

Abstract Submitted  
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**Simplifying Avogadro's Number an Activity for Teachers** JAMES

ROBERTS, BETTY CROCKER, University of North Texas — One of the outstanding discoveries of the 19<sup>th</sup> century was the observation that a volume of gas molecules confined to 22.4 liters at standard pressure and temperature had a fixed number. This number is Avogadro's number. One of the activities of the Regional Collaborative for Excellence in Science Teaching at UNT is for the teachers to understand the concept of this large number and to then use an activity with current flow through a Copper Sulfate solution to get a number that is proportional to Avogadro's number through electron counting. This activity shows how very large numbers can be arrived at by taking fractions of the whole and extrapolating to large numbers. The activity uses a known count of pennies whose mass is obtained and this fraction used to obtain the number of units (coins) that would be in a mass of Avogadro's number of coins. The coins are assumed to be proportional to atoms. Faraday's laws of electrolysis are used in the electroplating process to extract Copper ions from solution to form Copper. The mass of the Copper is obtained, the fact that it is bivalent is used to show that it takes two electrons to form Copper from the Copper ion extracted from the solution by electric current flow.

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