

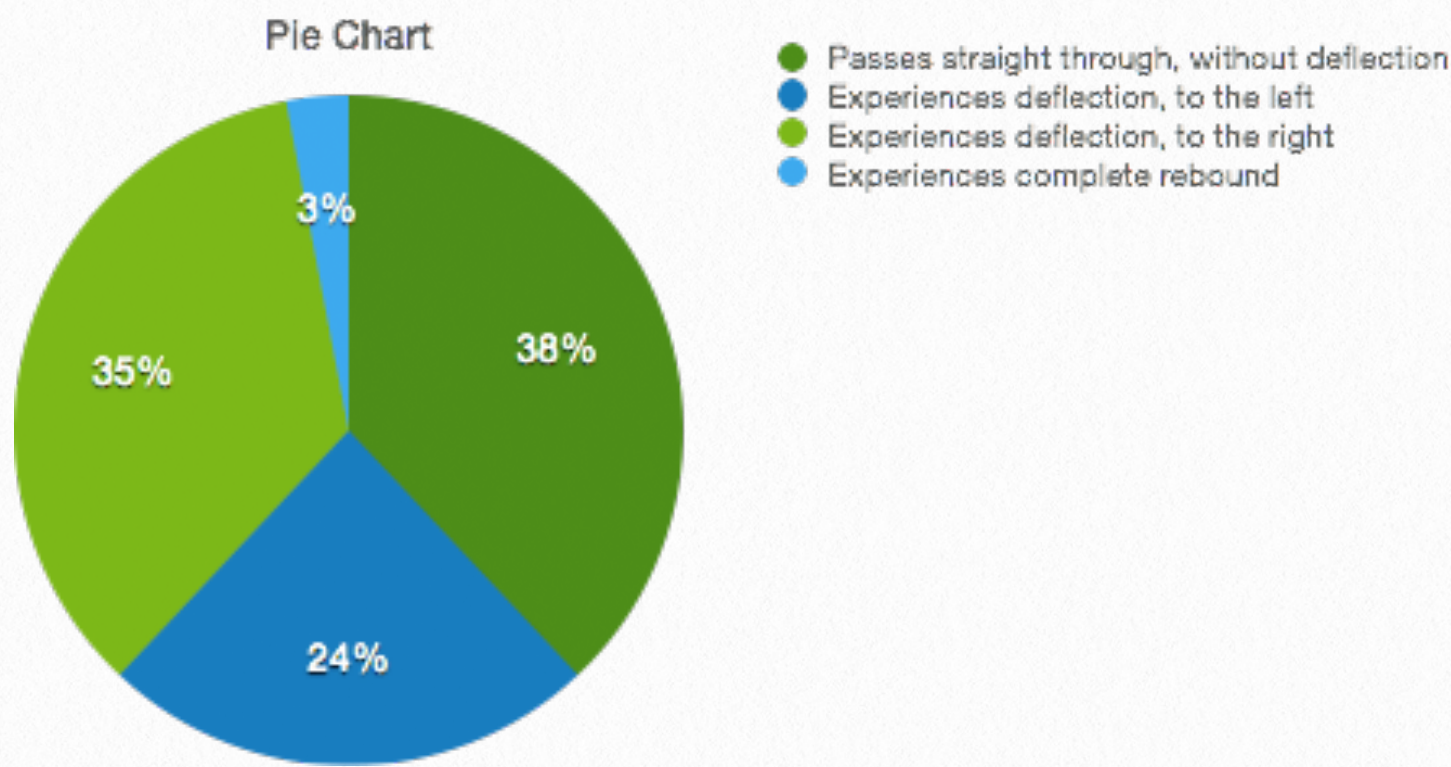
Answers

Experiment - The Scattering Experiment

Sample Data

Direction of Ball Bearing	Number of Ball Bearings
Passes straight through, without deflection	38
Experiences deflection, to the left	24
Experiences deflection, to the right	35
Experiences complete rebound	3

Sample Graph



Conclusion

1. The majority of the ball bearings pass straight through or are deflected slightly. Very few (3%) completely rebound.
2. This does mirror Rutherford’s experiment, although a much smaller percentage rebounded in his experiment. This is because the relative size of the gold nucleus is much, much smaller than the 100g masses used above.

Evaluation

1. The experiment could be repeated with much smaller “gold nuclei”. Instead of 100g masses, 20g masses could be used (smaller diameter) and could be secured to the table with blue tack. A much larger sample size should also be used. If everybody in the class performed the experiment and collated results together, the sample size would be more appropriate (e.g. 1000 results instead of 100)