# Atoms through the Ages

Time Allotted: 60-90 Minutes

<table>
<thead>
<tr>
<th><strong>Objectives</strong></th>
<th>Given a specific scientist’s model of an atom, the students will research the model and scientist and explain their findings by creating a ToonDoo comic strip and presenting it to the class.</th>
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</table>
| **Audience**   | - 8<sup>th</sup> grade students  
- Basic computer skills  
- Computer access |
| **Indiana State Standards** | 8.1 The Nature of Science and Technology |
| **Materials**  | - A computer for each group of students  
- Research materials i.e. textbooks, Internet, etc.  
- ToonDoo.com |
<p>| <strong>Procedure</strong> | 1. The teacher will divide the class into groups of three to five and then give each group a scientist and the model of an atom associated with that scientist. |</p>
<table>
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<tr>
<th>Scientists: Democritus, Rutherford, Dalton, Bohr, Thompson, Schrödinger, and Pauli</th>
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<tr>
<td>2. The teacher will present and explain how to use ToonDoo.</td>
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<td>3. The teacher will give the groups 30 minutes to research the scientist and the atom model, finding the following things:</td>
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<tr>
<td>• The lifetime of the scientist</td>
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<td>• Country where scientist performed work</td>
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<td>• Dates of important atomic findings</td>
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<td>• Image of atom model</td>
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<td>4. The teacher will give the students an additional 15 minutes to create a two- or three-block comic strip on ToonDoo, using their research.</td>
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<td>5. The students will present their comic strip, scientist, and atomic model in a 3-5 minute presentation.</td>
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<thead>
<tr>
<th>Assessment</th>
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<td>4- Excellent. The students equally participated, found all the required information, and presented a complete understanding of the content through their comic strip and presentation.</td>
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<tr>
<td>3- Good. The students somewhat equally participated, found most or all of the required information, and presented a moderate understanding of the content through their comic strip and presentation.</td>
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<tr>
<td>2- Needs Improvement. The students barely participate equally, found some of the required information, and presented a basic understanding of the content through their comic strip and presentation.</td>
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<tr>
<td>1- Inadequate. The students did not participate equally, found little of the required information, and presented little to no understanding of the content through their comic strip and presentation.</td>
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<tr>
<td>0- The students did not complete.</td>
</tr>
</tbody>
</table>
## References
- Science Joy Wagon [www.regentsprep.org](http://www.regentsprep.org)
- Clackamas Community College [http://dl.clackamas.edu/ch104-04/dalton%27s.htm](http://dl.clackamas.edu/ch104-04/dalton%27s.htm)
- Vigyan Prasar Science Portal [www.vigyanprasar.gov.in](http://www.vigyanprasar.gov.in)
- Chemical Heritage Foundation [www.chemheritage.org](http://www.chemheritage.org)
- Purdue Chemical Education [http://chemed.chem.purdue.edu/genchem/history/schrodinger.html](http://chemed.chem.purdue.edu/genchem/history/schrodinger.html)

## Resources
- **Lesson Plan**
  Lesson plan adapted from the lesson plan in the resources of the Indiana State Education Standards for eighth grade.
- **Pictures**
- Rutherford model [www.mylnn.net](http://www.mylnn.net)
- Atom cloud [www.encyclozine.com](http://www.encyclozine.com)