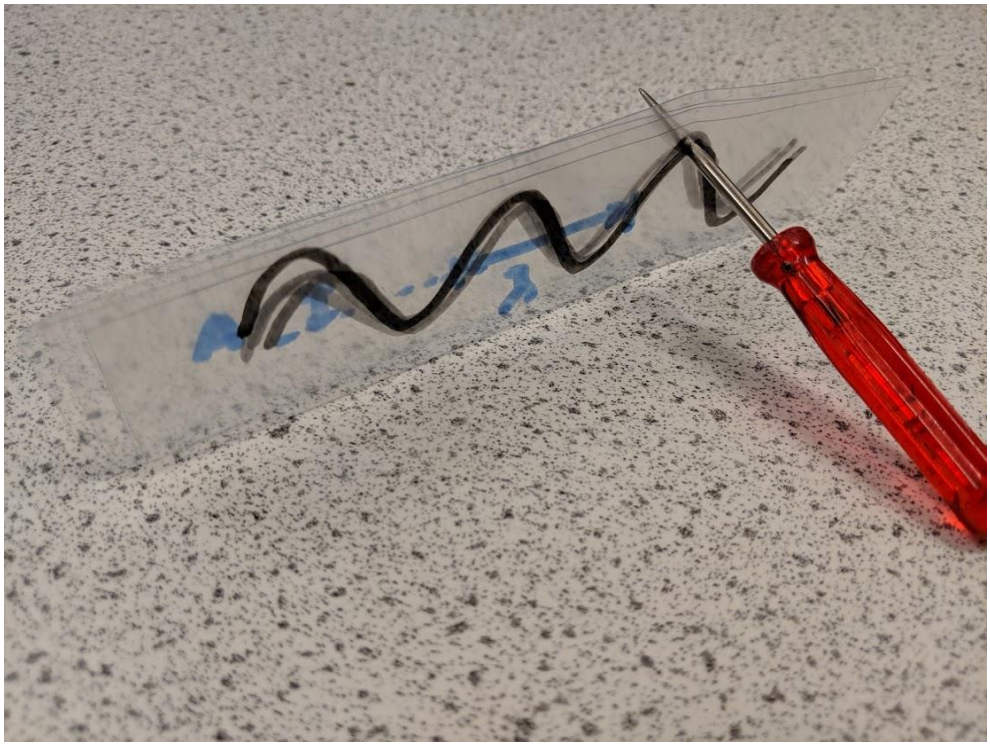
4. Cut out each wave



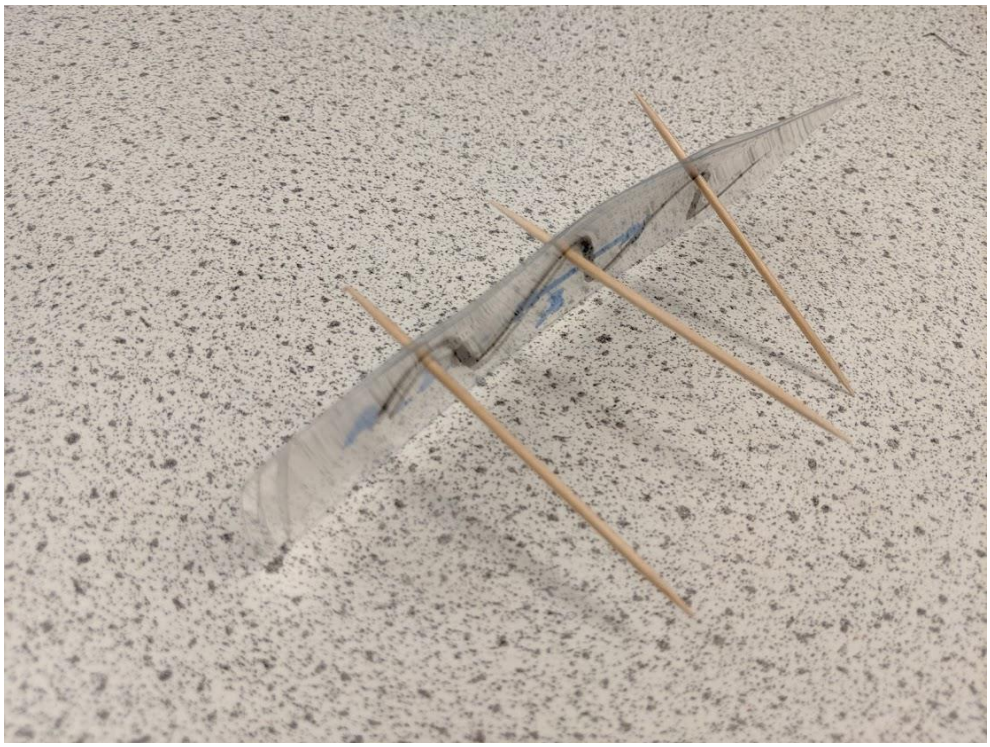
5. Roughly align the waves on top of each other



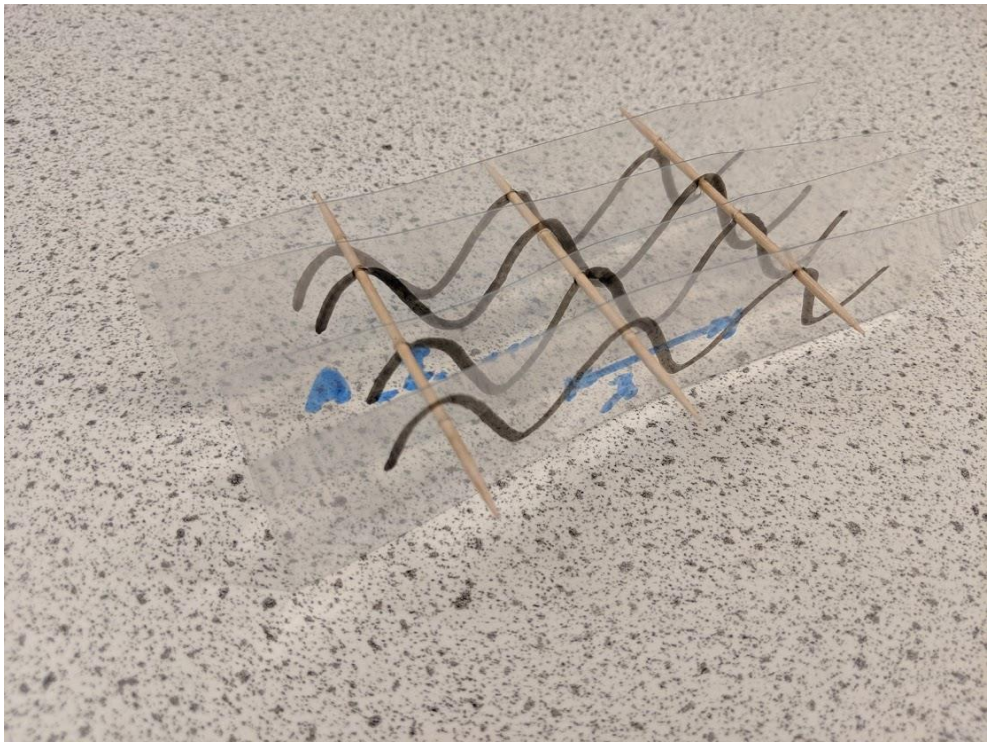
6. Puncture through the approximate wave peaks



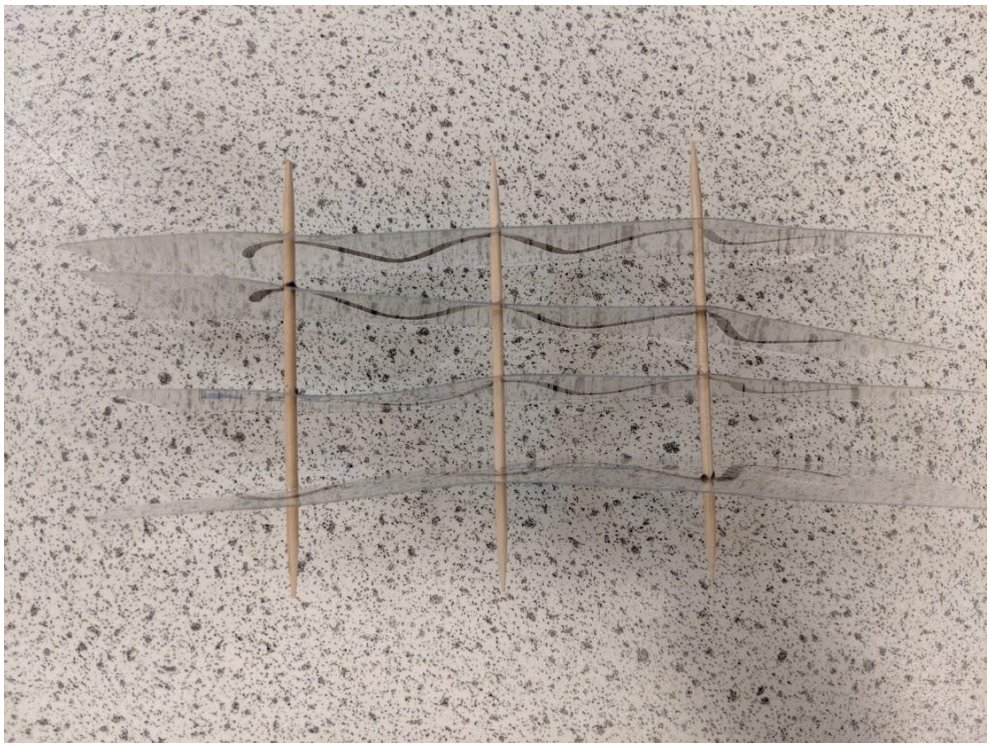
7. Place cocktail sticks through the wave peaks



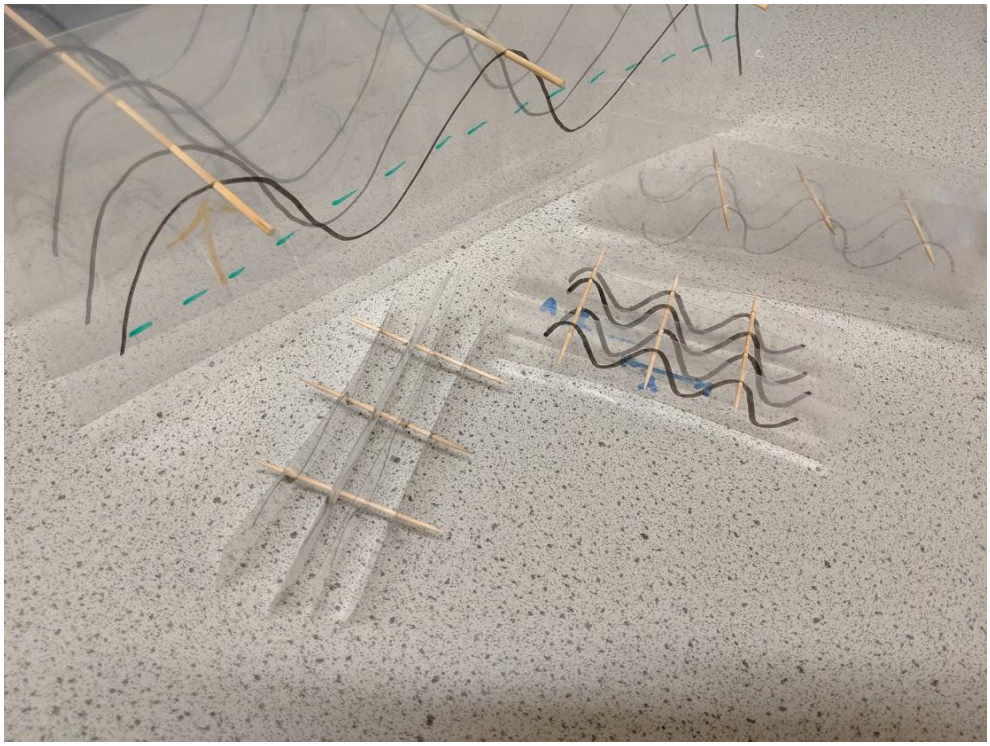
8. Separate out your waves and admire your wave front model.



9. When viewed from above the cocktail sticks represent the wave fronts.



10. This model can be scaled to any size.



Wave diagram templates