

Scientists and Their Experiments with the Atom

Summary

Students will give group presentations on various scientists and their experiments. They will use labs, activities, handouts, etc. to present the ideas.

Time Frame

3 class periods of 70 minutes each

Group Size

Small Groups

Materials

- [Atomic Practice Sheet](#)
(attached)
- [Chemistry Presentation sheet](#)
(attached)

Background for Teachers

Time Needed:

Day 1-30 min., Day 2-85 min., Day 3-85 min. Other days will be needed for the presentation days of the students. Usually 2 groups can go after Group F's presentation (an explanation of this will be given on Day 2). So, approximately 3 full days on top of these will be required.

Safety considerations:

Students will need to be supervised during activities and demos and should follow each individual safety precautions of each.

Student Prior Knowledge

None, this is an introduction. Students will be given a worksheet to become more familiar with the scientists.

Instructional Procedures

Day 1

Hand out the Atomic Practice search sheet attached. Give students approximately 30 minutes to match the scientists (scientists can be added or removed for your appropriate class). Give students about 30 minutes to find out about the subjects. They will not finish, but at least they now have been introduced to each scientist. The answers can be found in Chp. 3 of the Conceptual Chemistry 2nd Edition by John Suchocki and Chp. 3 of the World of Chemistry book by Zumdahl.

These are the answers to the Atomic Practice Search:

Democritus
Rutherford
J.J. Thomson
John Dalton
Aristotle
Lavoisier
Lavoisier

Lavoisier
Rutherford
Lavoisier
Lavoisier
Lavoisier
Rutherford
Dalton
Aristotle
Democritus
Dalton
Dalton
J.J Thomson
Lord Kelvin

Day 2

Go over the Atomic Practice sheet with the students.

Hand out the Chemistry Presentations paper to the students to introduce the Chemistry Presentations project. Go over the grading and split the class into 6 groups. It's a good idea to draw for which groups receive which subjects because some will go first or want a certain topic. This way they don't feel gyped. Give them time to write down the group names and numbers of the other students in their groups.

Give the students the "Notes from class presentations" packet. Give them the rest of the day to look up the information on the packet in their books. They only fill in their section-they will get the rest of the information from the other group presentations. The students can also divvy up some of the assignments to bring back to work on next class (for example, someone can look up information and bring materials to make it next class).

Have the students turn in anything they want copied for the presentations and a list of chemicals they need 2 class periods before their presentations. They are welcome to practice demos before or after school (with teacher supervision).

If these presentations are done during Halloween, it's fun to have Group F be a special group. They can do Halloween demos and can plan fun little activities at the beginning of class for 3 class periods. You can buy the "Chemystery of Halloween" kit out of the Flinn catalog with catalog no. AP2101. It's a relatively short and fun way to begin class during a fun time of year. Their handouts can be Halloween goodies. Group F could be used as a Christmas demo. group etc. you can have just 5 groups.

Day 3

Give them this day to practice any skits or run through their plans. They can receive help from the teacher and can plan out perfectly the order and how their presentation will flow. They can be making posters, practicing demos, practicing their lines, and planning everything they need to bring. From here on out, the students need to meet together outside of school if they need more time to prepare.

To give the students some help, it's nice to give them some ideas and demos. The following can be given to the groups:

Group A: The students can bring chocolate chip cookies are a great handout to show what the Plum Pudding Model looks like.

Group B: "Tear an Aluminum can in Half" demo

Group C: "Conservation of Mass" demo

Group D: [Rutherford's Experiment](#) is a great website to use for Rutherford.

Group E: "Get Yourself Organized" demo

Group F: It's fun if the students dress up.

Assessment Plan

Scoring Guide:

Have the students hand in their chemistry presentations grading paper with the students' objectives and names. The presentations can be graded as the students do the presentations (this saves so much time!!!). Give the group a total score. Anonymously have all the students give a participation score out of 10-so this will be an individual score.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)