It is the policy of the State Board of Education and a priority of the Oregon Department of Education that there will be no discrimination or harassment on the grounds of race, color, sex, marital status, religion, national origin, age or handicap in any educational programs, activities, or employment. Persons having questions about equal opportunity and nondiscrimination should contact the State Superintendent of Public Instruction at the Oregon Department of Education.

Office of Assessment & Information Services
Oregon Department of Education
255 Capitol Street NE
Salem, OR  97310
(503) 947-5600

Susan Castillo
State Superintendent of Public Instruction

Doug Kosty
Assistant Superintendent

Tony Alpert
Director, Assessment and Evaluation

Steve Slater
Manager, Scoring, Psychometrics and Validity

Kathleen Vanderwall
Manager, Test Design and Administration

Ken Hermens
Language Arts Assessment Specialist

Leslie Phillips
Science, and Social Sciences Assessment Specialist

James Leigh
Mathematics Assessment Specialist

Dianna Carrizales
Extended Assessment Specialist

Sheila Somerville
Electronic Publishing Specialist
INTRODUCTION TO
MATHEMATICS KNOWLEDGE AND SKILLS
GRADE-LEVEL SAMPLE TESTS

BACKGROUND
The Oregon Department of Education provides sample tests to demonstrate the content and types of questions students in grades 3, 4, 5, 6, 7, 8, and High School might encounter on the Oregon Assessment of Knowledge and Skills (multiple-choice), which is administered each year.

ELIGIBLE CONTENT
These sample questions were taken from previous years’ tests. They were designed to measure each student’s knowledge of mathematics in each of the five content strands:

1. Calculations and Estimations: numbers; computation and estimation; operations and properties
2. Measurement: units and tools; and direct and indirect measurement
3. Statistics and Probability: statistics; probability; collect and display data; data analysis and predictions
4. Algebraic Relationships: patterns and functions; algebraic relationships; modeling; and change
5. Geometry: properties and relationships; modeling; coordinate geometry; and transformations and symmetry.

As in the operational assessment, students are strongly encouraged to use the calculator with which they are most familiar when taking the sample test.

The answer key provided at the end of the sample test booklet identifies which of these categories each question is designed to assess.

The same weighting across the five strands of mathematics content is used in both sample and operational tests. This chart shows the percent weighting of strands by grade level:

<table>
<thead>
<tr>
<th>Grade</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>25</td>
<td>20</td>
<td>15</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>15</td>
<td>15</td>
<td>20</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>15</td>
<td>15</td>
<td>20</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>HS</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>35</td>
<td>25</td>
</tr>
</tbody>
</table>

WHY PROVIDE STUDENTS WITH A SAMPLE TEST?
Most students feel some anxiety as they approach a test. The more confident students feel about their knowledge of the topic, the less anxious they feel. It also is important that students feel comfortable with the test format and are familiar with test-taking strategies to help them achieve the best possible score.

CONTENTS OF THE SAMPLE TEST:
This overview of the purpose for sample tests is followed by a list of test-taking tips. The sample test formatting is the same as a paper/pencil operational mathematics test. A “fill-in-the-bubble” answer sheet for the students to practice with follows the actual sample test. The answer key identifies the correct answer, the score reporting category represented, and a conversion of number correct to approximate RIT scale score. The sample test has fewer items than the actual assessment, and may not be used in place of the operational assessment.
USING THE SAMPLE TEST:

Teachers often have their students take the test as a “practice” activity in preparation for the actual Statewide Assessment. In addition to the practice in reading and answering questions, some students may benefit from an opportunity to practice marking bubbles on a separate answer sheet. The answer key could be removed prior to making copies of the sample test for student practice. Copies of the answer key could then be provided to students to check their work or to take home and share with parents.

It is important to remember that students are encouraged to use their calculators and any mathematics manipulatives on the test. Providing these tools in class and encouraging students to use them during the sample test may be very beneficial in encouraging students to take their time and use the appropriate tools to help them solve problems during the actual test administration. In fact, teachers may want to demonstrate how various tools could be used to solve the multiple-choice problems as part of the practice test activities.

Teachers may use the overall class results to target areas of instruction needing further attention.

Parents may find the sample test helpful in clarifying the types of questions their child will encounter on the multiple-choice test. Parents could also assist their child in preparing for the test by practicing at home. The list of test-taking tips gives parents suggestions on ways to reduce test anxiety and promote good study and health habits in preparation for testing.

Students may wish to use the test independently to practice before the actual test administration, checking their own responses against the answer key provided at the end of the booklet. Students may benefit from re-reading the problems and analyzing both the correct and incorrect answers to the multiple-choice questions they missed.

Building principals, superintendents, district testing coordinators, curriculum leaders and others may find the sample test useful in communicating with parents, school site councils, and other community members. Parts of the sample test could be included in a newsletter or shared at meetings of local community groups to help constituents better understand the state assessment system. Although the sample tests are not as comprehensive as the complete tests administered in the Statewide Assessment, they do provide a sampling of the subject area content and difficulty level students will encounter as a part of Oregon’s high academic standards.

Assessment Conditions
If the practice test is to be administered in “test-like” conditions, the following steps need to be followed:

• post a “testing, do not disturb” sign on the window or door of the classroom
• go over any directions (e.g., students are to complete the entire test or only a portion of the test at one sitting)
• expect the students to work by themselves with no talking during the assessment
• monitor student activities during the assessment
• provide any of the appropriate accommodations or modifications students use during instruction and might need during testing
• expect all students to participate
TEST-TAKING TIPS

BEFORE THE TEST
- Develop a positive attitude. Tell yourself, “I will do my best on this test.”
- Get a good night’s sleep the night before the test.
- Get up early enough to avoid hurrying to get ready for school.
- Eat a good breakfast (and lunch, if your test is in the afternoon).

DURING THE TEST
- Stay calm.
- Listen carefully to directions.
- Read each test question and all the answer choices carefully.
- Eliminate any obvious wrong answers.
- Solve the problem using paper and pencil, a calculator or by using manipulatives. See if your answer is similar to one of the choices given.
- Pace yourself. If you come to a difficult question, it may be better to skip it and go on. Then come back and focus on the difficult questions one at a time. However, going back is a strategy that can only be used when taking a paper/pencil test, not on OAKS Online.
- Just like the Statewide Assessment, this is not a timed test. If you need more time to finish the test, notify your teacher.
- Remember the test questions are not arranged by difficulty. If you get to a question you think is too hard, that doesn’t mean the rest of the test questions will also be too hard.
- The teachers who write the test questions use “commonly made mistakes” to identify good distractors, so finding an answer like yours is not a guarantee that it is the correct answer.

AFTER THE TEST
- Before you turn your test in, check it over. Change an answer only if you have a good reason. Generally it is better to stick with your first choice.
- Make sure you have marked an answer for every question, even if you had to guess.
- Make sure your answer sheet is clearly marked with dark pencil. Erase any stray marks.

ADDITIONAL INFORMATION on mathematics assessment may be obtained by contacting James Leigh, Mathematics Assessment Specialist, email to: James.Leigh@state.or.us
### Measurements

<table>
<thead>
<tr>
<th>Metric</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 meter</td>
<td>100 centimeters</td>
</tr>
<tr>
<td>1 kilometer</td>
<td>1000 meters</td>
</tr>
<tr>
<td>1 yard</td>
<td>3 feet</td>
</tr>
<tr>
<td>1 mile</td>
<td>5280 feet</td>
</tr>
<tr>
<td>1 hour</td>
<td>60 minutes</td>
</tr>
<tr>
<td>1 minute</td>
<td>60 seconds</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metric</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 gram</td>
<td>1000 milligrams</td>
</tr>
<tr>
<td>1 kilogram</td>
<td>1000 grams</td>
</tr>
<tr>
<td>1 pound</td>
<td>16 ounces</td>
</tr>
<tr>
<td>1 ton</td>
<td>2000 pounds</td>
</tr>
<tr>
<td>1 cup</td>
<td>8 fluid ounces</td>
</tr>
<tr>
<td>1 pint</td>
<td>2 cups</td>
</tr>
<tr>
<td>1 quart</td>
<td>2 pints</td>
</tr>
<tr>
<td>1 gallon</td>
<td>4 quarts</td>
</tr>
</tbody>
</table>

### Area (A)

- **Rectangle:** \( A = lw \)
- **Triangle:** \( A = \frac{1}{2}bh \)
- **Circle:** \( A = \pi r^2 \)
- **Cylinder:** \( A = 2\pi rh + 2\pi r^2 \)
- **Cone:** \( A = \frac{1}{3}(BA)(h) \)
- **Pyramid:** \( A = \frac{1}{3}(BA)(h) \)

### Surface Area (SA) and Volume (V)

- **Cube:** \( V = lwh \)
- **Cylinder:** \( V = \pi r^2h \)
- **Cone:** \( V = \frac{1}{3}(BA)(h) \)
- **Pyramid:** \( V = \frac{1}{3}(BA)(h) \)

### Geometry

- **Distance Formula:** \( d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \)
- **Pythagorean Theorem:** \( a^2 + b^2 = c^2 \)
DIRECTIONS

Read each of the questions below and then decide on the BEST answer.

1
In a game show, contestants gain or lose points by answering questions. Jacob began with 27 points, lost 53, and gained 15. What was his final score?
A. -41  
B. -11  
C. 41  
D. 95

2
Stacie is stacking boxes of cereal for a display at the supermarket as shown.

Which expression represents the number of boxes in the r^{th} row, where r = the row number?
A. r – 1  
B. r  
C. r + 1  
D. (r + 1) – 1

3
These two rectangles are congruent. The length of side OP is ______ units.
A. 4  
B. 6  
C. 8  
D. 12

4
Find the next two numbers for this arithmetic sequence:
10, -4, -18, -32, __, __
A. -38, -44  
B. -44, -52  
C. -46, -60  
D. -52, -68

5
Bicycles come in 3 colors: black, red, and blue. They can have 2 different types of seats and 2 different types of tires. How many different bicycles can be made?
A. 1 bicycle  
B. 7 bicycles  
C. 10 bicycles  
D. 12 bicycles
6
Rosario earns $8.00 per hour working at her dad’s pet food company. She worked 4 hours on Monday, 3 hours on Wednesday, 5 hours on Friday, and 5 hours on Saturday. How much did she earn all together for the 4 days?
A. $17  B. $32  C. $96  D. $136

7
Luis is building a doghouse. It is in the shape of a rectangular solid. It measures 4 feet high, 4 feet wide, and 5 feet deep. What is the volume of the dog house?
A. 13 feet³  B. 27 feet³  C. 80 feet³  D. 112 feet³

8
Which of the following is true?

A. Line AD is parallel to line BC.
B. Line AD is perpendicular to line BC.
C. Line AB is parallel to line BC.
D. Line AC is perpendicular to line BC.

9
There are 5 chips, numbered 1 through 5. If one chip is selected at random, what is the probability it will have an even number on it?
A. $\frac{1}{5}$  B. $\frac{2}{5}$  C. $\frac{1}{2}$  D. $\frac{3}{4}$

10
A group of ten people is going to play ball this weekend. Four will play basketball; half as many will play baseball, and the rest will play soccer. How many people will play soccer?
A. 2  B. 4  C. 6  D. 8

11
The dimensions of the swimming pool in Brenda’s backyard are: 72 inches deep, 120 inches wide and 240 inches long. To find the volume in cubic feet, multiply ____.
A. 6 ft. x 10 ft. x 20 ft.
B. 24 ft. x 40 ft. x 80 ft.
C. 36 ft. x 60 ft. x 120 ft.
D. 864 ft. x 1440 ft. x 2880 ft.
12

If Sydney spins the spinner 100 times, about how many times will the spinner probably land on orange?

A. $\frac{1}{3}$ times
B. 25 times
C. 50 times
D. 90 times

13

Tanisha built a rectangular prism out of 1-inch blocks. How many blocks did she use to build this figure?

A. 15
B. 39
C. 45
D. 78

14

Which equation best describes the relationship shown in the graph?

A. $y = x + 1$  
B. $y = x - 1$  
C. $y = 2x$  
D. $y = \frac{x}{2}$

15

Your school charges students $2.00 to attend the after school carnival and 25 cents for every game a student plays. Which formula will find your total cost (T) for attending the carnival and playing n games?

A. $T = 0.25n$  
B. $T = 2n + 0.25$  
C. $T = 25n + 2$  
D. $T = 2 + 0.25n$
16
Alejandra is training for the swim team tryouts. She plans to swim an average (mean) of 5.5 miles a week.

So far, she has swum 2 miles the first week, 7 miles the second week, 6 miles the third week, 9 miles the fourth week, 5 miles the fifth week, and 3 miles the sixth week.

How many miles must she swim the seventh week, in order to reach her goal of averaging 5.5 miles per week?

A. 4.6 miles  
B. 5.5 miles  
C. 6.5 miles  
D. 12.5 miles

17
Solve this equation.

\((2x + 1) - 4 = 136\)

A. \(x = 67.5\)  
B. \(x = 69.5\)  
C. \(x = 70\)  
D. \(x = 137\)

18
In the figure below, lines \(m\) and \(n\) are parallel. If \(\angle 1 = 100^\circ\), then find \(\angle 5\).

A. \(80^\circ\)  
B. \(100^\circ\)  
C. \(110^\circ\)  
D. \(140^\circ\)

19
The 10th grade class at Forest Grove High School could be divided into equal sized groups of 6, 12, or 17 students for photos. What is the least number of students in the 10th grade class?

A. 102  
B. 204  
C. 306  
D. 404

20
Matt has 4 deciliters of milk. Will the milk fill a 1-liter bottle?

A. Yes, it equals 40 liters.  
B. Yes, it equals 4 liters.  
C. No, it equals 0.4 liters.  
D. No, it equals 0.04 liters.

21
Candy wants to buy a skateboard. She needs $87. She will do one week of Garden Care and one week of Child Care. How many lawns does she need to mow?

<table>
<thead>
<tr>
<th>Candy’s Job Chart</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Job</td>
<td>Pay</td>
<td></td>
</tr>
<tr>
<td>Garden Care</td>
<td>$10 a week</td>
<td></td>
</tr>
<tr>
<td>Child Care</td>
<td>$15 a week</td>
<td></td>
</tr>
<tr>
<td>Lawn Mowing</td>
<td>$5 a lawn</td>
<td></td>
</tr>
</tbody>
</table>

A. 3  
B. 5  
C. 8  
D. 11
22. Using the congruent quadrilaterals, what is the measure of \( \angle XYZ \)?
   A. 85°  
   B. 130°  
   C. 140°  
   D. 220°

23. If trapezoid WXYZ \( \cong \) LMOP, what is the measure of \( \angle O \)?
   A. 32°  
   B. 90°  
   C. 122°  
   D. 148°

24. Approximately how much was collected in total taxes in 1990?
   A. $2,450  
   B. $2,450,000  
   C. $3,800,000,000  
   D. $4,200,000,000

25. Sal pays $30 to join the Golf Club. Each time he golfs, it costs $8. What is the TOTAL cost for Sal to golf 20 times at his Golf Club?
   A. $240  
   B. $220  
   C. $190  
   D. $160

26. Students were asked to explain the first step in solving the equation: \( 3y + 4 = 16 \).

   Four students volunteered their answer.
   
   Susan says, "multiply by 3."
   Ted says, "add 4 to both sides."
   Greg says, "subtract 4 from both sides."
   Tonya says, "add 16 to both sides."

   Who is correct?
   A. Susan  
   B. Ted  
   C. Greg  
   D. Tonya
27
What is the approximate volume of the glass?

A. 1695 cm$^3$
B. 424 cm$^3$
C. 283 cm$^3$
D. 141 cm$^3$

28
Using the stem-and-leaf plot, what is the mode?

1 | 0 2
2 | 2 2 3 4
3 | 2 2 3 4
4 | 2 2 5 6
5 | 2 5 7
6 | 5 5 5 5

A. 2
B. 40
C. 42
D. 65

29
Zane was given the equation $2x - 5 = y$ and wondered what the graph of this equation would look like. Which of the following best describe the graph?

A. A line that rises from left to right
B. A vertical line
C. A line that falls from left to right
D. A horizontal line

30
Cris was asked to draw a rectangle on a coordinate graph. He knew that the length was parallel to the x-axis and was 10 units long, while the width was parallel to the y-axis and was 5 units long. Two of the vertices have coordinates (-4, 2) and (6, 2). What are possible coordinates of the missing vertices?

A. (-4, -8) and (6, -8)
B. (-4, -12) and (6, 12)
C. (-4, -5) and (6, -5)
D. (-4, -3) and (6, -3)
Oregon Mathematics Sample Test

Use number 2 pencil.
Do NOT use ink or ball point pen.
Make heavy dark marks that completely fill the circle.
Erase completely any marks you wish to change.

Name of Student

________________________________________________________________________

Name of Teacher

________________________________________________________________________

Name of School

________________________________________________________________________

1. A B C D
2. A B C D
3. A B C D
4. A B C D
5. A B C D
6. A B C D
7. A B C D
8. A B C D
9. A B C D
10. A B C D
11. A B C D
12. A B C D
13. A B C D
14. A B C D
15. A B C D
16. A B C D
17. A B C D
18. A B C D
19. A B C D
20. A B C D
21. A B C D
22. A B C D
23. A B C D
24. A B C D
25. A B C D
26. A B C D
27. A B C D
28. A B C D
29. A B C D
30. A B C D
### GRADE 7 MATHEMATICS SAMPLE TEST KEY 2008 – 2010

<table>
<thead>
<tr>
<th>Test Item</th>
<th>Correct Answer</th>
<th>Score Reporting Category</th>
<th>SRC Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B</td>
<td>Calculations and Estimations</td>
<td>1.2.71</td>
</tr>
<tr>
<td>2</td>
<td>C</td>
<td>Algebraic Relationships</td>
<td>4.1.71</td>
</tr>
<tr>
<td>3</td>
<td>A</td>
<td>Geometry</td>
<td>5.1.77</td>
</tr>
<tr>
<td>4</td>
<td>C</td>
<td>Algebraic Relationships</td>
<td>4.1.71</td>
</tr>
<tr>
<td>5</td>
<td>D</td>
<td>Statistics and Probability</td>
<td>3.2.74</td>
</tr>
<tr>
<td>6</td>
<td>D</td>
<td>Calculations and Estimations</td>
<td>1.3.73</td>
</tr>
<tr>
<td>7</td>
<td>C</td>
<td>Measurement</td>
<td>2.2.711</td>
</tr>
<tr>
<td>8</td>
<td>A</td>
<td>Geometry</td>
<td>5.1.73</td>
</tr>
<tr>
<td>9</td>
<td>B</td>
<td>Statistics and Probability</td>
<td>3.2.72</td>
</tr>
<tr>
<td>10</td>
<td>B</td>
<td>Algebraic Relationships</td>
<td>4.2.76</td>
</tr>
<tr>
<td>11</td>
<td>A</td>
<td>Measurement</td>
<td>2.1.74</td>
</tr>
<tr>
<td>12</td>
<td>B</td>
<td>Statistics and Probability</td>
<td>3.2.72</td>
</tr>
<tr>
<td>13</td>
<td>C</td>
<td>Measurement</td>
<td>2.2.715</td>
</tr>
<tr>
<td>14</td>
<td>A</td>
<td>Algebraic Relationships</td>
<td>4.2.77</td>
</tr>
<tr>
<td>15</td>
<td>D</td>
<td>Algebraic Relationships</td>
<td>4.3.71</td>
</tr>
<tr>
<td>16</td>
<td>C</td>
<td>Statistics and Probability</td>
<td>3.1.71</td>
</tr>
<tr>
<td>17</td>
<td>B</td>
<td>Algebraic Relationships</td>
<td>4.2.72</td>
</tr>
<tr>
<td>18</td>
<td>B</td>
<td>Geometry</td>
<td>5.1.73</td>
</tr>
<tr>
<td>19</td>
<td>B</td>
<td>Calculations and Estimations</td>
<td>1.1.715</td>
</tr>
<tr>
<td>20</td>
<td>C</td>
<td>Measurement</td>
<td>2.1.74</td>
</tr>
<tr>
<td>21</td>
<td>C</td>
<td>Algebraic Relationships</td>
<td>4.1.71</td>
</tr>
<tr>
<td>22</td>
<td>C</td>
<td>Geometry</td>
<td>5.1.77</td>
</tr>
<tr>
<td>23</td>
<td>D</td>
<td>Geometry</td>
<td>5.1.77</td>
</tr>
<tr>
<td>24</td>
<td>D</td>
<td>Statistics and Probability</td>
<td>3.3.75</td>
</tr>
<tr>
<td>25</td>
<td>C</td>
<td>Algebraic Relationships</td>
<td>4.3.71</td>
</tr>
<tr>
<td>26</td>
<td>C</td>
<td>Calculations and Estimations</td>
<td>1.3.75</td>
</tr>
<tr>
<td>27</td>
<td>B</td>
<td>Measurement</td>
<td>2.2.711</td>
</tr>
<tr>
<td>28</td>
<td>D</td>
<td>Statistics and Probability</td>
<td>3.3.75</td>
</tr>
<tr>
<td>29</td>
<td>A</td>
<td>Algebraic Relationships</td>
<td>4.3.71</td>
</tr>
<tr>
<td>30</td>
<td>D</td>
<td>Geometry</td>
<td>5.3.71</td>
</tr>
</tbody>
</table>

#### CONVERTING TO A RIT SCORE

<table>
<thead>
<tr>
<th>Number Correct</th>
<th>RIT score</th>
<th>Number Correct</th>
<th>RIT score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>186.4</td>
<td>16</td>
<td>229.1</td>
</tr>
<tr>
<td>2</td>
<td>194.4</td>
<td>17</td>
<td>230.8</td>
</tr>
<tr>
<td>3</td>
<td>199.4</td>
<td>18</td>
<td>232.6</td>
</tr>
<tr>
<td>4</td>
<td>203.3</td>
<td>19</td>
<td>234.4</td>
</tr>
<tr>
<td>5</td>
<td>206.5</td>
<td>20</td>
<td>236.2</td>
</tr>
<tr>
<td>6</td>
<td>209.3</td>
<td>21</td>
<td>238.2**</td>
</tr>
<tr>
<td>7</td>
<td>211.8</td>
<td>22</td>
<td>240.2</td>
</tr>
<tr>
<td>8</td>
<td>214.1</td>
<td>23</td>
<td>242.4</td>
</tr>
<tr>
<td>9</td>
<td>216.2</td>
<td>24</td>
<td>244.7</td>
</tr>
<tr>
<td>10</td>
<td>218.2</td>
<td>25</td>
<td>247.3</td>
</tr>
<tr>
<td>11</td>
<td>220.2</td>
<td>26</td>
<td>250.3</td>
</tr>
<tr>
<td>12</td>
<td>222.0</td>
<td>27</td>
<td>254.0</td>
</tr>
<tr>
<td>13</td>
<td>223.8</td>
<td>28</td>
<td>258.8</td>
</tr>
<tr>
<td>14</td>
<td>225.6</td>
<td>29</td>
<td>266.4</td>
</tr>
<tr>
<td>15</td>
<td>227.3*</td>
<td>30</td>
<td>273.7</td>
</tr>
</tbody>
</table>

* Likely to meet Grade 7 Standards  
** Likely to exceed Grade 7 Standards

Note: The sample test is for practice only; scores may not be substituted for the Oregon Statewide Assessment.