Preparing Students for the ACT Through Core Instruction

Professional Learning Workshop

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Learning intentions:

Be able to describe

- What does and does not work in ACT prep
- Alignment between the ACT and Utah Core Standards
- Instructional practices in English, writing, math, and science that improve ACT outcomes

Research About ACT Prep:

What doesn't work

Spending _____ on test prep does not make students more prepared for the ACT.

What does work?

_____ academic atmosphere

_____ academic curriculum

College prep attitude/environment for _____ students

_____ _____ skills

Good school _____

_____ student _____ _____ _____

Research conclusions

80% of 11th graders & 60% of teachers – thought scores due primarily to test-taking skills [1]

Not the case! [2]

- ACT requires long-term skills
  - Higher-order _____ skills
  - Problem-solving skills
  - _____ reading
  - _____ analysis
  - Attention to details
  - Ability to _____ well

Long-term preparation matters

Research says . . .

- Children who do not read proficiently by the end of third grade are four times more likely to leave school without a diploma than proficient readers.[3]
- Students who arrive at school ready to learn but then miss 10 percent of kindergarten and first grade score 60 points below regularly attending students on third-grade reading tests, on average.[4]
- Absenteeism strongly correlates with poor student outcomes, K – 12.[5]
- Mastery of early math skills predicts future math achievement and future reading achievement - just as reliably as early literacy mastery of vocabulary, letters and phonetics predicts later reading success.[6]
- For more information go to Predictors of Post-Secondary Success from American Institutes for Research (https://ccrscenter.org/sites/default/files/CCRS%20Center_Predictors%20of%20Postsecondary%20Success_final_0.pdf)

Instructional Practices in English and Writing

How to Prep – English/LA Classes

- Ask students to _____ a piece of writing

- Have students _____ how writers use tools like symbolism
- Students should _____ how culture, time, or place affects an author's writing
- Get students to _____ the meaning of their readings
- Have students _____ papers or essays in response to comments
- Teach the _____

How to Prepare for ACT English

- Shmoop
- Read, revise, and edit _____ essays
- Grammar games for _____
- Don't worry about ancient Latin-based grammar rules, or the punctuation and grammar rules that vary between style guides
- Focus on how punctuation and grammar affect _____

How to Prepare for ACT Reading

- Shmoop
- Expose students to _____ _____ in these subjects: Prose fiction, literary narrative, social studies, humanities, natural science
- Identify explicit information and _____ conclusions
- Practice active _____ _____ (note taking)
- Compare multiple texts

How to Prepare for ACT Writing

- Discussions and debates
- Write with different purposes for different audiences
- _____ issues and identify authors' perspectives and purposes
- Write with a _____ _____ to practice clearly conveying ideas within a limited timeframe
- Utah Compose
- Shmoop
- Have students practice _____ _____ essays
- Instruct on multiple text structures
- Use outlines

Instructional Practices in Math

How to Prep – Math Classes

- Have students _____ different solutions to problems with each other
- Have students _____ the process for finding solutions in different ways (think-alouds)
- _____ graphing calculators

How to Prepare for ACT Math

- Shmoop
- _____ students to problems presented in a variety of ways: graphical, story problems, equations, and tables
- Remind students to show work
- _____ different problem-solving techniques

How to Prepare for ACT Math, cont.

- Teach the _____
- Use the Math Prompts in Utah _____
- Embed ACT practice problems in classwork (bell work, spiraled review problems, exit tickets)

Big Ideas to Review

- Pre-Algebra: Elementary _____ (Finding exponents and roots, taking absolute value, ordering lists), Basic _____ and Inequalities, Simple Statistics (measures of central tendency, basic probability, reading graphs and charts)
- Elementary Algebra: _____ Operations, Building Expressions and Functions from words and situations, Expand and Condense Polynomials, Factoring
- Intermediate Algebra: Simplify _____ Expressions, Matrices and Complex Numbers, Systems and Quadratic Formula

Big Ideas to Review, cont.

- Coordinate Geometry: Graph: points, slopes of a line, inequalities, and _____ equations. Recognize the graphs of parent functions. Know the basic formulas (slope, midpoint, distance, and conics)
- Plane Geometry: Area, volume, side length, and _____ area formulas for basic shapes (triangle, rectangle, and circle). Definitions and proof techniques
- Trigonometry: 6 Trig Functions, radian measure and the _____ circle, trig on the calculator

Instructional Practices in Science

Science Core Standards and the ACT

- Aligns with _____ (Intended Learning Outcomes)
- Focus on skills and scientific practices

Ex. Biology, Standard 1, Objective 2c
2. c. Distinguish between inference and evidence in a newspaper, magazine, journal or Internet article that addresses an issue related to human impact of cycles of matter in an ecosystem and determine the bias in the article.

Ex. Earth Science, Standard 1, Objective 1b
1. b. Explain how Earth's systems are dynamic and continually react to natural and human caused changes.

Ex. Physics, Standard 5, Objective 1b
1. b. Investigate and compare reflection, refraction, and diffraction of waves.

Ex. Chemistry, Standard 2, Objective 2b
2. b. Interpret graphical data relating half-life and age of a radioactive substance.

Key Phrases in Standards and Objectives

- Use observations to draw conclusions
- Identify/examine evidence
- Describe the evidence
- Design and test a model

- Plan and conduct and experiment
- Investigate possible effects
- Interpret observations and data
- Use data to draw valid conclusions
- Classify items

What do you notice about all of the key phrases?

- Are _____ _____ (skills) that can be applied to _____ subject – cross-curricular too.

Science Crosswalk shows. . .

Big ideas that _____ content areas are the items that are most _____ to be assessed.

Focus on _____ (practices)

How to Prep – Science Classes

- Students should use _____/_____ to support arguments or hypotheses
- Have students _____ their own hypotheses
- Offer opportunities to _____ information from graphs and tables
- _____ and discuss scientific reports
    - good source – Science Daily (https://www.sciencedaily.com/)
- Ask students to _____ lab reports

How to Incorporate ACT Practice

Bellwork:

- Find _____ on Shmoop or Utah Futures that relate to your content area.
- Have students work on questions at the start of class.
- Follow up with _____ _____ _____ to go through answer process (model using logic to answer questions, eliminating incorrect options)
- Point out ACT-science _____ being assessed by the question

During instruction:

- Pick a focus _____ and have students highlight how they are applying the skill (i.e., using data to draw conclusions, identifying evidence, using models, etc.)

Tools you can use

Login to Shmoop

- For a new account go to schools.shmoop.com
- In the purple box, enter the teacher magic word, CANYONLANDS (*changing to MOUNTAINS on August 1st, 2018)
- Choose school
- Click “Create teacher account”
- Enter new user information
- Click “Create Account”

Finding topics to embed in instruction

- Click on “Test Prep”
- Click on “ACT”
- Click on the “Review Topics” tab
- Choose a subject to locate materials

Let's try it

- Explore the review topics tab, practice exams, drills, and videos.
- Find the teacher guide and corresponding handouts. (https://schools.shmoop.com/act-teacher/handouts.html)
- Find the in-depth explanations and other useful review items embedded in the program.

How could you use these items in Core instruction? What do you want to be sure to remember from your exploration today?

More tools you can use

Login to Utah Futures and explore ACT tools and practice tests

- https://www.utahfutures.org/

ACT Academy – new - uses videos and practice items.

- https://academy.act.org/

Cross-curricular Practices

Learn _____ skills and self-evaluation skills

Students should:

- Read questions _____ – determine what the question is asking
- On timed multiple-choice tests
  - Practice _____
  - answer the _____ questions first
  - Use _____ to answer more difficult questions - try to eliminate incorrect answers and compare answer choices
  - Answer every question (for practice ACT and ACT)

Write across content areas

- What: _____ students to be successful on the ACT writing test by
  - Building knowledge through _____-rich texts
  - all grade levels and across subject areas
- How: Argumentative (vs. persuasive)
  - Practice writing sound _____ on substantive topics and issues.
  - Consider 2 or more perspectives
    - Pushes students beyond surface knowledge
    - Must think _____ and deeply
    - Assess the validity of their own thinking
    - Anticipate _____ in opposition to their own assertions
- Discuss: Examples in Math, science, social studies, CTE, as well as ELA:

Where to Find Out More:

- More detailed info on the ACT K12 Educator and Administrator Resources Page (http://www.act.org/content/act/en/products-and-services/the-act-educator/resources.html)
  - Technical Manual & Technical Manual Supplement

Table talk: Core instruction and the ACT – what can you use?

How can you/your teachers use this information to build ACT-related skills in your school?

Trainings, help, and information

Trainings – need more help?

- Need more help? We are happy to come to your district/area
  - Contact Rebecca Peterson for more information
- This same training – repeat
  - October 30, 2018
  - 9 to 11 AM, USBE or via WebEx
- Shmoop trainings (onsite or virtual)
  - Contact Stephanie Weiss

Contact us

- Rebecca Peterson, M. Ed., College and Career Readiness | ACT | Utah Aspire Plus: Rebecca.peterson@schools.utah.gov
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- Scott Roskelley, Science Assessment: Scott.roskelley@schools.utah.gov
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