

Oklahoma *PASS* Science Workshops Break Out Session 2008



Anatomy of an Item

- Multiple-choice items
 - Stem
 - Response Options
 - Correct Answer
 - Distractors
 - Graphics/Artwork (if applicable)

Components of an Item

The lengths of some of the biggest ships ever built are shown in the table below.

SHIPS

Name	Length (in feet)
The <i>California</i>	624
The <i>Iowa</i>	887
The <i>Musashi</i>	862
The <i>Washington</i>	729

Graphic

Stem

What is the range of the lengths of the ships in the table?

Question

- (A) 105
- (B) 263
- (C) 775.5
- (D) 795.5

Options

[last length – first length]

[mean]
[median]

Rationales

Distractors

Stems

- Present one clearly stated question
- Include information that avoids a repeat in each option
- Are clear and concise
- Use the active voice
- Use grade-level appropriate vocabulary
- Include only what is necessary
- Do not cue the answer or miscue a distractor

Graphics/Artwork

- Graphics/Artwork
 - Stimuli are necessary and functional
 - Stimuli are clear, simple, and considerate of students with special needs
 - Stimuli are properly labeled
 - Stimuli are complete
 - Content is current and accurate
 - When used as options, are parallel in format

Good Items Should

- Measure the intended skill or standard
- Be consistent with item writer guidelines and specifications
- Be of appropriate difficulty for the grade level
- Be grammatically correct
- Assess meaningful concepts
- Assess comprehension of the concept

Ensuring Fairness for All Students

Standard 7.4: Test developers should strive to identify and eliminate language, symbols, words, phrases, and content that are generally regarded as offensive by members of racial, ethnic, gender, or other groups, except when judged to be necessary for adequate representation of the domain.

Standards for Educational and Psychological Testing (AERA, APA, NCME, 1999)

Definition of Bias

Bias is the presence of some characteristic of an item that results in differential performance for two individuals of the same ability but from different sub groups.

Stereotyping

- Depicting members of either gender
 - Experiencing stereotyped emotions
 - Participating in stereotyped activities
 - Working in stereotyped occupations
 - Portraying stereotyped characteristics
 - Portraying stereotyped situations
 - Using demeaning labels
 - Showing stereotyping through pictures

Gender Bias

- Titles and specific terms referring to humanity in general (manpower)
- Use of pronouns that imply a stereotype
 - The paleontologist took his team to the fossil site.
- Gender-specific stereotypes
 - Female student is always performing an unsafe lab activity

Ethnic or Cultural

- ❑ Terms that are demeaning and/or offensive to a particular ethnic group or culture
- ❑ Terms that depict a particular group as poor or uneducated

Socioeconomic

- Activities, possessions, or ideas that are not common to all students within a given strata
 - Sports
 - Snow skiing, hockey, swimming in a pool
 - Car makes and models

Other Types of Bias

- Ageism (bias against a particular age group)
 - Irresponsible teens
- Bias against persons with disabilities
 - Despite disability, she was able to . . .
 - Content should show people in everyday situations, and groups should be depicted as fully integrated in the society

Sensitivity Concerns

- ❑ Sensitive topics should be avoided
- ❑ Also to be avoided are
 - Highly charged or controversial topics
 - Topics and/or items that appear to promote or defend a particular set of values
 - References to tragedies or hardships
e.g., floods, earthquakes, and dust storms

Special Circumstances

- ❑ Historical Contexts
- ❑ Literary Contexts
- ❑ Standard/Objective

Improve Accessibility □ Universal Design



CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!

Universal Design

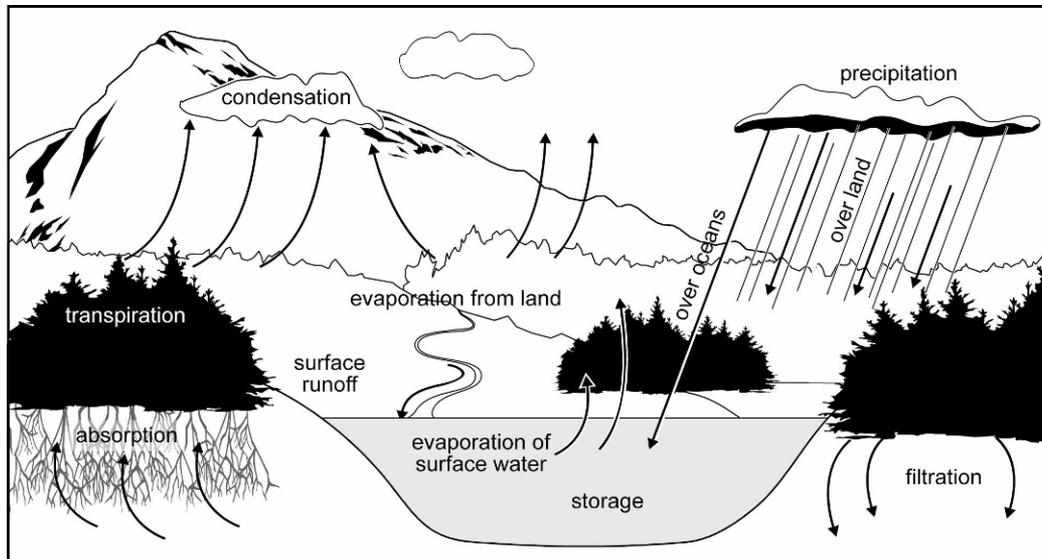
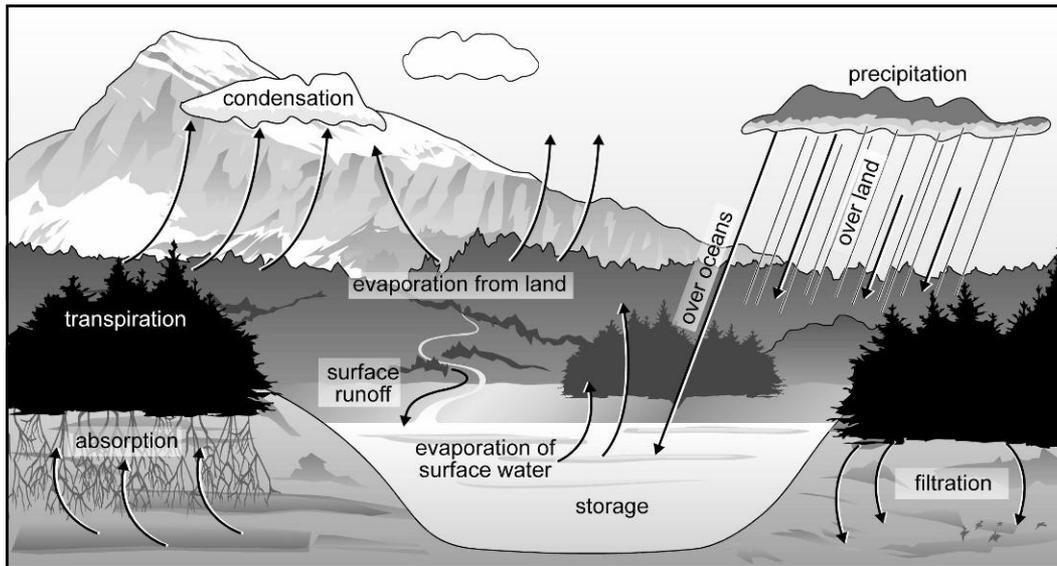
Universally designed assessments are based on the premise that each student in school is a part of the population to be tested and that testing results should not be affected by disability, gender, race, or English language ability.

Universal Design

- Test questions have concise and readable text (EDL resource)
 - Simple, clear, commonly used words are used whenever possible.
 - Unnecessary words and extraneous text are omitted.
 - Vocabulary and sentence complexity is appropriate for the grade level assessed.
 - Technical terms and abbreviations are used only if they are related to the content being measured.
 - Definitions and examples are clear and understandable.

Universal Design

- ❑ Maximum legibility
- ❑ Inclusive assessment
- ❑ Precisely defined constructs
- ❑ Accessible, non-biased items
- ❑ Amenable to accommodations
- ❑ Maximum readability and comprehensibility
- ❑ Simple, clear, and intuitive instructions and procedures



Functional Science Stimuli

Graphs, charts, figures, and diagrams are stimuli.

If an item has a stimulus:

- ❑ The labels, if necessary, are provided.
- ❑ The stimulus must be clear and simple.
- ❑ The content of stimulus is accurate and current.
- ❑ The stem must require its use to choose the correct option.
- ❑ Information should assist students in determining the correct answer.

Questions?
