

Arkansas State Standards Addressed:

Chemistry II

CII-PS5-2AR Plan and conduct an investigation to calculate changes in energy within a system and/or energy flows in and out of a system.

Learning Goals:

Students will...

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| Understand astronauts living on the International Space Station (ISS) need to maintain breathable air. | |
| Know how scientist use the electrolysis process to produce breathable air. | Do a lab experiment to construct an electrolytic cell and compare it to the Oxygen Generator System on the ISS. |

Materials and Procedures Needed:

'A Breath of Fresh Air' lesson overview can be found on NASA's Educator's website:

https://www.nasa.gov/audience/foreducators/mathandscience/research/Prob_BreathFreshAir_detail.html

The Educator Edition can be found directly here:

https://www.nasa.gov/pdf/593947main_AP_ED_Chem_BreathofFreshAir.pdf

Additional Resources at Bentonville Public Library:

BPL has a variety of books and other resources available about space and chemistry. Here are a few of our suggested resources.

Books:

AP Chemistry, 2017 by John T. Moore [YPRP 540 MOO]

Home Address: ISS: International Space Station by James Buckley [JNF 629.442 BUS]

Earth and Space by Mike Goldsmith [YANF 500 GOL]

BPL's Student Portal:

eLibrary Science

Rosen Core Concepts Chemistry

Rosen Core Concepts Periodic Table

Explore Space Exhibit Information:

Explore Space: A Cosmic Journey, a traveling exhibition for libraries, is part of the STAR Library Education Network (STAR_Net) led by the National Center for Interactive Learning at the Space Science Institute. Exhibit partners include the American Library Association, the Lunar and Planetary Institute, and Afterschool Alliance. Explore Space is supported through a grant from the National Science Foundation.

