Power Up: Science ACT Prep, Week 2

Teresa Lansford, Keiana Cross, Laura Halstied
Published by *K20 Center*

Time Frame 35

Essential Question(s)

How can I increase my ACT score?

Summary

In this second science ACT prep activity, students learn about key vocabulary in the science test and strategies for when they are unfamiliar with the content in the science passages. First, students view a science passage that contains scrambled words to practice still finding a correct answer when the science content is confusing. Students then sort common ACT science words and definitions, followed by matching words to their definitions. They can use these cards to continue to practice learning the vocabulary and can select it as one of the actions for their goal sheet in coming weeks. This is the second activity in a 10-week "Power Up" series for ACT Prep.

Learning Goals

- Understand the content expectations for the science test
- Make connections between science terms and concepts

Attachments

- Activity Slides—Power Up Science ACT Prep, Week 2.pdf
- Activity Slides—Power Up Science ACT Prep, Week 2.pptx
- Science Definitions Sort—Science ACT Prep, Week 2 - Spanish.docx
- Science Definitions Sort—Science ACT Prep, Week 2 - Spanish.pdf
- Science Definitions Sort—Science ACT Prep, Week 2.docx
- Science Definitions Sort—Science ACT Prep, Week 2.pdf
- Science Word Card Sort—Science ACT Prep, Week 2 - Spanish.docx
- Science Word Card Sort—Science ACT Prep, Week 2 - Spanish.pdf
- Science Word Card Sort—Science ACT Prep, Week 2.docx
- Science Word Card Sort—Science ACT Prep, Week 2.pdf

Materials

- Activity Slides (attached)
- Science Word Card Sort (attached; one per student preferably on card stock)
- Science Definitions Sort (attached; one per student preferably on card stock)
- Goal Sheet from Week 1 (optional)
- Pens/pencils

5 minutes

Introduction

Teacher's Note: ACT Enhancements

The following resource has been updated to better align with the test changes that began in April 2025 for the online test and in September 2025 for the paper-pencil test. Some outside resources linked are based on the previous version of the ACT. Learn more about enhancements to the ACT in 2025.

Teacher's Note: Lesson Preparation

Students will perform a card sort and matching words and their definitions in this lesson. It is best to print these on cardstock because students will be marking the backs to indicate matching pairs and the print will show through otherwise. Students will also be expected to use these for practice, and cardstock will extend the life of the cards. Before this session, print and cut a set of words and definitions for each student.

Use **Activity Slides 1-4** to introduce the activity, share the essential question, and the objectives. Show **slide 5**. This slide features a sample science question. However, all of the science words have been scrambled. This exercise is designed to help students understand the real focus of the science ACT. The task is often more about question knowledge and understanding what is being asked rather than the content alone. Ask students to take a look at the slide and try not to worry about words they may not understand. Ask them to see if they can figure out what the correct answer choice is for the question on the slide. Give students time to settle on an answer and then review the correct answer on **slide 6**. Remind students that the science test covers a range of possible science topics, and it may have been a while since they have learned about them in class, or they may have not even learned about them yet. This doesn't mean they can't use their skills in decoding words to figure out meaning; or most importantly, pay attention to what the question asks. They can still find the right answer. Ask students: "What clues did you use to figure out the right answer?"

Sample Student Responses

- "It asked about the gamtenic field, and I could tell I just needed to find what is tied to that phrase."
- "I narrowed it down to the two words mentioned in the passage."

Show **slide 7**. Ask students to identify what strategies they used to tackle multiple choice questions. Start an Anchor Chart for strategies. As a class, write down some strategies for answering the science questions on the Anchor Chart. As students use these new strategies, refer to the chart in the coming weeks. Tell students these are strategies they can test out to find out which works best for them.

Remind students that the science test comes last on the ACT. It is easy to feel fatigue and to see so many words that aren't part of daily life. This can be intimidating. However, the science test is often one of the easiest exams to boost their score if they learn a few simple power ups. That is what we will focus on in the next few weeks.

Teacher's Note: Talking About Strategies

Accept all strategies, but be prepared to talk about the limitations of each. For example, some students may guess. There is a point on some ACT questions where guessing is the best option (if the question is taking too much time or the test time is ending soon). However, it may not be the best option in all situations. Make sure to take time to talk about strategies and how they work for students across the lessons.

20 minutes

Activity

Explain that although there are tips and tricks to powering up their science score, there may also be a few questions that require knowledge about science topics. The tips and tricks covered in the next few weeks may help to bypass some of the trouble with the science test, but it's still important to learn about the science topics. Understanding some concepts covered on the test helps ensure students are college-ready. The acquired knowledge also helps position them to guess less on the test. The ACT provides a list of recommended science words to review for the test in their Official ACT Science Guide. These are words given out by the test makers themselves, so it is good to pay attention to what may be on the test.

Show **slide 8**. Hand out the **Science Word Sort** handout. Ask students to sort the words by grouping those that they think go together. Let students know they may be familiar with all of these words or just some of them. Let them know that it is okay to guess for this activity.

Teacher's Note: Unfamiliar Words

Students may make an "I don't know these words" group. This category is fine to have and helps students target what they might want to practice.

After giving the students a few minutes to sort, show **slide 9** and ask them to compare with an elbow partner. They can make adjustments if they want, but it is not required.

Next, show **slide 10**. Tell students they will perform a different sort with definitions rather than words. Pass out the **Science Definitions Sort** handout and ask them to sort these new cards. Ask which was easier to sort and why.

10 minutes

Wrap-Up

Display **slide 11**. This slide is the key for the vocabulary words and their meanings. Ask students to match up their cards according to the key. Then, for each pair, mark the back right corners with the same number/color of dots to indicate a pair. For example, one black dot pair, two black dot pair, one blue dot pair, three red dot pair. Once they are matched, if there is time, have students see how well they can match the words and definitions by shuffling and matching without looking at the backs of the cards.

Move to **slide 12**. Explain that understanding the meaning of these words can give them a boost in the coming weeks and that they could use this as an action on their goal-setting sheet to practice matching these words as one of their ACT actions. Give students time to revisit their goal sheet and add this as an action or reflect on their progress toward their goals, if time allows.

Use **slide 13** to celebrate their achievement toward increasing their ACT score by powering up their vocabulary this week.

Teacher's Note: Vocabulary & Definition Cards

You can opt to have them leave the cards in class and occasionally devote bell work time to sorting or send them home for independent practice.

Research Rationale

Standardized testing in high schools has long been used as a metric for assessing college readiness and school accountability (McMann, 1994). While there ha been debates surrounding the accuracy of such metrics, as well as concerns regarding equity, many institutions of higher education continue to make these scores part of the admissions process (Allensworth & Clark, 2020; Black et al., 2016; Buckley et al., 2020). In addition to admissions, it is important to keep in mind that standardized test scores can also provide students with scholarship opportunities they would not otherwise have (Klasik, 2013). Although the topic of standardized testing is often debated, effective test preparation can ensure that students are set up for success.

With several benefits to doing well on college admissions tests, it is important to consider how best to prepare students for this type of high-stakes test. Students from groups that may historically struggle to find success, such as those in poverty or first-generation college students, especially stand to benefit from effective test preparation (Moore & San Pedro, 2021). The American College Test (ACT) is one option students have for college admissions testing that is provided both at national centers and school sites. Taking the time to understand this test, including the timing, question types, rigor, and strategies for approaching specific questions, can help prepare students to do their best work on test day and ensure their score is a more accurate representation of what they know (Bishop & Davis-Becker, 2016).

Resources

- ACT. (2020). *The official ACT science guide*. John Wiley & Sons.
- Allensworth, E. M., & Clark, K. (2020). High school GPAs and ACT scores as predictors of college completion: Examining assumptions about consistency across high schools. Educational Researcher, 49(3), 198-211.
- Bishop, N.S. & Davis-Becker, S. (2016). Preparing examinees for test taking: Guidelines for test developers and test users. 2nd edition. Crocker, L. (Ed). In *Handbook of test development* (pp. 129-142). Routledge.
- Black, S. E., Cortes, K. E., & Lincove, J. A. (2016). Efficacy versus equity: What happens when states tinker with college admissions in a race-blind era? *Educational Evaluation and Policy Analysis*, 38(2), 336–363. http://www.jstor.org/stable/44984542
- Buckley, J., Baker, D., & Rosinger, K. (2020). Should state universities downplay the SAT? *Education Next*, 20(3).
- K20 Center. (n.d.). Anchor chart. Strategies. https://learn.k20center.ou.edu/strategy/58
- K20 Center. (n.d.). Card sort. Strategies. https://learn.k20center.ou.edu/strategy/147
- K20 Center. (n.d.). Elbow partners. Strategies. https://learn.k20center.ou.edu/strategy/116
- Klasik, D. (2013). The ACT of enrollment: The college enrollment effects of state-required college entrance exam testing. *Educational Researcher*, 42(3), 151–160. http://www.jstor.org/stable/23462378
- McMann, P. K. (1994). The effects of teaching practice review items and test-taking strategies on the ACT mathematics scores of second-year algebra students. Wayne State University. https://www.monroeccc.edu/sites/default/files/upward-bound/McMannP.-the-effects-of-teaching-practice-review-items-ACT-mathematics-second-year-algebra.pdf
- Moore, R., & San Pedro, S. Z. (2021). Understanding the test preparation practices of underserved learners. *ACT Research & Policy*. Issue Brief. ACT, Inc. https://files.eric.ed.gov/fulltext/ED616526.pdf