

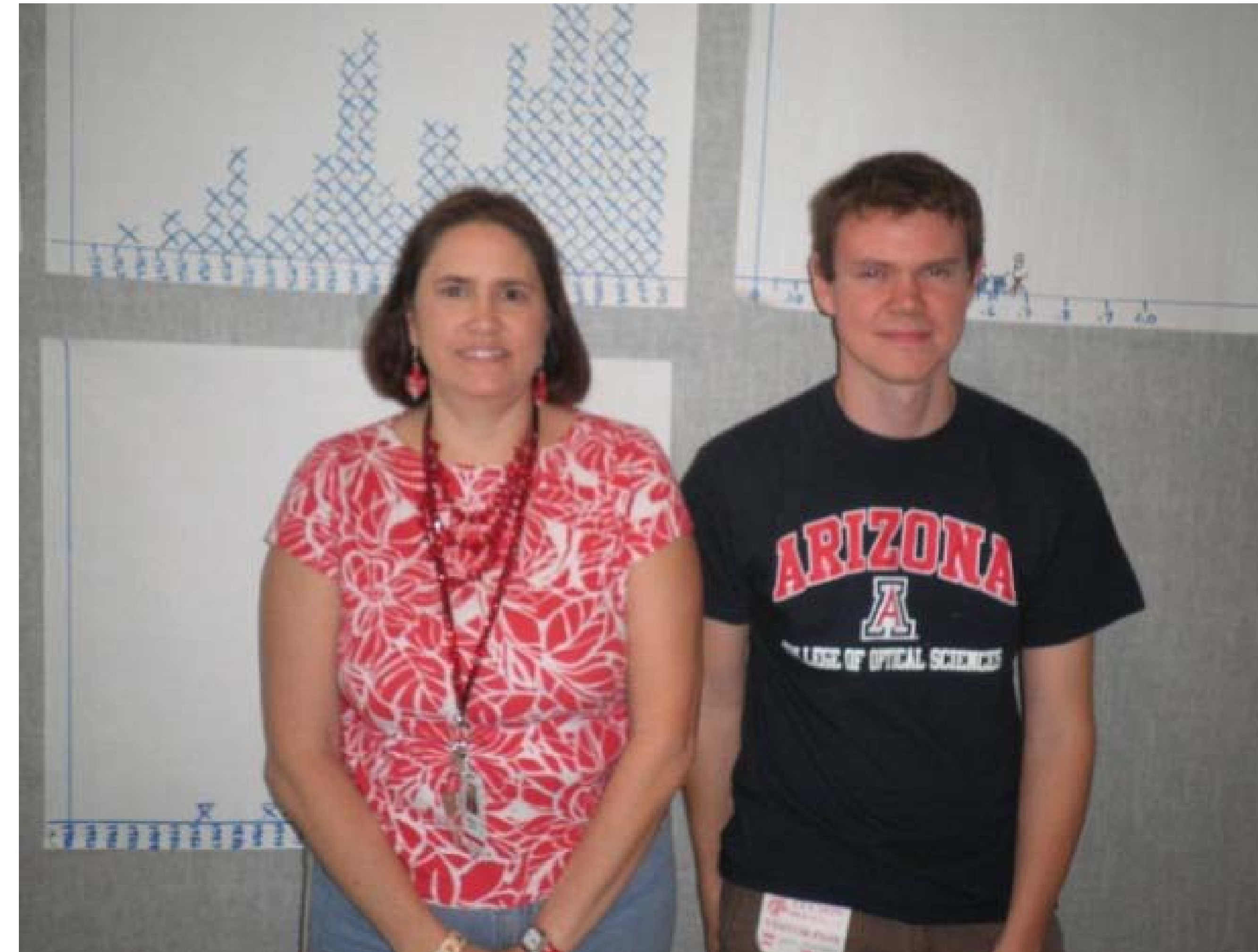
G-TEAMS at Tucson High Magnet School



Fellow : Chris MacGahan
Teacher : Jeanne Deloria



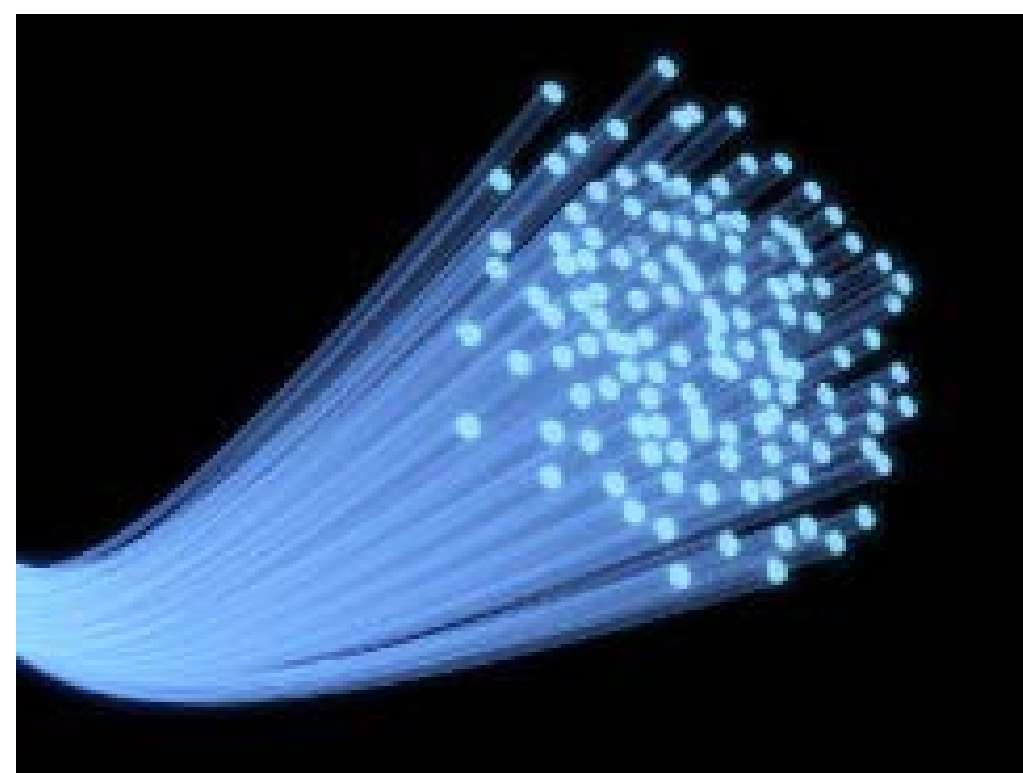
Jeanne Deloria is a Math teach in Tucson High. She teaches Honors Geometry, Pre-Calculus and AP Statistics. She joined G-TEAMS to incorporate more real world problems into the curriculum.



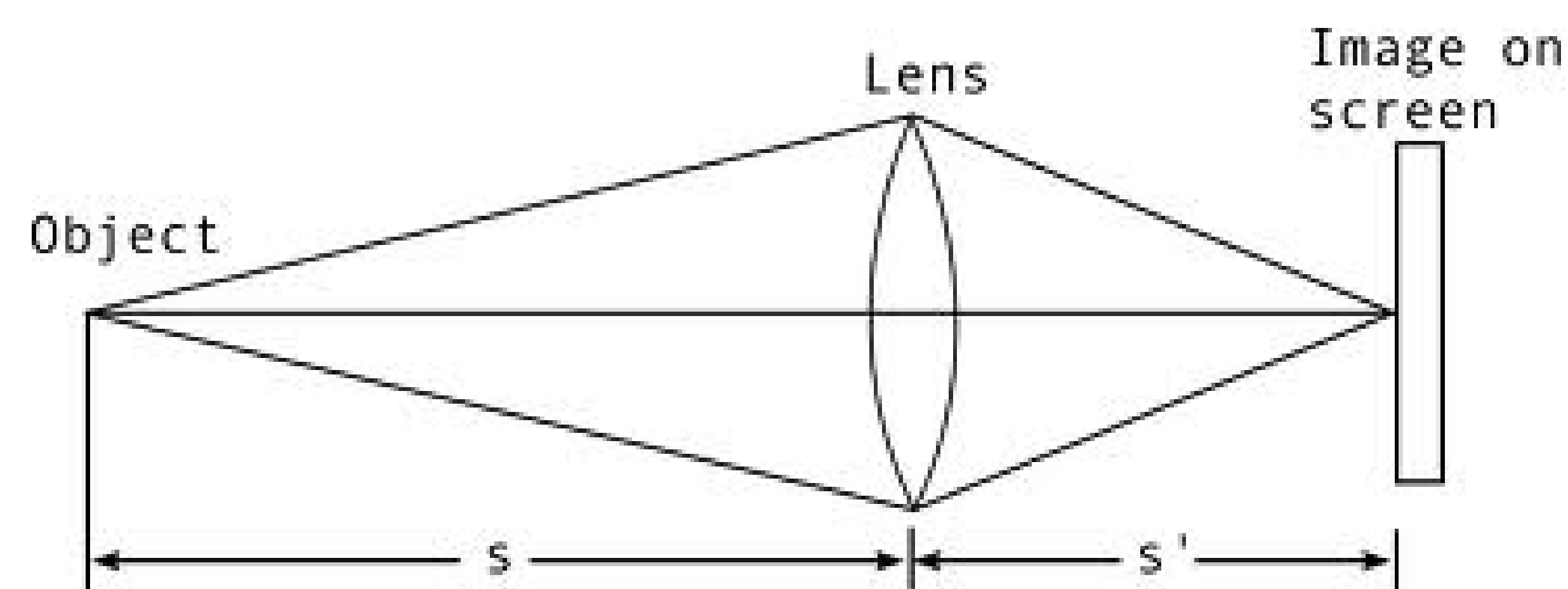
Chris MacGahan is a Ph. D. student in the College of Optical Sciences. He joined G-TEAMS because he is considering teaching in the future, preferably at the high school level.

Pre-Calculus

The pre-calculus class worked with exponential functions in the context of optical fibers. When light travels through a fiber, the output power will be an exponential decay function that is a function of the fiber length. Students looked at how long a fiber could be till the signal needed to be regenerated, the history of technical advancement in fibers, and current pricing models.



The pre-calc class will get hands on experience with rational functions while doing imaging with a lens in class. They will locate the position of the image given a lens with a certain focal length and plot object vs. image position.

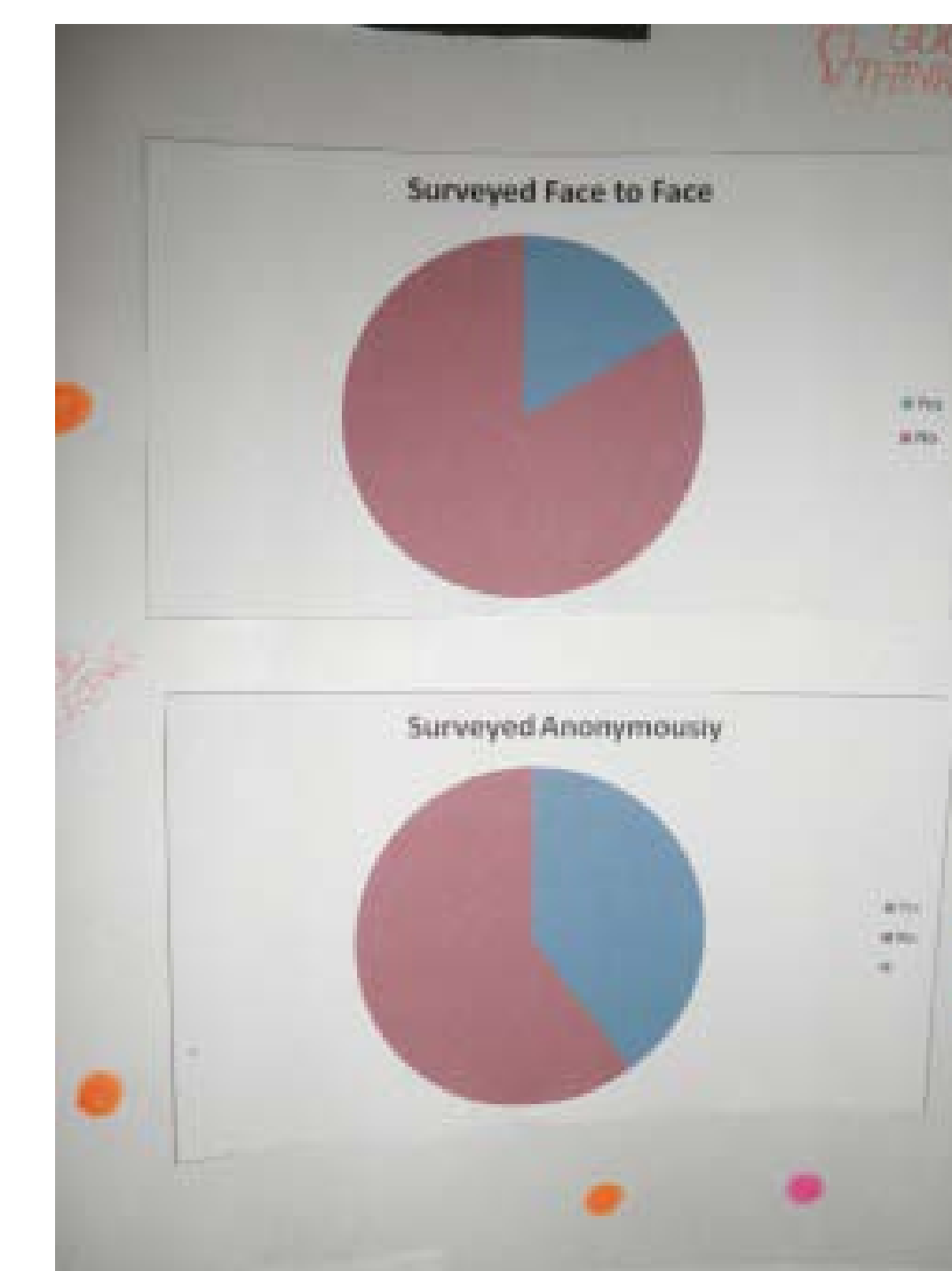


Response Bias in Statistics

Many polls suffer from response bias , where poll results are influenced by:

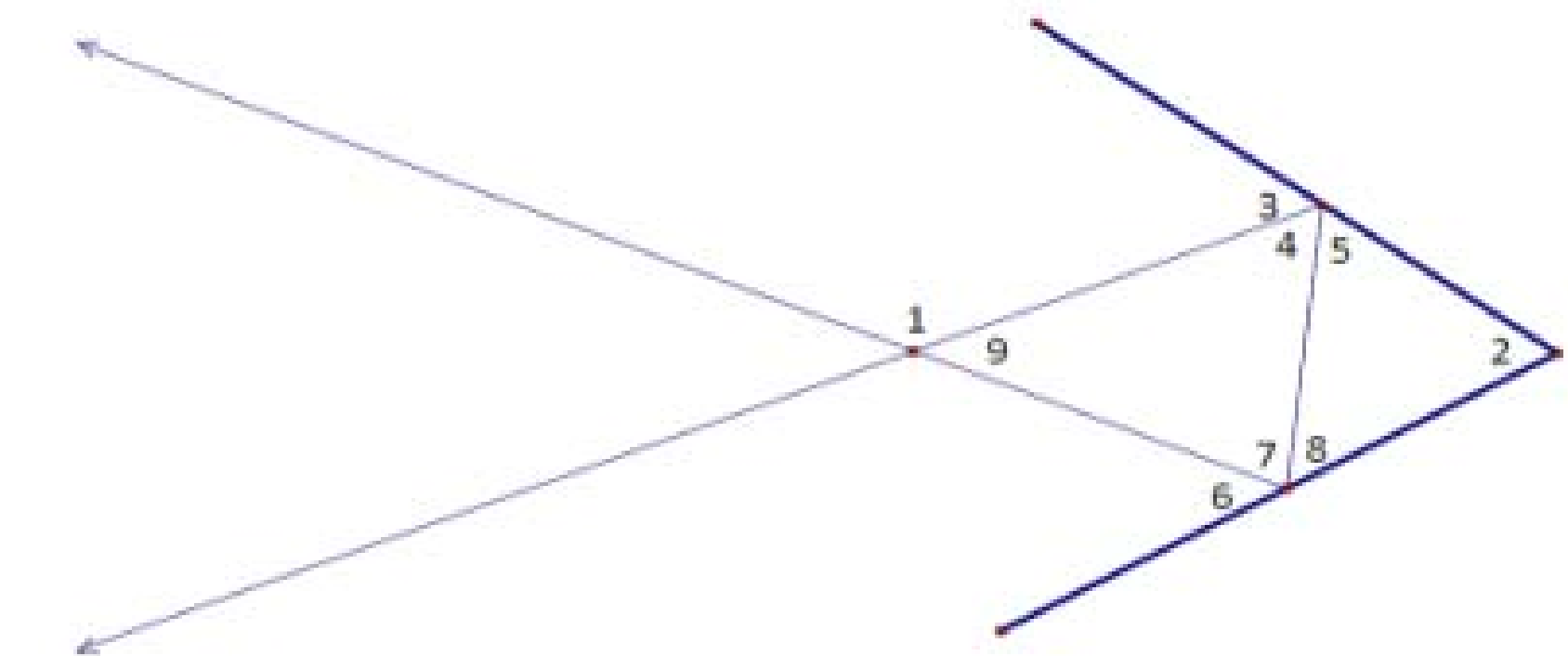
- Characteristics of the interviewer - gender, ethnicity or possibly attire
- Method of acquiring data – anonymous vs. non-anonymous surveys
- Wording of the actual question
- Leading questions impacting the response of the reported poll question

Our AP statistics class was assigned to carry out their own survey where the results were influenced by response bias. Their topics were interesting and entertaining.

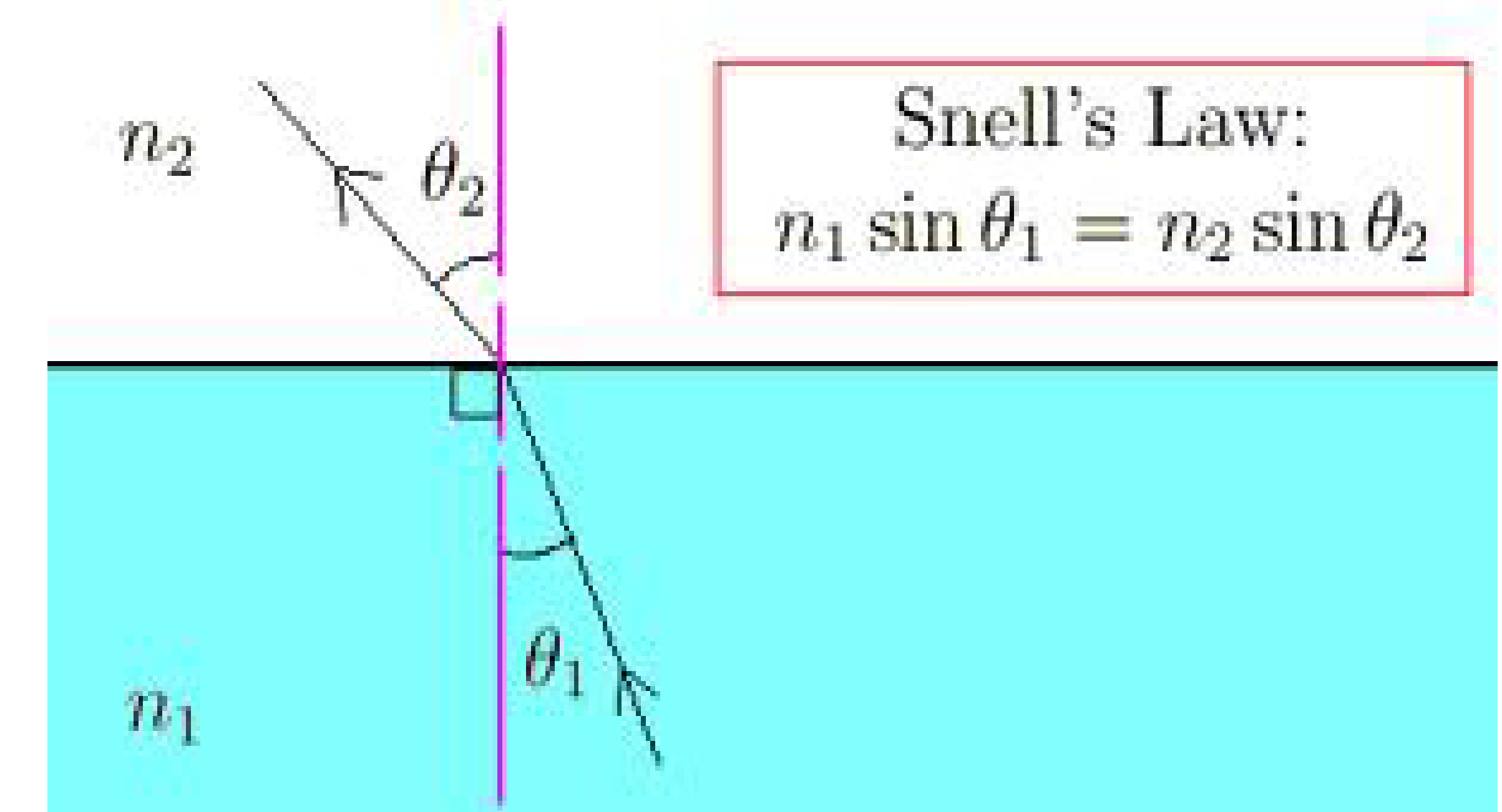


Geometry

The Honors Geometry classes empirically investigated the Law of Reflection. Afterwards, they looked at a hinged mirror and they derived the deviation of a beam input on one side of the mirror.



Later in the semester after trigonometry is introduced, we hope to expand this discussion and introduce ideas such as refraction.



Students will investigate Snell's law using a piece of quartz and use their findings to find the index of refraction for jello.