

## Lab: Double-Slit Interference, Part One

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When a beam of light passes through two thin slits, something funny happens. The light creates a pattern on the other side that looks like this:



This is what we call an “interference pattern”. This week you will be investigating this phenomenon.

Questions:

1. What things might affect the spacing between the bright spots? After you’ve brainstormed some ideas, call your TA over to help you narrow it down to *two* factors for you to investigate experimentally.
2. What is the relationship between the spacing of the bright spots and the two factors? Design an experiment that will explore these relationships.

### Brainstorming

Groups of 4

15 minutes

*Don’t let them turn on the laser until they have decided on a pair of variables to explore. Help them narrow down their brainstorming to two, and if you can, make sure your class has a good variety of different things. Encourage less likely factors, since proving what doesn’t affect the pattern can be as important as showing what does.*

### Taking Data

Groups of 4

30 minutes

### Class Discussion

Whole Class

10 minutes

*One issue you may want to push is, is each group keeping all the other factors constant while varying just the one they’re interested in?*

### Taking More Data, Writing the Lab Report

Groups of 4

55 minutes