High School Statistics

Program Component Review

District Summary

<u>STATISTICS SELECTION</u>

Pearson

<u>**Elementary Statistics (12th edition) by Mario F. Triola**</u>

MATHEMATICS CONTENT

Question #1 Is the math content superficial or does it deepen conceptual understanding, procedural fluency, problem solving and mathematical reasoning?

Question #2 How well does "Teacher Background" prepare a new teacher or a teacher new to the grade level to:
- Present the concept?
- Build language fluency?
- Build mathematical reasoning?
- Make connections between conceptual understanding, procedural fluency, problem solving, and mathematical reasoning?

Question #3 What suggestions are provided to prevent or correct the development of misconceptions as students learn?

Questions #4 How does the program support the teacher in facilitating mathematical discourse about this concept?

> **Content Score = 59**

INSTRUCTIONAL PROGRAM

Question #1 When the concept is first introduced, what connections are made to students' lives and prior knowledge?

Questions # 2 What materials are available to help with the learning of vocabulary essential to understanding this standard:
- Definitions with visuals and examples?
- Pronunciations?
- Words used in context and in sentences?
- Suggestions for teaching and practicing both academic language (prove, analyze) and content vocabulary (denominator, divide)?

Question #3 How well do the different types of student work support:
- Developing conceptual understanding? Is there evidence of a progression from concrete to pictorial to more abstract means of learning concepts?

- Learning and practicing the necessary skills and procedures? Is there evidence of developing skills in the context of problem solving and investigations?
- Developing mathematical reasoning?
- Applying their understanding to diverse situations?

Question #4 What kinds of practice of the standard are there for students to:
- Immediately practice the skill or concept?
- Revisit and apply what has been learned later in the program?
- Revisit and apply what has been learned in a different context (e.g. area model to practice multiplication, metric measurement to practice computation with decimals)?

Question #5 How does technology support a balanced curriculum of this standard for:
- Conceptual understanding?
- Skills and procedures?
- Mathematical Reasoning?
- Applying their understanding to diverse situations?

Question #6 Are the technology-based activities engaging for students?

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Instructional Program Score = 82

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ASSESSMENT

Question #1 What support is available to help teachers check for student misconceptions?

Question #2 How well do the progress monitoring assessments inform instruction of this concept (e.g., distracters in the multiple choice items provide information on student understanding and/or misconceptions)?

Question #3 How well do the assessments adequately assess student procedural knowledge, conceptual understanding mathematical reasoning?

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Assessment Score = 34

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UNIVERSAL ACCESS

Question #1 What support is provided for English Language Learners (e.g., visual aides, advanced or graphic organizers such as word webs or concept maps, manipulatives, reference charts, word walls, etc.)?

Question #2 What support is provided for Special Education students (e.g., modified or alternative tasks, advanced graphic organizers, tactile or auditory support, etc.)?

Question #3 What opportunities are provided for advanced learners to deepen or extend their understanding of the standard (e.g., complex tasks, extension of learned skills, links to other content areas, special challenges, etc.)?

Question #4 How well do the Universal Access strategies present the concept in an alternative form (e.g., hands-on, different context, etc.)?

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Universal Access Score = 36

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TOTAL SCORE = 211

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Cengage

<u>Understanding Basic Statistics (6th edition) by Brase/Brase</u>

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Question #3 What suggestions are provided to prevent or correct the development of misconceptions as students learn?

Questions #4 How does the program support the teacher in facilitating mathematical discourse about this concept?

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Content Score = 40

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INSTRUCTIONAL PROGRAM

Question #1 When the concept is first introduced, what connections are made to students' lives and prior knowledge?

Questions # 2 What materials are available to help with the learning of vocabulary essential to understanding this standard:
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Question #5 How does technology support a balanced curriculum of this standard for:
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- Mathematical Reasoning?
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Question #6 Are the technology-based activities engaging for students?

Instructional Program Score = 64

ASSESSMENT

Question #1 What support is available to help teachers check for student misconceptions?

Question #2 How well do the progress monitoring assessments inform instruction of this concept (e.g., distracters in the multiple choice items provide information on student understanding and/or misconceptions)?

Question #3 How well do the assessments adequately assess student procedural knowledge, conceptual understanding mathematical reasoning?

Assessment Score = 26

UNIVERSAL ACCESS

Question #1 What support is provided for English Language Learners (e.g., visual aides, advanced or graphic organizers such as word webs or concept maps, manipulatives, reference charts, word walls, etc.)?

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Question #3 What opportunities are provided for advanced learners to deepen or extend their understanding of the standard (e.g., complex tasks, extension of learned skills, links to other content areas, special challenges, etc.)?

Question #4 How well do the Universal Access strategies present the concept in an alternative form (e.g., hands-on, different context, etc.)?

> **Universal Access Score = 29**

> # TOTAL SCORE = 159

Cengage

Elementary Statistics (11e) by Johnson/Kuby

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> **Content Score = 34**

INSTRUCTIONAL PROGRAM

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- Conceptual understanding?
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- Mathematical Reasoning?
- Applying their understanding to diverse situations?

Question #6 Are the technology-based activities engaging for students?

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Instructional Program Score = 51

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ASSESSMENT

Question #1 What support is available to help teachers check for student misconceptions?

Question #2 How well do the progress monitoring assessments inform instruction of this concept (e.g., distracters in the multiple choice items provide information on student understanding and/or misconceptions)?

Question #3 How well do the assessments adequately assess student procedural knowledge, conceptual understanding mathematical reasoning?

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Assessment Score = 31

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Question #3 What opportunities are provided for advanced learners to deepen or extend their understanding of the standard (e.g., complex tasks, extension of learned skills, links to other content areas, special challenges, etc.)?

Question #4 How well do the Universal Access strategies present the concept in an alternative form (e.g., hands-on, different context, etc.)?

Universal Access Score = 28

TOTAL SCORE = 144

Cengage

STAT 2 by Johnson/Kuby

MATHEMATICS CONTENT

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- Make connections between conceptual understanding, procedural fluency, problem solving, and mathematical resaoning?

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Content Score = 31

INSTRUCTIONAL PROGRAM

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- Mathematical Reasoning?
- Applying their understanding to diverse situations?

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> **Instructional Program Score = 51**

ASSESSMENT

Question #1 What support is available to help teachers check for student misconceptions?

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Assessment Score = 24

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UNIVERSAL ACCESS

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Question #4 How well do the Universal Access strategies present the concept in an alternative form (e.g., hands-on, different context, etc.)?

Universal Access Score = 26

TOTAL SCORE = 132