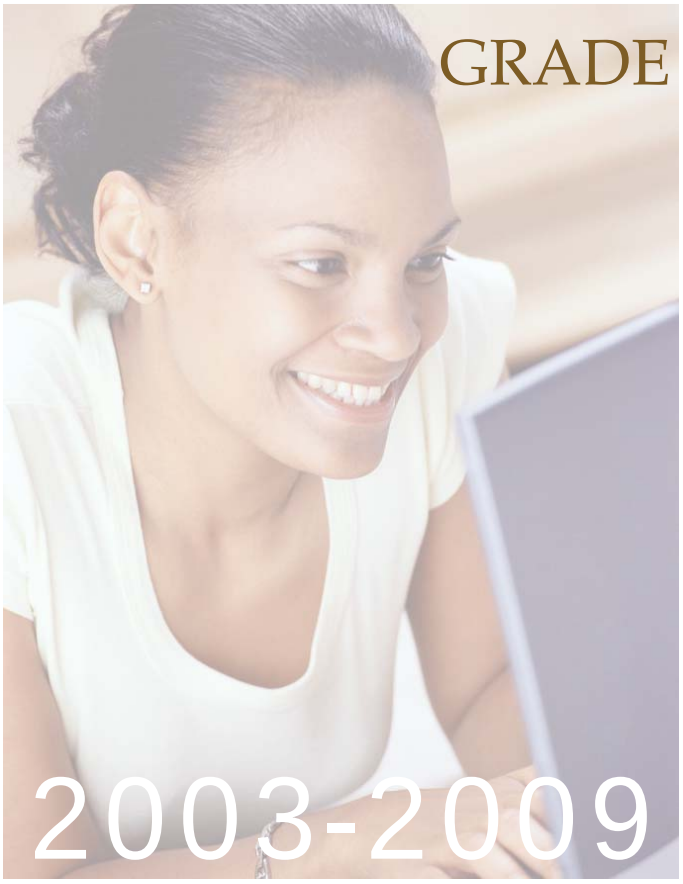
SAMPLE TEST

SCIENCE

GRADE 8



Physical Science

Life Science

Earth and Space Science

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INTRODUCTION TO SCIENCE

SAMPLE TESTS and TEST KEYS

The Oregon Department of Education provides sample tests in science to demonstrate the content and types of questions students at Benchmark 2/ Grade 5, Benchmark 3/ Grade 8 and High School might encounter on the Oregon Statewide Assessment administered each spring. Items on the sample test were taken from earlier years' Statewide Assessments. These items are no longer secure and have been released for public use. Science assessment items are designed to measure students' knowledge and skills about the physical and living universe in the following three categories:

- physical science;
- life science; and
- earth/space science.

WHY PROVIDE SAMPLE TESTS?

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 may help students feel comfortable if they are familiar with the test format. Teachers want to know how the state content standards are represented on these tests. Sample tests help teachers see how students' learning will be examined.

HOW TO USE THE SAMPLE TEST

The Oregon Department of Education updates sample tests periodically. Students may take this sample test as a practice activity to prepare for the actual test.

A list of test-taking tips for students follows this introduction. Teachers may use the tips to:

- generate individual and class discussion;
- call attention to helpful strategies students can use to prepare for and take the test; and
- share ideas with parents of ways to help reduce test anxiety and promote good study and health habits at home.

In addition to gaining practice in solving test questions, some students also may benefit from practice in marking bubbles on a separate answer sheet, as required on the actual test. An answer sheet for students to mark is provided at the end of each test booklet.

An answer key for each benchmark test is provided at the end of this introduction. In addition to the correct answer, the key also identifies which of the three reporting categories each question is designed to assess (physical science, life science, and earth/space science).

A table follows the answer key to show how students are likely to perform on the Statewide Assessment given their answers on the sample test. This is only a short practice test. It is a warm-up for the Statewide Assessment, not an absolute predictor of how a student will do on that longer assessment. Many students score higher on the state assessment than their practice scores suggest.

Teachers may have students take the sample test, score each item, and discuss any or all of the items and answers. Students usually benefit from analyzing both the correct and incorrect answers.

Sample tests also may be shared with parents to help them understand the types of questions their child will encounter on the test and to practice with their child. Sample test questions may be reprinted in newsletters or shared at community meetings to better understand the state assessment system. Although the sample tests are not as comprehensive as the actual tests, they do provide a sampling of the subject area content and difficulty level students will encounter as part of Oregon's academic content standards.

TEST-TAKING TIPS

Students: Use these tips to help you prepare for the test.

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 from the teacher.
- Ask questions if you don't understand what to do.
- Before you read an item on the test, preview the questions that follow for tips to help you focus your reading.
- After reading an item, read the entire first question and all the answer choices. Stop and think of an answer. Look to see if one of the choices is similar to your answer.
- Read each test question and all the answer choices carefully. Try to analyze what the question is really asking.
- Pace yourself. If you come to a difficult question, it may be better to skip it and go on. Then come back and really focus on the difficult questions one at a time.
- This is ***not*** a timed test. If you need more time to finish the test, tell your teacher.
- If you are not sure of an answer to a question, try these tips:
- Get rid of the answers you know are not correct and choose among the rest.
- Read through all the answers very carefully, and then go back to the question. Sometimes you can pick up clues just by thinking about the different answers you have been given to choose from.
- If you get stuck on a question, skip it and come back later.
- It is OK to guess on this test. Try to make your best guess, but make sure you answer all questions.

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.
- Don't worry about the test once it is finished. Go on to do your best work on your other school assignments.

DIRECTIONS

Read each of the questions and decide on the BEST answer. There are many different kinds of questions, so read each one carefully before marking an answer on your answer sheet. When there is an introduction to a set of questions, read it carefully, since it will contain important information you may need.

BUOYANCY

Figure 1 shows a toy submarine being held beneath the water surface. The weight of the submarine, 0.5 Newton (N), tends to pull the submarine to the bottom of the container. A buoyant force of 0.8 N, created by the volume of water displaced by the submarine, tends to push the submarine toward the surface.

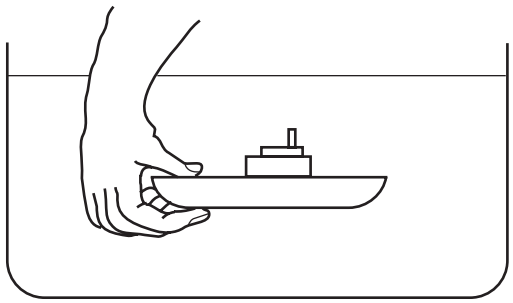


Figure 1

1

When the person releases the toy submarine,

A. the sub will rise toward the surface.
B. the sub will sink toward the bottom.
C. the sub will stay at the same level.
D. we can't tell what the sub will do from this data.

2

You are given a flask with a mixture of salt and water and asked to separate the two. You could

A. use an electric current to separate the salt from the water.
B. evaporate the water and collect the salt.
C. put it under the microscope to separate the salt and water.
D. let the salt settle out and pour off the pure water from the top.

▼Science

3

Your body uses food as an energy source to move your muscles. This is an example of what type of energy conversion?

A. Chemical to mechanical
B. Mechanical to electrical
C. Mechanical to chemical
D. Electrical to mechanical

4

A stream will probably deposit the most sand and silt where the stream bed is

A. narrow and level.
B. narrow and steep.
C. wide and level.
D. wide and steep.

5

Compared to coastal areas, interior areas of a large continent tend to have

A. higher amounts of rainfall throughout the year.
B. a greater incidence of fog during summer months.
C. an increased risk of hurricanes during the spring months.
D. more extreme temperature differences between winter and summer.

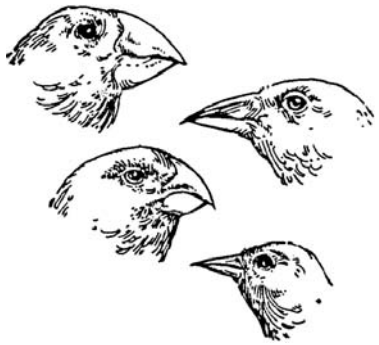
6

Alfred Wegner's Theory of Continental Drift was not well accepted because he couldn't say what force could be big enough to move continents. Current theories explain this movement with

A. subduction zones at continental margins.
B. hot spots forming under continents.
C. magnetic reversals of the north and south poles.
D. convection currents in the mantle.

7

Shown below are 4 species of finches, derived from a common ancestor. These species inhabit the same island. Which of the following BEST explains the appearance of these birds' beaks?



A. Predation by the larger birds on the smaller birds led to a decreased population of the smaller birds.
B. Competition for limited food resources led to an increased similarity among species.
C. Predation by the larger birds on the smaller birds led to an increased fitness of the smaller birds.
D. Competition for limited food resources led to an increased diversity among species.

8

An example of a predator-prey relationship would be

A. tree - water.
B. cow - grass.
C. hawk - mouse.
D. tick - dog.

9

Which of the following characteristics are you most likely to inherit from a parent?

A. Weight
B. Temper
C. Eye color
D. Food preference

▼Science

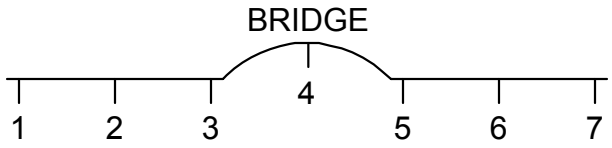
10

Many plants reproduce asexually. How does the genetic material (DNA) compare between the new plant and the parent plant in this type of reproduction?

A. It is similar but not identical.
B. It depends on the plant the parent is crossed with.
C. It depends on the climate it is grown in.
D. It is identical.

COASTING BICYCLES

Alfredo and his friends rode their bikes on a bike path. The path was perfectly level, except where it went up over a small bridge and then came back down. There was no wind. The picture below shows a side view of the shape of the path they followed. They had a contest to see who could coast the farthest. They pedaled as fast as they could from point 1 to point 2, and then they stopped pedaling and coasted to a stop at point 7.



11

Of points 3, 4 and 5, at which point did their bikes travel fastest?

A. 3
B. 4
C. 5
D. They went about the same speed at all three points.

12

Which of the following would NOT have helped them coast farther?

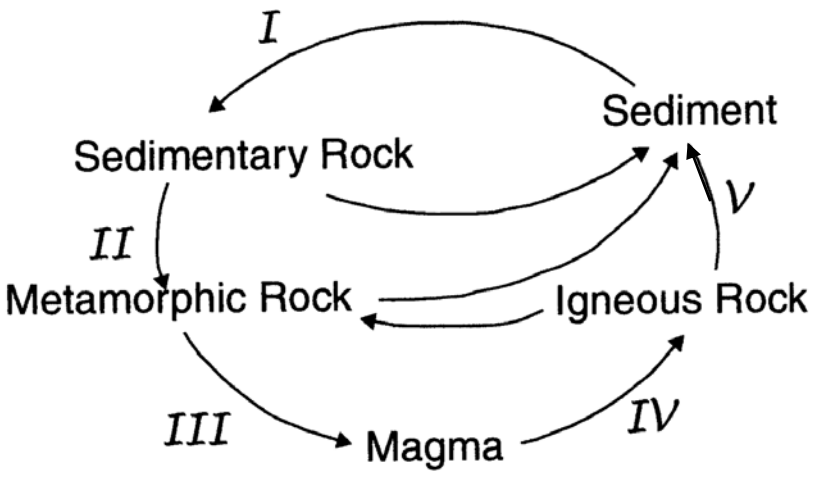
A. Crouching low over their bikes while coasting
B. Swerving their bikes from side to side
C. Pumping more air into their tires
D. Oiling the wheel bearings

13

Their bikes were accelerating between points

A. 1 and 2. B. 2 and 3. C. 3 and 4. D. 5 and 6.

ROCK CYCLE



14

The erosion and deposition phase of the rock cycle is shown by which numeral?

A. II
B. III
C. IV
D. V

15

The numeral III indicates the process of

A. compaction and cementation.
B. melting.
C. erosion and deposition.
D. cooling and crystallization.

▼Science

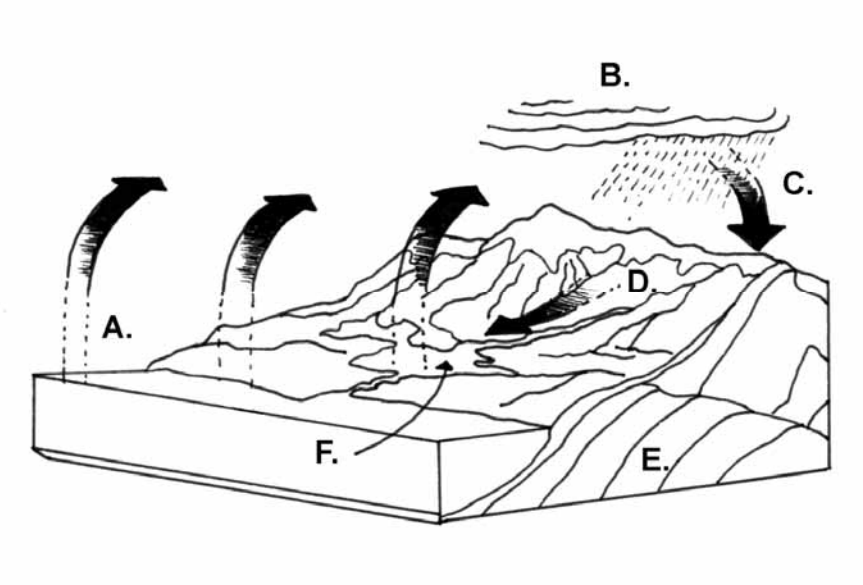
16

While digging, a person found that most of the rocks were igneous rock. What can be concluded?

A. The rocks were probably carried there by ancient people.
B. The area was once covered by an ocean.
C. A glacier passed through at one time.
D. A volcano was nearby at one time.

WATER CYCLE

Identify the processes in the water cycle below and answer the following question.



17

At point A, what process in the water cycle is taking place?

A. Condensation B. Precipitation C. Run-off D. Evaporation

A ROAD RACE

Some students are taking part in a community running race.

18

Five minutes into the race, what happens in the students' circulatory system?

A. The heart pumps more blood to the legs.
B. The muscles start to tighten.
C. Fluids pour into the stomach.
D. The lungs need more air.

19

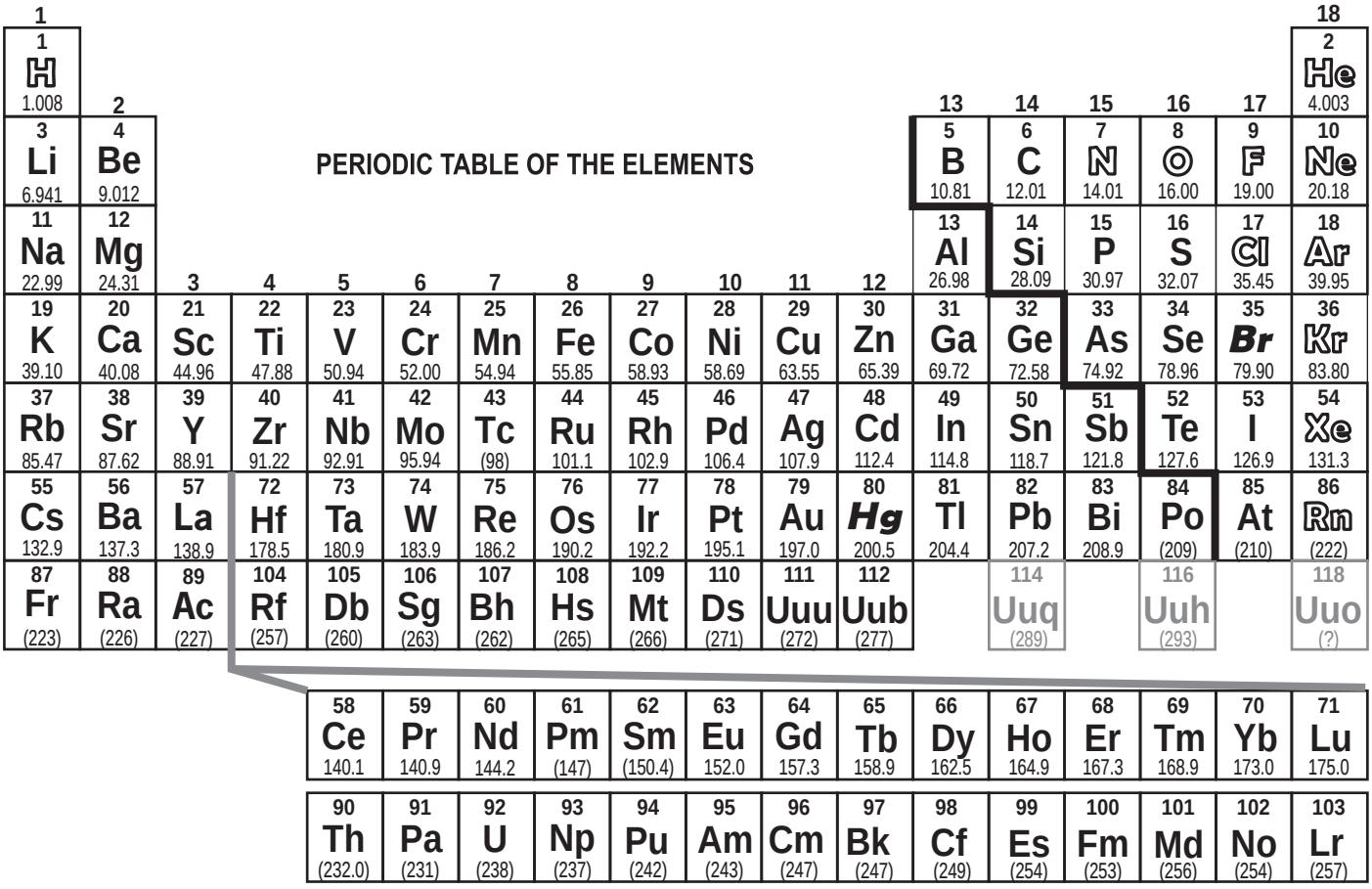
Ten minutes into the race, the students are perspiring or sweating. Which human body system is now involved?

A. Nervous system
B. Respiratory system
C. Skeletal system
D. Excretory system

20

One of the students falls and sprains an ankle. A part of which system is now injured?

A. Circulatory system
B. Respiratory system
C. Skeletal system
D. Nervous system


PERIODIC TABLE OF THE ELEMENTS
1 H 1.008
2 He 4.003
3 Li 6.941
4 Be 9.012
5 B 10.81
6 C 12.01
7 N 14.01
8 O 16.00
9 F 19.00
10 Ne 20.18
11 Na 22.99
12 Mg 24.31
13 Al 26.98
14 Si 28.09
15 P 30.97
16 S 32.07
17 Cl 35.45
18 Ar 39.95
19 K 39.10
20 Ca 40.08
21 Sc 44.96
22 Ti 47.88
23 V 50.94
24 Cr 52.00
25 Mn 54.94
26 Fe 55.85
27 Co 58.93
28 Ni 58.69
29 Cu 63.55
30 Zn 65.39
31 Ga 69.72
32 Ge 72.58
33 As 74.92
34 Se 78.96
35 Br 79.90
36 Kr 83.80
37 Rb 85.47
38 Sr 87.62
39 Y 88.91
40 Zr 91.22
41 Nb 92.91
42 Mo 95.94
43 Tc (98)
44 Ru 101.1
45 Rh 102.9
46 Pd 106.4
47 Ag 107.9
48 Cd 112.4
49 In 114.8
50 Sn 118.7
51 Sb 121.8
52 Te 127.6
53 I 126.9
54 Xe 131.3
55 Cs 132.9
56 Ba 137.3
57 La 138.9
72 Hf 178.5
73 Ta 180.9
74 W 183.9
75 Re 186.2
76 Os 190.2
77 Ir 192.2
78 Pt 195.1
79 Au 197.0
80 Hg 200.5
81 Tl 204.4
82 Pb 207.2
83 Bi 208.9
84 Po (209)
85 At (210)
86 Rn (222)
87 Fr (223)
88 Ra (226)
89 Ac (227)
104 Rf (257)
105 Db (260)
106 Sg (263)
107 Bh (262)
108 Hs (265)
109 Mt (266)
110 Ds (271)
111 Uuu (272)
112 Uub (277)
114 Uuq (289)
116 Uuh (293)
118 Uuo (?)
58 Ce 140.1
59 Pr 140.9
60 Nd 144.2
61 Pm (147)
62 Sm (150.4)
63 Eu 152.0
64 Gd 157.3
65 Tb 158.9
66 Dy 162.5
67 Ho 164.9
68 Er 167.3
69 Tm 168.9
70 Yb 173.0
71 Lu 175.0
90 Th (232.0)
91 Pa (231)
92 U (238)
93 Np (237)
94 Pu (242)
95 Am (243)
96 Cm (247)
97 Bk (247)
98 Cf (249)
99 Es (254)
100 Fm (253)
101 Md (256)
102 No (254)
103 Lr (257)

June 2008

Oregon Science 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	Ⓐ	Ⓑ	Ⓒ	Ⓓ
2	Ⓐ	Ⓑ	Ⓒ	Ⓓ
3	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4	Ⓐ	Ⓑ	Ⓒ	Ⓓ
5	Ⓐ	Ⓑ	Ⓒ	Ⓓ
6	Ⓐ	Ⓑ	Ⓒ	Ⓓ
7	Ⓐ	Ⓑ	Ⓒ	Ⓓ
8	Ⓐ	Ⓑ	Ⓒ	Ⓓ
9	Ⓐ	Ⓑ	Ⓒ	Ⓓ
10	Ⓐ	Ⓑ	Ⓒ	Ⓓ
11	Ⓐ	Ⓑ	Ⓒ	Ⓓ
12	Ⓐ	Ⓑ	Ⓒ	Ⓓ
13	Ⓐ	Ⓑ	Ⓒ	Ⓓ
14	Ⓐ	Ⓑ	Ⓒ	Ⓓ
15	Ⓐ	Ⓑ	Ⓒ	Ⓓ
16	Ⓐ	Ⓑ	Ⓒ	Ⓓ
17	Ⓐ	Ⓑ	Ⓒ	Ⓓ
18	Ⓐ	Ⓑ	Ⓒ	Ⓓ
19	Ⓐ	Ⓑ	Ⓒ	Ⓓ
20	Ⓐ	Ⓑ	Ⓒ	Ⓓ

BENCHMARK 3/ GRADE 8 SCIENCE
SAMPLE TEST KEY, 2003-2009

Item	Key	Score Reporting Category
1	A	Physical Science
2	B	Physical Science
3	A	Physical Science
4	C	Earth and Space Science
5	D	Earth and Space Science
6	D	Earth and Space Science
7	D	Life Science
8	C	Life Science
9	C	Life Science
10	D	Life Science
11	A	Physical Science
12	B	Physical Science
13	A	Physical Science
14	D	Earth and Space Science
15	B	Earth and Space Science
16	D	Earth and Space Science
17	D	Earth and Space Science
18	A	Life Science
19	D	Life Science
20	C	Life Science

CONVERTING TO A RIT SCORE

Number Correct	RIT Score	Number Correct	RIT Score
1	196	11	234*
2	204	12	237
3	210	13	239
4	213	14	242
5	217	15	246**
6	220	16	249
7	223	17	253
8	226	18	258
9	228	19	266
10	231	20	274

* Likely to meet Benchmark 3/ Grade 8 standard ** Likely to exceed Benchmark 3/ Grade 8 standard

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

Oregon Department of Education

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