Guidance & FAQs

Oklahoma Science Standards and Preparing Students for the ACT

Introduction

In high school, all Grade 11 students take the College and Career Readiness Assessment (CCRA) for Science. Results from the CCRA can be used to inform school and district level changes to programs and curriculum. It can also help schools measure how students in a given class, school, or district are performing in relation to other students who take the same test. As such, CCRAs serve as a component of the Oklahoma School Report Card to meet state and federal accountability requirements.

Grade 11 high school students also take the ACT. The math and ELA components of the ACT are used to assess student understanding, aligned with the Oklahoma Academic Standards (OAS) for those subjects. The science portion of the ACT is not aligned to the OAS-S and therefore cannot be used to assess student proficiency in science.

In an effort to clarify information and showcase how the OAS-S can be used to prepare students for the ACT, the OSDE has compiled the following frequently asked questions and resources.

Frequently Asked Questions

Q: What does the science portion of the ACT evaluate?

The science section of the ACT measures the interpretation, analysis, evaluation, reasoning, and problem solving skills required in the natural sciences. Background knowledge acquired in general, introductory science courses *may be* needed to correctly answer some of the questions.

For more information on the science portion of the ACT, visit Science Test Description for the ACT.

Q: What does the Grade 11 College and Career Readiness Assessment (CCRA) for Science evaluate?

The CCRA-Science measures student understanding and skills aligned with the Oklahoma Academic Standards for Biology and Physical Science. Knowledge of biology and physical science concepts, as well as the application of science and engineering practices and crosscutting concepts, *are required* to correctly answer assessment questions.

For more information on the CCRA-Science, including the specific standards assessed, visit OSDE's CCRA webpage to review the Test Blueprint and/or the Test and Item Specifications.

Q: Why doesn't Oklahoma use the ACT for the Grade 11 science test?

Under the federal law, Every Student Succeeds Act (ESSA), states are required to develop and implement challenging academic standards in core subjects, including science, and to assess student proficiency aligned to those standards through standardized tests (ESSA Title 1, Part A, Section 1111(b)(2)(B)). As the science portion of the ACT is not aligned with the Oklahoma Academic Standards for Science (OAS-S), the ACT cannot be used to evaluate student proficiency in science.

To meet ESSA requirements, Oklahoma uses the Grade 11 College and Career Readiness Assessment (CCRA) for Science to evaluate student proficiency of the OAS-S.

Q: If the Oklahoma Academic Standards for Science and the ACT science standards are so different, how are students prepared to take the science portion of the ACT?

While there are differences between the two sets of standards, there is some overlap between OAS-S's eight science and engineering practices and ACT's three science skills (see table below).

OAS-S Science & Engineering Practices	ACT Science Skills
1. Asking Questions and Defining Problems (Q&P)	Scientific Investigations (SIN)
2. Developing and Using Models (MOD)	Interpretation of Data (IOD) Evaluation of Models, Inferences, and Experimental Results (EMI)
3. Planning and Carrying Out Investigations (INV)	Scientific Investigations (SIN)
4. Analyzing and Interpreting Data (DATA)	Interpretation of Data (IOD) Scientific Investigations (SIN)
5. Using Mathematics and Computational Thinking (MATH)	Interpretation of Data (IOD) Scientific Investigations (SIN)
6. Constructing Explanations and Designing Solutions (E&P)	Evaluation of Models, Inferences, and Experimental Results (EMI)
7. Engaging in Scientific Argument from Evidence (ARG)	Evaluation of Models, Inferences, and Experimental Results (EMI)
8. Obtaining, Evaluating, and Communicating Information (INFO)	Interpretation of Data (IOD) Evaluation of Models, Inferences, and Experimental Results (EMI)

*Click here for a printable version of this table.

Q: When do students learn and experience the science skills evaluated by the ACT?

The ACT does not identify when students may learn a specific science skill.

The OAS-S does identify when students should learn a specific science and engineering practice (SEP). Educators can use the Science Vertical Learning

Progressions to examine when students learn and experience specific SEPs across their K-12 education. The SEPs are also identified in every standard (blue box).

Q: Is there a resource that crosswalks the OAS-S science and engineering practices with ACT's science skills??

The OSDE has an example crosswalk that identifies the similarities between the science and engineering practices (SEP) dimension of the OAS-S and the ACT science standards. Teams of educators can use this resource to identify how the SEPs support students in developing the science skills assessed on the ACT.

Linked Resources for Additional Guidance:

Oklahoma State Law and Federal Regulations

- Title 70 (Schools) Legislation
- Oklahoma Graduation Requirements

Oklahoma Academic Standards and Grade 11 Assessment Resources

- Oklahoma Academic Standards for Science
- CCRA Science Test and Item Specifications (Grade 11)

Additional Resources for Schools

- OSDE Science Website: This website provides resources, guidance, and support for science instruction.
- OSDE Office of Assessment Website: This website provides resources, guidance, and support for science assessment.
- Oklahoma Science Framework: This website provides example instructional strategies for implementing the Oklahoma Academic Standards for Science (OAS-S).
- OSDE High-Quality Instructional Materials Website: This website provides robust reviews, guidance, and support for district-level adoptions of high-quality instructional materials.