PS 100 Experiment 5, Chapter 10 Name (print)	NetID	Date	-
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Title: Waves

Instructions: Your group should have a telephone cord, spring or other stretchy cord. The TA should also have a laser pointer.

Types of waves:

- 1. Stretch the cord between two people. Send a transverse wave down the cord by having one person pluck it sideways. What happens when the wave reaches the far end? What do you note about the shape of the pulse?
- 2. Send a compression wave down the cord. What is the difference between compression and shear waves?

Characteristics of waves: frequency, wavelength, amplitude and speed

- 3. Generate several different standing waves. How many nodes can you produce?
- 4. How can you demonstrate frequency, wavelength, and amplitude with the spring? On the back of the paper, write a one sentence description for each of the three explaining how you could increase the quantity in question.
- 5. What do you observe about the relationship between frequency, wavelength and producing standing waves?
- 6. Do all frequencies produce standing waves?
- 7. How can you change the speed of the wave in the spring?

Wave behavior:

- 8. How did you demonstrate reflection with the spring?
- 9. How did you demonstrate interference with the spring?
- 10. How would you demonstrate diffraction and refraction with the spring? Why is this difficult?
- 11. At the front of the room there is a laser pointer. How could you demonstrate refraction and diffraction with the laser pointer? Why? Try your technique. Does it work?