

Science Graduation Guidance



High School Science

Credits

OPTIONS IN COURSE SEQUENCES

The graduation requirements outlined by the Kansas Department of Education state that students should earn three credits in the areas of science that include concepts of Life Science, Physical Science and Earth/Space Science. The intent is that all the standards in these areas are mapped to courses at the local level, however, *KSDE does not dictate which courses are required*. We recognize that student choice and agency is important and such intend for the below to only serve as guidance while making decisions at the local level.

Quick Links

- [Physics](#)
- [Chemistry](#)
- [Biology](#)

Life Science- The standards are commonly mapped to the area of life science at the intro level and are commonly associated with the course called "**Biology**" with course code **03051**.

Physical Science- The standards for this area are commonly mapped into intro level courses called "**Physical Science**" with course code **03159** or "Physics" with a course code of **03151** **and** "**Chemistry**" with a course code of **03101**. If a student takes only Chemistry **or** Physics, they are likely missing some of the state standards.

Earth and Space Science- The standards for this area are commonly mapped into intro level courses called "**Earth Science**" with course code **03001**. While many courses might match the Earth and Space Science topics, it is important that the standards are reflected in the introduction level courses. For example, a course such as Astronomy 03004, would also need to include the topics of atmospheric science.

Historical Arrangement

While the arrangement above is an option for implementing the state standards, KSDE Science recognizes that the recommended courses vary greatly across the state. Historically across the nation a sequence including the Physics, Biology, and Chemistry has been identified as the

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most common. For this reason the outlined scope and sequence below utilizes this sequence and incorporates the Earth and Space standards into discipline courses where it best aligns.

Life Science (Biology)

<p><u>STRUCTURES AND PROCESSES OF LIFE</u></p> <p>HS-LS1-1 HS-LS1-2 HS-LS1-3 HS-LS1-4 HS-LS3-1 HS-LS3- 2</p> <p><u>ECOSYSTEMS</u></p> <p>HS-LS2-1 HS-LS2-4 HS-LS2-6</p>	<p><u>NATURAL SELECTION</u></p> <p>HS-ESS2-7 HS-LS3-3 HS-LS4-5 HS-LS4-1 HS-LS4-2 HS-LS4-3 HS-LS4-4 HS-LS2-8</p> <p><u>BioDIVERSITY</u></p> <p>HS-LS2-2 HS-LS2-7 HS-LS4-6 HS-ESS2-2 HS-ESS3-3 HS-ESS3-2</p>
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Physics

<p><u>1 DIMENSIONAL MOTION</u></p> <p>HS-PS2-1 HS-PS2-2 HS-PS2-3</p> <p><u>GRAVITY AND ORBITS</u></p> <p>HS-PS2-4 HS-ESS1-4 HS-ESS1-6</p> <p><u>EARTH'S SURFACE & INTERIOR PROCESSES</u></p> <p>HS-ESS2-3 HS-ESS2-1 HS-ESS1-5</p> <p><u>ENERGY CONVERSION</u></p> <p>HS-PS3-2 HS-PS3-3</p>	<p><u>ELECTRICITY & MAGNETISM</u></p> <p>HS-PS2-5 HS-PS3-5</p> <p><u>CLIMATE CHANGE</u></p> <p>HS-PS3-1 HS-ESS2-4 HS-ESS3-1 HS-ESS3-4 HS-ESS3-5 HS-ESS3-6</p> <p><u>ELECTROMAGNETIC RADIATION & TECHNOLOGY</u></p> <p>HS-PS4-1 HS-PS4-2 HS-PS4-3 HS-PS4-4 HS-PS4-5</p>
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Chemistry

<p><u>PERIODIC TABLE AND BONDING</u></p> <p>HS-PS1-1 HS-PS1-2</p> <p><u>INTERMOLECULAR FORCES</u></p> <p>HS-PS1-3 HS-PS2-6 HS-ESS2-5</p> <p><u>CHEMICAL REACTIONS AND BOND ENERGY</u></p> <p>HS-PS1-4 HS-LS1-7 HS-LS1-5 HS-LS2-3</p>	<p><u>CYCLING & CONSERVATION OF MATTER</u></p> <p>HS-PS1-7 HS-LS1-6 HS-LS2-5 HS-ESS2-6</p> <p><u>KINETICS & EQUILIBRIUM</u></p> <p>HS-PS1-6 HS-PS1-5 HS-PS3-4</p> <p><u>NUCLEAR ENERGY</u></p> <p>HS-ESS1-2 HS-ESS1-1 HS-ESS1-3 HS-PS1-8</p>
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For more information, contact:

Meg Richard
STEM Education Program Manager (Science)
Career Standards and Assessments
(785) 296-8108
mrichard@ksde.org



Kansas State Department of Education
900 S.W. Jackson Street, Suite 102
Topeka, Kansas 66612-1212

(785) 296-3201

www.ksde.org

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November 2023

Kansas leads the world in the success of each student.