

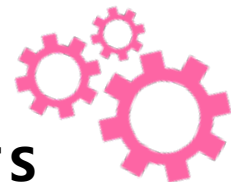
STEM IN THE LAB
innovate. explore. discover.



OUR MISSION

INL's K-12 STEM Program works to inspire Idaho's future STEM workforce, impact students, teachers and families by integrating best practices in STEM education, and empower employees to become STEM mentors to transform K-12 STEM into a driver for innovation.

STEM IN ACTION



FLOATING GARDEN OF MAGNETS

Floating magnets can be used to model atomic structures. While not a perfect simulation, floating magnets can be arranged to repel each other in the same way like-charged electrons might repel each other in an atom. You can be creative about how to get magnets to float. For example, magnets could be attached to buoyant craft foam, placed in film canisters, or attached to corks. Regardless of how you get the magnets to float, they must be attached in the same polarity in order to repel each other. Let all your magnets stick to each other. As you peel them apart, mark the top sides of the magnets. This is the side you should attach to the floating device. In a plastic container of your choosing, add floating magnets one by one. What do you notice? What patterns form? As you continue to add magnets, circles may form. How many magnets are in each circle? Research how electrons space themselves out around a nucleus. How many electrons fit into each energy level?

TRY THIS AT HOME

If you enjoyed this STEM activity, try extending it at home. Try different ways of getting the magnets to float. Research different electron orbital filling models. Learn about s, p, d, and f orbitals by researching the topic on your computer. Learn how to fill out electron orbital configurations. Ask yourself why this information might be so important to scientist. What does an atom do if it has an unstable outside electron shell?

CAREERS IN STEM

BUILDING STEM SKILLS

A career in STEM could be a part of your future. If you enjoyed this STEM activity, solving problems, and the engineer design process, then consider becoming a chemist at INL. Chemistry is the scientific study of matter, its properties and interactions with other matter and energy. Chemistry is applicable to a wide selection of careers. At INL some chemists work as a part of INL's mission to discover groundbreaking clean-energy solutions.

STUDENTS + PARENTS + EDUCATORS

For information on grants, training and student opportunities; curriculum ideas and resources, please visit us at: stem.inl.gov.

