ACTAAP

Arkansas Comprehensive Testing, Assessment, and Accountability Program

Teacher Handbook

Augmented Benchmark Examination
Grade 5

April 2015 Administration

Arkansas Department of Education

PAGE

The Arkansas Comprehensive Testing, Assessment, and Accountability Program (ACTAAP) includes an Augmented Benchmark Examination for fifth-grade students. It consists of multiple-choice and open-response items that directly assess student knowledge relative to science. The Arkansas Curriculum Frameworks are the basis for development of the Augmented Benchmark Examination.

In April 2015, fifth-grade students participated in the *Grade 5 Augmented Benchmark Examination.* Results of this examination will be provided to all students, schools, and districts to be used as the basis for instructional change.

This handbook provides information about the scoring of student responses to one open-response item in science. It describes the scoring procedures and the scoring criteria (rubrics) used to assess student responses. Copies of actual student responses are provided, along with scores given to those responses, to illustrate how the scoring criteria were applied in each content area.

Additional information about the *Grade 5 Augmented Benchmark Examination* is available through the Arkansas Department of Education. Questions can be addressed to the Office of Student Assessment at 501-682-4558.

The multiple-choice and open-response test items for the *Grade 5 Augmented Benchmark Examination* are developed with the assistance and approval of Content Advisory Committees. All passages and items on the *Grade 5 Augmented Benchmark Examination* are based on the Arkansas Curriculum Frameworks and developed with the assistance and approval of Content Advisory Committees and Bias Review Committees. These committees comprise active Arkansas educators with expertise in science.

While multiple-choice items are scored by machine to determine if the student chose the correct answer from four options, responses to open-response items must be scored by trained "readers" using a pre-established set of scoring criteria.

Reader Training

Readers are trained to score only one content area. All readers who qualify for scoring Arkansas Benchmark Science will have a four year college degree.

Before readers are allowed to begin assigning scores to any student responses, they go through intensive training. The first step in that training is for the readers to read the open-response item as it appeared in the test booklet and to respond—just as the student test takers are required to do. This step gives the readers some insight into how the students might have responded. The next step is the readers' introduction to the scoring rubric. All of the specific requirements of the rubric are explained by the Scoring Director who has been specifically trained to lead the scoring group. Then responses (anchor papers) that illustrate the score points of the rubric are presented to the readers and discussed. The goal of this discussion is for the readers to understand why a particular response (or type of response) receives a particular score. After discussion of the rubric and anchor papers, readers practice scoring sets of responses that have been pre-scored and selected for use as training papers. Detailed discussion of the responses and the scores they receive follows.

After three or four of these practice sets, readers are given "qualifying rounds." These are additional sets of pre-scored papers, and, in order to qualify, each reader scoring responses must score in exact agreement on at least 80% of the responses. Readers who do not score within the required rate of agreement are not allowed to score the *Grade 5 Augmented Benchmark Examination* responses.

Once scoring of the actual student responses begins, readers are monitored constantly throughout the project to ensure that they are scoring according to the criteria. Daily and cumulative statistics are posted and analyzed, and the Scoring Director or Team Leaders reread selected responses scored by the readers. These procedures promote reliable and consistent scoring. Any reader who does not maintain an acceptable level of agreement is dismissed from the project.

Scoring Procedures

All student responses to the *Grade 5 Augmented Benchmark Examination* open-response test items are scored independently by two readers. Those two scores are compared, and responses that receive scores that are non-adjacent (a "1" and a "3," for example) are scored a third time by a Team Leader or the Scoring Director for resolution.

This Teacher Handbook includes the science open-response item as it appeared in this year's test. The specific scoring rubric and annotated response for each score point of the rubric follows. The goal is for classroom teachers and their students to understand how responses are scored. It is hoped that this understanding will help students see what kind of performance is expected of them on the *Grade 5 Augmented Benchmark Examination*.

A A student sets up an aquarium to study the carbon dioxide-oxygen cycle. Water is added to the aquarium. The student chooses items from the list below to place into the aquarium.

Algae	Fish
Plant	Rock
Sand	Snail

1. Name two items from the list that the student should place into the aquarium that are necessary for studying the carbon dioxide-oxygen cycle.

2. Explain why the items named in Part 1 are necessary for studying the carbon dioxide-oxygen cycle.

The student places the aquarium in a dark room.

3. Explain how placing the aquarium in a dark room affects the carbon dioxide-oxygen cycle.

BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

Science Item A Scoring Rubric—2015 Grade 5

Score	Description
4	Response shows a complete understanding of conducting investigations demonstrating the role of the carbon dioxide-oxygen cycle in ecosystems. The response to all parts of the task is correct and complete.
3	Response shows a nearly complete understanding of conducting investigations demonstrating the role of the carbon dioxide-oxygen cycle in ecosystems. The response may contain minor errors.
2	Response shows a limited understanding of conducting investigations demonstrating the role of the carbon dioxide-oxygen cycle in ecosystems. The response may contain a major error.
1	Response shows a minimal understanding of conducting investigations demonstrating the role of the carbon dioxide-oxygen cycle in ecosystems. The response may be incomplete or contain a major error.
0	Response shows insufficient understanding of conducting investigations demonstrating the role of the carbon dioxide-oxygen cycle in ecosystems. The response contains major errors or is irrelevant.

SOLUTION AND SCORING

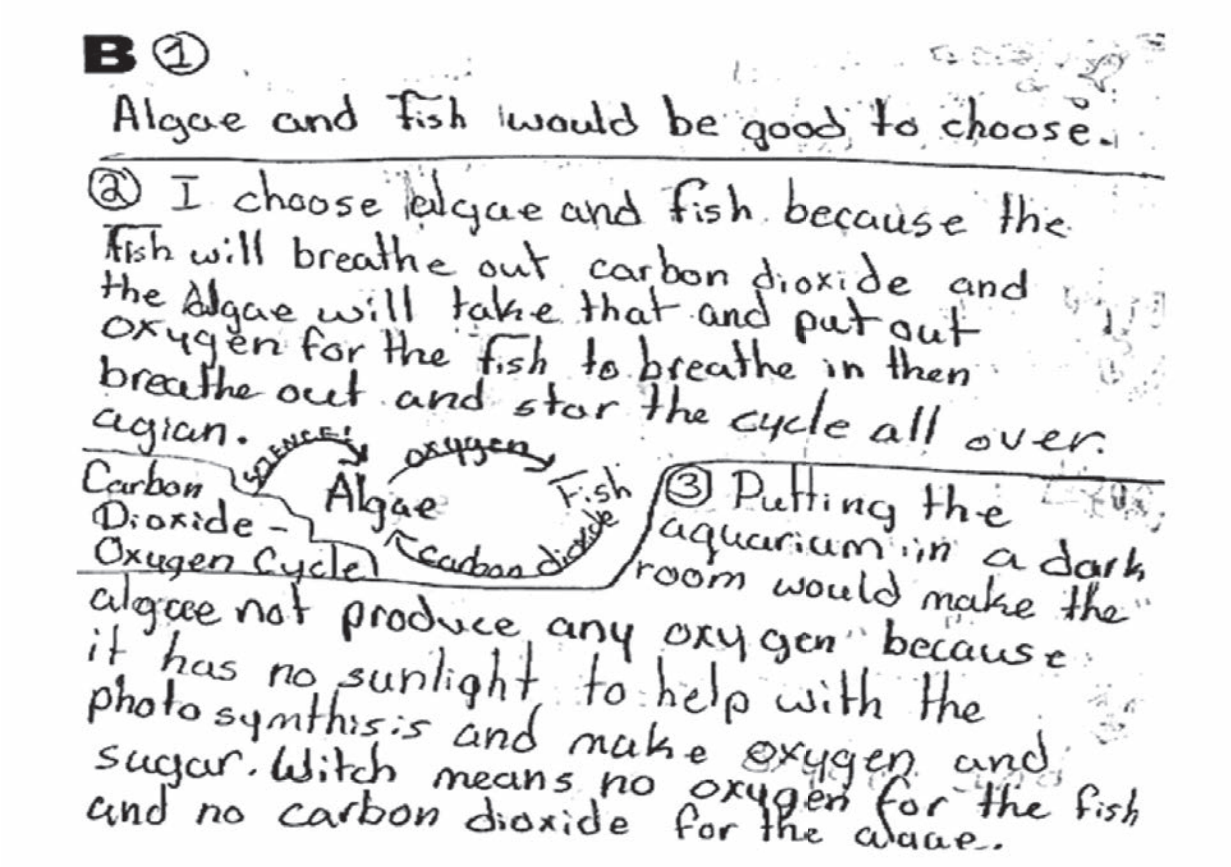
Part	Points
1	**1 point possible:** ½ point for each item named
2	**2 points possible:** 1 point for each explanation
3	**1 point possible:** 1 point for explanation

SCORE: 4

Part 1:		**Points**
Correct Identification	"Algae"	½
Correct Identification	"Fish"	½

Part 2:		**Points**
Correct Explanation	"Fish will breathe out carbon dioxide"	1
Correct Explanation	"Algae will take that and put out oxygen"	1

Part 3:		**Points**
Correct Explanation	"it has no sunlight to help with the photosynthisis and make oxygen and sugar. Witch means no oxygen for the fish and no carbon dioxide for the algae."	1
	Total Points	**4**


B ①

Algae and fish would be good to choose.

② I choose algae and fish because the fish will breathe out carbon dioxide and the algae will take that and put out oxygen for the fish to breathe in then breathe out and star the cycle all over agian.

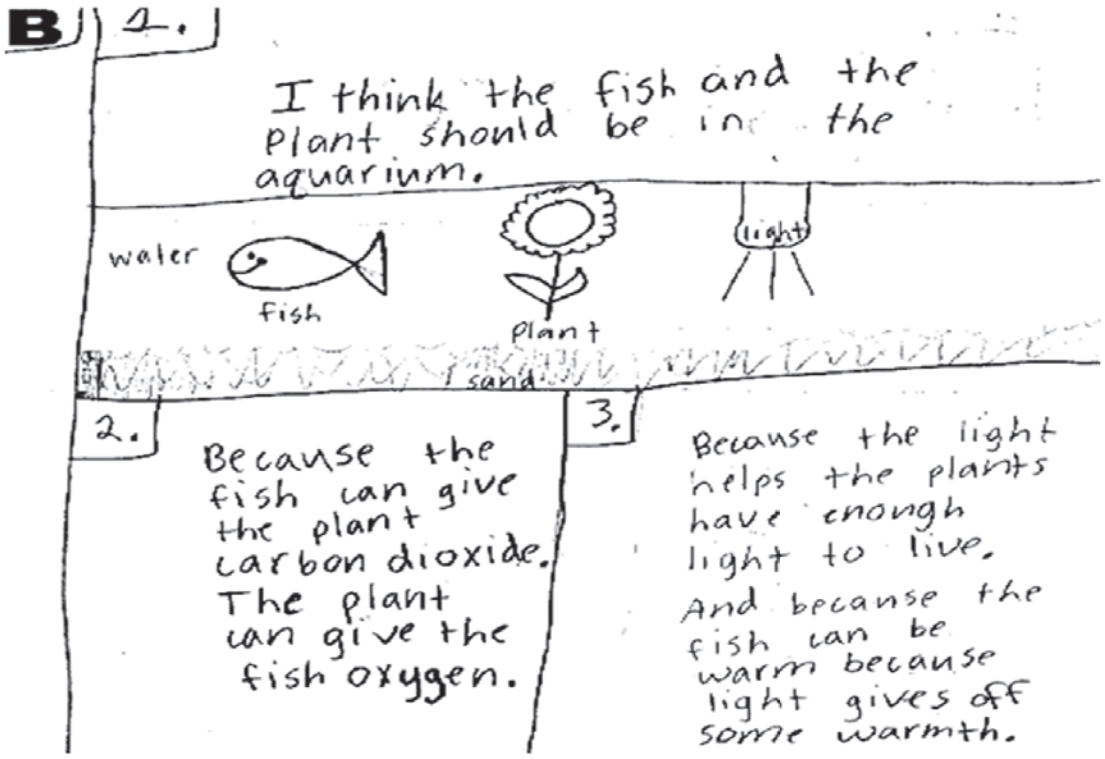
③ Putting the aquarium in a dark room would make the algae not produce any oxygen because it has no sunlight to help with the photosynthisis and make oxygen and sugar. Witch means no oxygen for the fish and no carbon dioxide for the algae.

SCORE: 3

Part 1:		**Points**
Correct Identification	"fish"	½
Correct Identification	"plant"	½

Part 2:		**Points**
Correct Explanation	"Because the fish can give the plant carbon dioxide."	1
Correct Explanation	"The plant can give the fish oxygen."	1

Part 3:		**Points**
Incorrect Explanation	"Because the light helps the plants have enough light to live."	–
	Total Points	**3**



SCORE: 2

Part 1:		**Points**
Correct Identification	"algae"	½
Correct Identification	"plants"	½

Part 2:		**Points**
Correct Explanation	"plants and algae breathe in carbon dioxide and breathe out oxygen."	1
Incorrect Explanation		–

Part 3:		**Points**
Incorrect Explanation	"probably make the air thin because the plants and algae can't change carbon dioxide to oxygen"	–
	Total Points	**2**

B

1. I think the student should place some algae and some plants into the aquarium in order to study carbon dioxide.

2. Algae and plants are necessary to be placed in the aquarium because plants and algae breathe in carbon dioxide and breathe out oxygen.

3. Placing the aquarium in a dark room would affect the carbon dioxide-oxygen cycle by: it would kill the plants and algae because they need sunlight and it would probably make the air thin because the plants and algae can't change carbon dioxide to oxygen, making the air thin to us because we breathe in oxygen, not carbon dioxide.

SCORE: 1

Part 1:		**Points**
Incorrect Identification	"Sand"	–
Correct Identification	"plants"	½

Part 2:		**Points**
Incorrect Explanation	"plants would be able to grow and release carbon dioxide into the air, and that would make the fish and snails be able to breath."	–
Incorrect Explanation		–

Part 3:		**Points**
Incorrect Explanation	"the plants would die and not be able to make carbon dioxide"	–
	Total Points	½

B (2.) The student should choose sand and plants, because the plants would be able to grow and release carbon dioxide into the air, and that would make the fish and snails be able to breath.

(1.) The student should choose ✓ Sand, plants

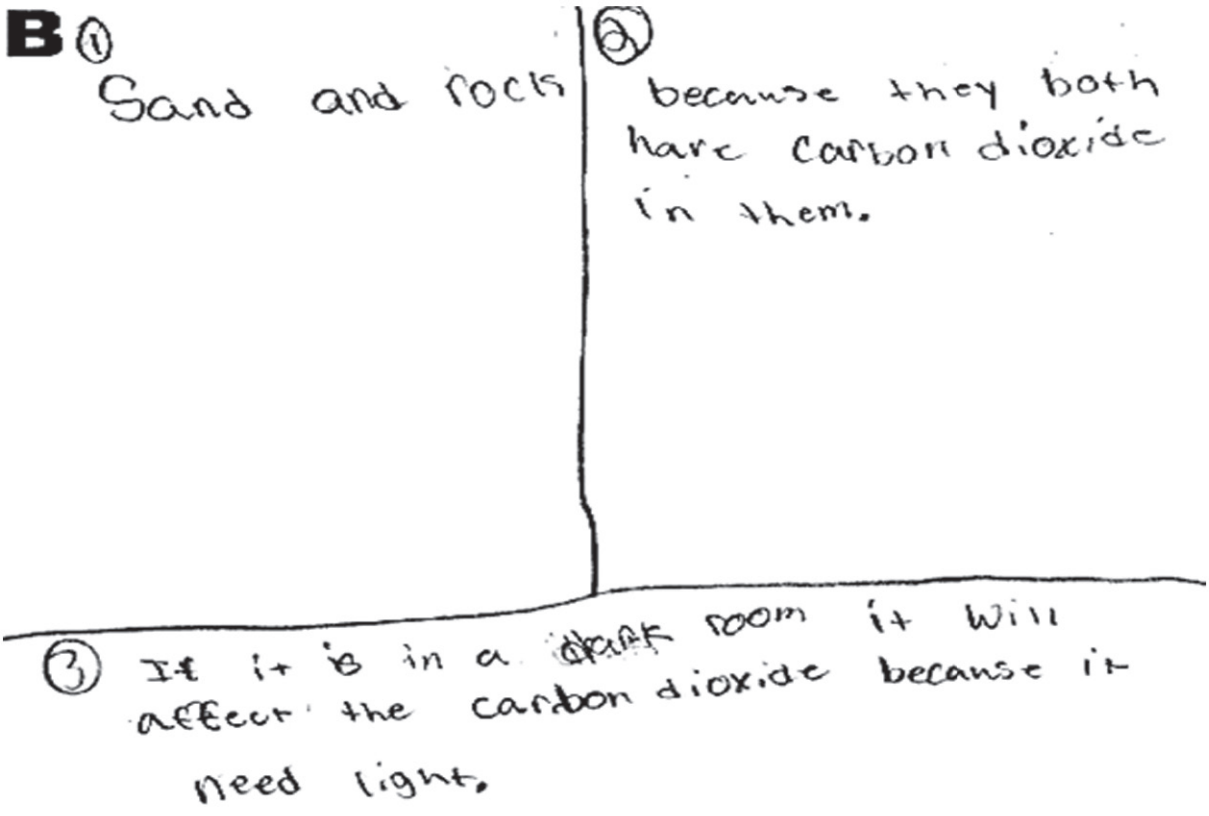
(3.) If you place the aquariam in a dark room than the plants wouldn't be able to grow because they need sunlight and then the plants would die and not be able to make carbon dioxide for the other animals.

SCORE: 0

Part 1:		**Points**
Incorrect Identification	"Sand"	–
Incorrect Identification	"rock"	–

Part 2:		**Points**
Incorrect Explanation	"they both have carbon dioxide in them."	–
Incorrect Explanation		–

Part 3:		**Points**
Incorrect Explanation	"it will affect the carbon dioxide because it need light."	–
	Total Points	**0**



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