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

Not the case!
• ACT requires long-term skills
  o Higher-order _____________________________ skills
  o Problem-solving skills
  o _________________ reading
  o _________________ analysis
  o Attention to details
  o 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.
• 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.
• Absenteeism strongly correlates with poor student outcomes, K – 12.
• 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.
• For more information go to Predictors of Post-Secondary Success from American Institutes for Research

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
  o 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
  o Practice ________________
  o answer the ____________ questions first
  o Use ________________ to answer more difficult questions - try to eliminate incorrect answers and compare answer choices
  o Answer every question (for practice ACT and ACT)

Write across content areas
• What: _____________________ students to be successful on the ACT writing test by
  o Building knowledge through ______________________-rich texts
  o all grade levels and across subject areas
• How: Argumentative (vs. persuasive)
  o Practice writing sound ____________________________ on substantive topics and issues.
  o 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)
  o 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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References

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