### Methods

- The research initially consisted of transforming and analyzing eye-tracking data from interviews of 10 undergraduate students and 3 professors who were selected through convenience sampling.
- The data consisted of 10 questions for each participant pertaining to curved arrow formalism in chemistry mechanisms. An eye tracking software called gaze tracker was used in order to transform the raw data from these interviews into excel sheets and heat maps.
- The look zones for each question were generally divided into: instructions, starting materials, products, and the reaction arrow.
- The initial time set to capture the number of fixations in each look zone was the first ten seconds from when questions were asked. However, this was later proven ineffective as ten seconds provided insufficient data to be analyzed.

### Results

- The average number of fixations for the participants were: 92 for participant 4, 54 for participant 8, 113 for participant 11, and 10 for participant 13. Participant 13 is the least accurate data set as it has the least number of fixations.
- The average first look zone for participant 4 and 8 is 13 to 4. The chosen data sets were the ones with the most precise data in order to minimize error. These consisted of participants 4 and 8, who were students, and 11 and 13 who were professors.
- The number of participant data sets transformed and further explored went from 13 to 4. The chosen data sets were the ones with the most precise data in order to minimize error. These consisted of participants 4 and 8, who were students, and 11 and 13 who were professors.
- The average first look zone for participant 4 and 8 for all questions tended to focus on starting materials first. Participant 11 tended to focus on instructions first, as opposed to participant 13 which initially focused on starting materials.
- Student participants had similar data trends while the professors had contrasting results.
- Student participants had similar data trends while the professors had contrasting results.
- The average number of fixations for all questions was highest for the starting material. The second most focused area was the products and reaction arrow, with the instructions look zone coming in last.