

Distributed Item Review

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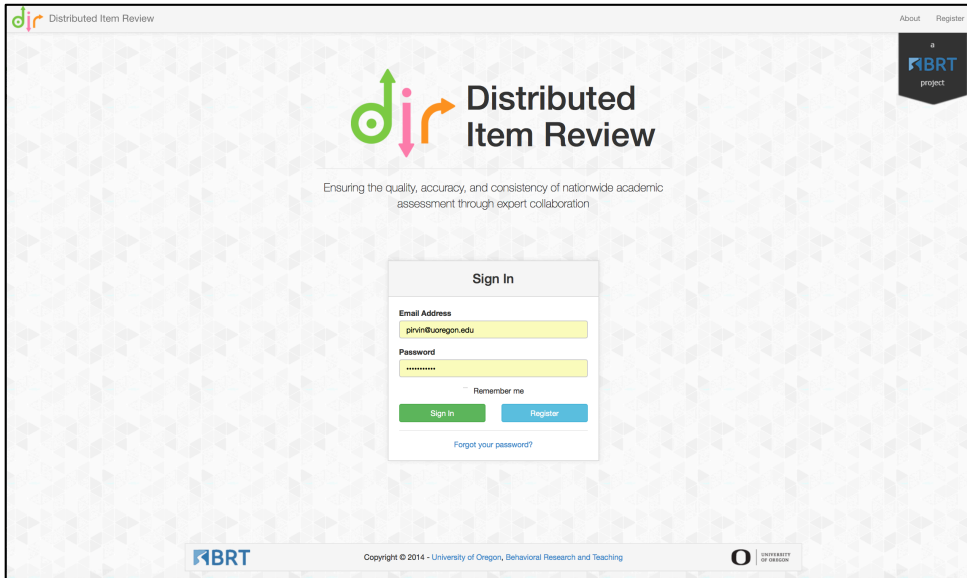
behavioral research & teaching

Distributed Item Review (DIR)

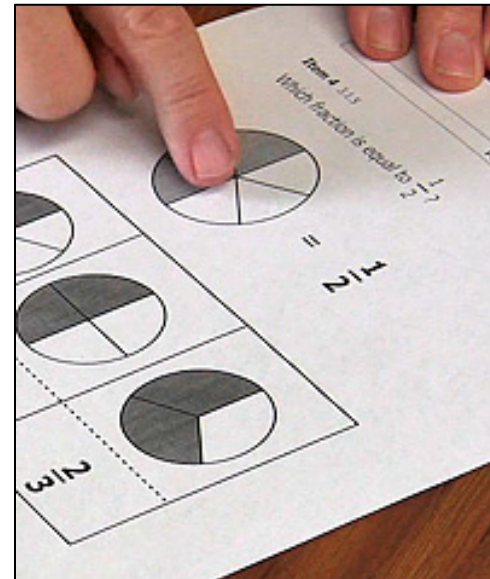
1. Description and Purpose
2. Intended Audiences
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4. Essential Features
 - a. Reviews
 - b. Assignments
 - c. Items
 - d. Standards
 - e. Questions
 - f. Resources
 - g. Reports
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5. User Guide

DIR Description and Purpose

A secure web-based system for presenting *test items* to *expert reviewers* across *broad geographic regions* so they can be *evaluated* for important dimensions of *bias, sensitivity, and alignment with standards*.



The screenshot shows the login page for the Distributed Item Review (DIR) system. The page has a light gray background with a subtle geometric pattern. At the top left, the DIR logo is displayed, consisting of the letters 'dir' in a stylized font with green and orange arrows. To the right of the logo, the text 'Distributed Item Review' is written in a bold, sans-serif font. Below this, a tagline reads: 'Ensuring the quality, accuracy, and consistency of nationwide academic assessment through expert collaboration'. In the center of the page is a 'Sign In' form. The form contains two input fields: 'Email Address' with the value 'pivir@uoregon.edu' and 'Password' with a masked password. Below the password field is a 'Remember me' checkbox. At the bottom of the form are two buttons: 'Sign In' (green) and 'Register' (blue). A link for 'Forgot your password?' is located below the buttons. In the top right corner, there are links for 'About' and 'Register'. In the bottom right corner, there is a logo for the 'RBRT project'.



DIR Intended Audiences

- *Content and Field Experts*
- *Education Researchers*
- *Education Leaders and Practitioners*
- *Test and Curriculum Developers*

Recruited/sampled from targeted
expert reviewer pools
(i.e., local, state, regional, national)

Reviewer View

Items

S05PHS1.1LSAMPLE

S05PHS1.1L01

S05PHS1.1L02

S05PHS1.1L03

S05PHS1.1M04

S05PHS1.1M05

S05PHS1.1M06

S05PHS1.1H07

S05PHS1.1H08

S05PHS1.1L09

S05PHS1.1L10

S05PHS1.1M11

S05PHS1.1M12

S05PHS1.1M13

S05PHS1.1H14

Grade 5 Science Item Review

Subject: Science

Grade: Grades 5, 8, and 11

Opening Date: 02/27/2016

Closing Date: 04/29/2016

Number of Items: 495

Resources

- ORExt Item Development and Specifications 2014-2015
- Oregon Accessibility Manual: 2014-2015 School Year
- The First Contact Census Student Characteristics: Supplemental Handout
- DIR Webinar Training Slides
- ORExt Essentialization Flowchart

Videos

Video of Representative Student Population

DIR Training Webinar Recording

Instructions

Welcome to the Oregon Extended Assessment Reading and Writing, Math, and Science Field Test Item Review. There are many test items for each grade level for you to review, and three questions to answer for each item. The three questions are: Alignment of Item to Essentialized Standard (0, 1, 2), Accessible to SPED Students (yes, no), and Item is free of Bias/Sensitivity Issues (yes, no). Please refer to the Training Slides in the Resources section to learn about each of these questions you will be rating. Please write all comments and suggestions in the Comments window below each set of questions. Your comments are critical to help us make an item aligned to an essentialized standard when you rate an item alignment as a 0. Also, if you have any suggestions for making the item more accessible to students with significant cognitive disabilities, please include those in the comments box, as well as suggestions if an item is not free of bias (no). Each item is on one page and before proceeding to the next page please be sure to click on the Save & Continue button at the bottom of each page. A green check mark will appear next to the item number on the left side of the page after you answer all three questions and click the Save & Continue button. Thank you for reviewing these items! If you have any questions please contact Steve Jonas at sjonas@uoregon.edu (ELA), or Shawn Irvin at pirvin@uoregon.edu (Science), or Dan Farley at dfarley@uoregon.edu (Math). Alternatively, you may call the HelpDesk at 1-800-833-3163.

Next »

Example Review Study from Reviewer Login: Alignment of Grade 5 Science Items to Essentialized Standards

Note:

- Study Information (top)
- Navigable Item List (left)
- Support Resources (center)
- Reviewer Instructions (bottom)

Reviewer clicks *Next* to begin review.

Reviewer View cont.

Example Review Study from Reviewer Login: Non-secure Oregon Extended Assessment Practice Item

Note:

- **Navigable Item List** (top left)
- **Support Resources** (bottom left)
- **Item** (center, screenshot – see slide 14)
- **Questions** (bottom)
- **Standards** (bottom)

Reviewer clicks *Save and Continue* to save responses and move to next item.

Items

☒ S05PHS1.1LSAMPLE

☐ S05PHS1.1L01

☐ S05PHS1.1L02

☐ S05PHS1.1L03

☐ S05PHS1.1M04

☐ S05PHS1.1M05

☐ S05PHS1.1M06

☐ S05PHS1.1H07

☐ S05PHS1.1H08

☐ S05PHS1.1L09

☐ S05PHS1.1L10

☐ S05PHS1.1M11

☐ S05PHS1.1M12

☐ S05PHS1.1M13

☐ S05PHS1.1H14

Resources

OREx Item Development and Specifications 2014-2015

Oregon Accessibility Manual: 2014-2015 School Year

The First Contact Census Student Characteristics: Supplemental Handout

DIR Webinar Training Slides

OREx Essentialization Flowchart

Video of Representative Student Population

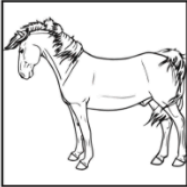
DIR Training Webinar Recording

Grade 5 Science Item Review - ITEMS_GR5SCIPRACTICE


Item

Item 4


Which is an animal?



horse



mushroom



tree

Questions

1. Rate the strength of alignment between the test item and standard/s.

☐ 0 - Insufficient alignment

☐ 1 - Sufficient alignment

☐ 2 - Strong alignment

2. Item is Free of Bias

☐ Yes

☐ No

3. Item is Accessible to SPED Students

☐ Yes

☐ No

4. For any "0" or "No" rating, please provide a rationale and recommendation/s for improving the item.

Standards

☒ S05LFS2.1: Recognize that living organisms need different things to grow and survive.

L - Identify which is an animal, plant and decomposer using pictures of common organisms, and including non-living objects as comparators; M - Identify that animals eat food (plants, other animals) and drink water to survive, and that plants need materials in soil, air and water to survive (i.e., compared to common objects/features they don't need) - emphasis is on the matter these organisms need; H - Expand to include where in the environment such matter needed for survival might come from.

« Home

Save and Continue »

[6]

Essential Features: Reviews

Reviews are administrator-defined based on a research study's design and goals. Reviews frame:

- Subject (ELA, Math, or Science)
- Title
- Date (general descriptive)
- Start/End Dates
- Grade(s)
- Resources
- Review Instructions
- Email Notice Message
- Questions
- Review Questions

Essential Features: Reviews cont.

Example Review: Alignment Study of ELA Items from the Oregon Extended Assessment

The screenshot shows the DIR application interface. On the left is a dark sidebar with navigation links: Assignments, Items, Questions, Resources, Reviews (highlighted), Standards, Reports, Users, and My Account. The main content area is titled 'Reviews' and shows a table of 5 records. Above the table are buttons for 'Create Review' (green) and 'Delete' (red). The table has columns for Subject, Title, Start Date, End Date, Edit, and Delete. The records are:

Subject	Title	Start Date	End Date	Edit	Delete
English	ORExt English Language Arts Items	02/27/2016	03/05/2016		<input type="checkbox"/>
Science	ORExt Science Items	02/27/2016	03/05/2016		<input type="checkbox"/>
Math	ORExt Math Items	02/27/2016	03/26/2016		<input type="checkbox"/>
Math	PASA Sample Item Review	04/21/2015	05/29/2015		<input type="checkbox"/>
English	Demonstration Review	01/01/2015	12/31/2020		<input type="checkbox"/>

At the bottom of the interface, there is a footer with the BRT logo, copyright information 'Copyright © 2014 - University of Oregon, Behavioral Research and Teaching', and the University of Oregon logo.

Reviews / Edit

Subject
English Language Arts

Title
ORExt English Language Arts Items

Date
Fall 2014

Start Date
02/27/2016

End Date
03/05/2016

Grade
All Grades

Resources

- ☒ ORExt Essentialization Flowchart
- ☒ DIR Training Webinar Recording
- ☐ PASA Essentialization Process

Review Instructions

There are many test items for each grade level for you to review, and three questions to answer for each item. The three questions are: Alignment of item to Essentialized Standard (0, 1, 2), Accessible to SPED Students (yes, no), and item is free of Bias/Sensitivity Issues (yes, no). Please refer to the Training Slides in the Resources section to learn about each of these questions you will be rating.

Please write all comments and suggestions in the Comments window below each set of questions. Your comments are critical to help us make an item aligned to an essentialized standard when you rate an item alignment as a 0. Also, if you have any exceptions for making the item more accessible, in

Email Notice Message

Thanks for registering for the review!

Questions

Comments

Review Questions (in order)

1. Rate the strength of alignment between the test item and standard/s.
 - ☐ 0 - Insufficient alignment
 - ☐ 1 - Sufficient alignment
 - ☐ 2 - Strong alignment

Essential Features: Assignments

Assignments are housed inside reviews, and allow the administrator to:

- Bulk select and order items (and associated standards/images) by content area, grade, and other dimensions
- Select and designate reviewers
- Provide assignment-specific directions to reviewers

Essential Features: Assignments cont.

Assignments						19 Records
Create Assignment						Delete
Review	Title	Closing Date		Edit	Delete	
ORExt English Language Arts Items	All ELA Items	03/05/2016	5	Edit	Delete	
ORExt Science Items	Grade 5 Science Item Review	03/05/2016	4	Edit	Delete	
ORExt Science Items	Grade 8 Science Item Review	03/05/2016	3	Edit	Delete	
ORExt Science Items	Grade 11 Science Item Review	03/05/2016	3	Edit	Delete	
ORExt Math Items	Grade 3 Math Item Review	03/26/2016	3	Edit	Delete	
ORExt Math Items	Grade 4 Math Item Review	03/26/2016	3	Edit	Delete	
ORExt Math Items	Grade 5 Math Item Review	03/26/2016	4	Edit	Delete	
ORExt Math Items	Grade 6 Math Item Review	03/26/2016	3	Edit	Delete	
ORExt Math Items	Grade 7 Math Item Review	03/26/2016				
ORExt Math Items	Grade 8 Math Item Review	03/26/2016				
ORExt Math Items	Grade 11 Math Item Review	03/26/2016				

Example Assignment:
**Grade 5 Science Item
Assignment for Steve
and Shawn**

[Assignments](#) / [Edit](#)

Review
ORExt Science Items

Title
Grade 5 Science Item Review

Description
Included in this assignment are 495 individual science items. Please review all items making sure to take breaks as necessary, so that you review each item carefully and completely.
Please write all comments and suggestions in the Comments window below each set of questions. Your comments are critical to help us make an item aligned to an essentialized standard when you rate an item alignment as a 0. Also, if you have any suggestions for making the item more accessible to students with significant cognitive disabilities, please include those in the

Reviewers

☒ Jonas, Steve <sjinor@yahoo.com>
☐ Glasgow, Aaron <aglasgow@uoregon.edu>
☐ Cords, Trevor <tcords@gmail.com>
☐ Megert, Raina <rainam@uoregon.edu>
☒ Irvin, Shawn <p.shawn.irvin@gmail.com>
☐ Aazzerah, Rachel <rachel.aazzerah@state.or.us>

Items
S08PHS1.2LSAMPLE
S08PHS1.2L01

Assignment Items (in order)

- S05PHS1.1LSAMPLE
- S05PHS1.1L01

Essential Features: Items

Diverse test item types can be:

- Bulk uploaded into the DIR using .csv files
- Instantly associated (paired) with desired entities (e.g., standards, image files)
- Associated with specific reviews/assignments

Essential Features: Items cont.

Items / Bulk Upload

To upload items in bulk, the *Items File* must be in .csv format and contain the following columns in order (optional fields may be left blank):

- **Item ID** - Unique item identifier
- **Group** - (optional) Item group / task
- **Standards** - A colon-delimited set of standards
- **Item Information** - (optional) Scoring protocol and information
- **Prompt** - (optional) Item prompt text
- **Option A** - (optional) Response option A text
- **Option B** - (optional) Response option B text
- **Option C** - (optional) Response option C text
- **Correct** - (optional) Letter of correct response option (a, b, or c); 'a' is assumed to be correct if missing

To include images for items, the *Images Archive* must be an archive in .zip format containing the images. Item images must have a file name of the corresponding Item ID, while item option images must have a file name of the corresponding Item ID followed by an underscore '_', followed by the option letter. Accepted file formats are JPEG, PNG, GIF, and SVG.

Example: For an item with ID '123XYZ', the following are valid image file names: *123XYZ.jpg*, *123XYZ_a.png*, *123XYZ_b.svg*, and *123XYZ_c.gif*.

Review

ORExt English Language Arts Items

Items File (.csv)

Choose File no file selected

Images Archive (.zip)

Choose File no file selected

Upload

.csv column
headers for bulk
upload →
*Item ID and
Standards Req'd*

Select .csv file containing relevant column headers

Select zipped image folder containing image files to be
paired with items → *Linked by Item ID*

Essential Features: Items cont.

	A	B	C	D	E	F	G	H	I	J
1	Item ID	Group	Item	Standards	Item Information	Prompt	Option A	Option B	Option C	Correct
2	M03OAT1.1_L04	3		1 M03OAT1.1	(L) Here is a feather on a hat. This hat has one feather. (Point to the student materials.) If you have one hat, how many feathers do you have: 1, 2, or 3?	If you have one hat, how many feathers do you have?	1	2	3	a
3	M03OAT1.2_L04	3		2 M03OAT1.2	(L) Here are 4 hats with a dashed line between them. (Point to student materials.) How many hats are on one side on the dashed line: 1, 2, or 3?	How many hats are on one side on the dashed line?	1	2	3	b
4	M03OAT4.9_L02	3		3 M03OAT4.9	(L) Here are some grapes. (Point to student materials.) How many grapes are there: 5, 6, or 7?	How many grapes are there?	5	6	7	c
5	M03NBT1.2_L03	3		4 M03NBT1.2	(L) Here is an addition problem. (Point to student materials.) $6 + 8 =$ which number: 8, 10, or 14?	$6 + 8 = \underline{\hspace{1cm}}?$				
6	M03OAT1.2_M08	3		5 M03OAT1.2	(M) Here are two trees with some apples. (Point to student materials.) There are 8 apples all together. How many apples are on one tree: 4, 5, or 6?	How many apples are on tree?				
7	M03OAT4.8_SAMPLE	3		6 M03OAT4.8	(M) Here are 5 erasers. Sam has 5 erasers, but gives one to Hannah. (Point to student materials.) How many erasers does Sam have left: 1, 4, or 5?	How many erasers does Sam have left?				
8	M03NBT1.3_M07	3		7 M03NBT1.3	(M) Here is a multiplication problem. (Point to student materials.) $3 \times 2 =$ which number: 2, 3, or 6?	$3 \times 2 = \underline{\hspace{1cm}}?$				
9	M03NOF1.1_M05	3		8 M03NOF1.1	(M) Here is a puddle with 10 ducks. (Point to student materials.) Five of the ducks have spots. What portion of the ducks has spots: 0, 1/2, or 1?	What portion of the ducks has spots?	0	2-Jan	1	b

.csv column headers for bulk upload e.g., Math item bulk upload

Essential Features: Items cont.

Key Considerations:

1. Item IDs ***must*** be both unique and informative – Ideally linked to both standards and image files
For example, from the Oregon Extended Assessment, Item ID **S05ESS1.1H14** indicates:
Science content area (S), Grade 5 (05), Earth/Space Science Essentialized Standard 1.1 (ESS1.1), Hard complexity (H), and Item #14 written to standard ESS 1.1 (14)
2. Items can be created by populating some/all of .csv
For example, items can be built through the .csv (see slides 12-13), or by populating Item ID/Standard columns and bulk uploading image files (e.g., screenshots) of items with file names matched to Item IDs

Essential Features: Standards

Diverse standard types can be:

- Bulk uploaded into the DIR using .csv files
- Instantly associated (paired) with test items (using the item .csv – see slides 11-14)

Standards / Bulk Upload

To upload standards in bulk, the *Standards File* must be in .csv format and contain the following columns in order:

- **Standard ID** - Unique standard identifier
- **Subject** - Must be one of: *english*, *math*, or *science*
- **Domain** - (optional)
- **Description** - (optional)

Standards File (.csv)

no file selected

Upload

.csv column headers for bulk upload
→ **Standard ID and Subject Req'd**

Select .csv file containing relevant column headers

Essential Features: Standards cont.

	A	B	C	D	E	F
1	Standard ID	Subject	Domain	Description		
22	M03GEO1.1	math	Use attributes of triangles, squares, and circles to classify shapes.	L - identify triangles (all shapes in answer choices same-size); M - identify squares (shapes in answer choices of various sizes); H - identify circles (shapes in answer choices of various sizes).		
23	M03GEO1.2	math	Use unit squares to determine 1/2 or the whole.	L- use unit squares to identify whole areas shaded up to 2X2; M - use unit squares to identify whole or 1/2 areas shaded up to 3X3 (with shading done only one side); H - use unit squares to identify whole areas shaded up to 4X4 or 1/2 of any square figure up to 4X4 (with shading done on diagonals).		

.csv column headers for bulk upload
e.g., Math standards bulk upload

Standards						18 Records
GEO		Q	Reset	View 50		
Create Standard	Bulk Upload				Delete	
Subject	Standard ID	Domain	Standards		Edit	Delete
Math	M03GEO1.1	Use attributes of triangles, squares, and circles to classify shapes.	L - identify triangles (all shapes in answer choices same-size); M - identify squares (shapes in answer choices of various sizes); H - identify circles (shapes in answer choices of various sizes).			
Math	M03GEO1.2	Use unit squares to determine 1/2 or the whole.	L- use unit squares to identify whole areas shaded up to 2X2; M - use unit squares to identify whole or 1/2 areas shaded up to 3X3 (with shading done only one side); H - use unit squares to identify whole areas shaded up to 4X4 or 1/2 of any square figure up to 4X4 (with shading done on diagonals).			
Math	M04GEO1.1	Identify points, line segments, and angles.	L - Given a point, line, and angle, student identifies point; M - identify line segments; H - identify angles.			
Math	M04GEO1.2	Identify triangles, circles, squares, and rectangles.	L - identify triangles; M - identify squares and circles; H - identify rectangles.			
Math	M04GEO1.3	Identify lines that divide objects/shapes into equal halves.	L - identify line that divides objects in half; M - identify line that divides squares or circles in half; H - identify line that divides rectangles in half.			
Math	M05GEO1.2	Identify points graphed in the first quadrant of the coordinate plane.	L - identify value of Y when provided with X and verbal directions to X; M - identify location of a point when provided a verbal directions to its location; H - identify a point given its coordinates.			
Math	M05GEO2.4	Match a description with a two dimensional figure.	L - match a description of triangle with a triangle figure; M - match a description of a square/circle with a square/circle figure; H - match a description of a rectangle with a rectangle figure.			

Essential Features: Questions

- Customizable ***review questions*** allow test items to be reviewed for important dimensions of ***bias, sensitivity, and alignment with standards***
- Current response option formats include:
 - Yes/No
 - Numeric (Likert rating scale)
 - Text Box
 - Comment

Essential Features: Questions cont.

Questions					5 Records
Create Question					Delete
Type	Text	Format	Edit	Delete	
Standard	Rate the strength of alignment between the test item and standard/s.	Numeric	Edit	<input type="checkbox"/>	
Item	Item is Free of Bias	Boolean	Edit	<input type="checkbox"/>	
Item	Item is Accessible to SPED Students	Boolean	Edit	<input type="checkbox"/>	
Item					
Item					

Questions / Create

Type
Standard

Text
Rate the strength of alignment between the test item and standard/s.

Format
Numeric

**Description**

0

Not Aligned

[Delete](#)

1

Somewhat Aligned

[Delete](#)

2

Aligned

[Delete](#)

[Create](#)

Example Review Question:
Alignment to standards
rating, with 3-point Likert
Scale Response Format

Essential Features: Resources

Diverse Resources pertinent to research study can be uploaded, described for reviewers, and associated with reviews (see slides 5-8)

- PDFs (e.g., training slides, academic content standards, state accessibility manual)
- Word documents (e.g., item-building template)
- Videos (e.g., reviewer training webinars, representative testing population)
- Image files (e.g., standard essentialization flow chart)

Essential Features: Resources cont.

Resources9 Records

Create ResourceDelete

	Title	Created By	Edit	Delete
	Video of Representative Student Population	Steve J.		
	ORExt Item Development and Specifications 20	P. Shawn I.		
	Oregon Accessibility Manual: 2014-2015 School Year	P. Shawn I.		
	The First Contact Census Student Characteristics: Supplemental Handout	P. Shawn I.		
	DIR Webinar Training Slides	P. Shawn I.		
	ORExt Essentialization Flowchart	P. Shawn I.		
	DIR Training Webinar Recording	Steve J.		
	PASA Essentialization Process	Dan F.		
	PASA Item Writer Training PPT	Dan F.		

Resources / Edit

Title

Video of Representative Student Population

Description

Video of seven different students who represent the student population that participate in Oregon's Extended Assessment. Please note, this video must be viewed using Safari, Internet Explorer or Google Chrome - Firefox will not work.

File (OregonExtended_StudentPopulationsV2small.m4v)

Choose File

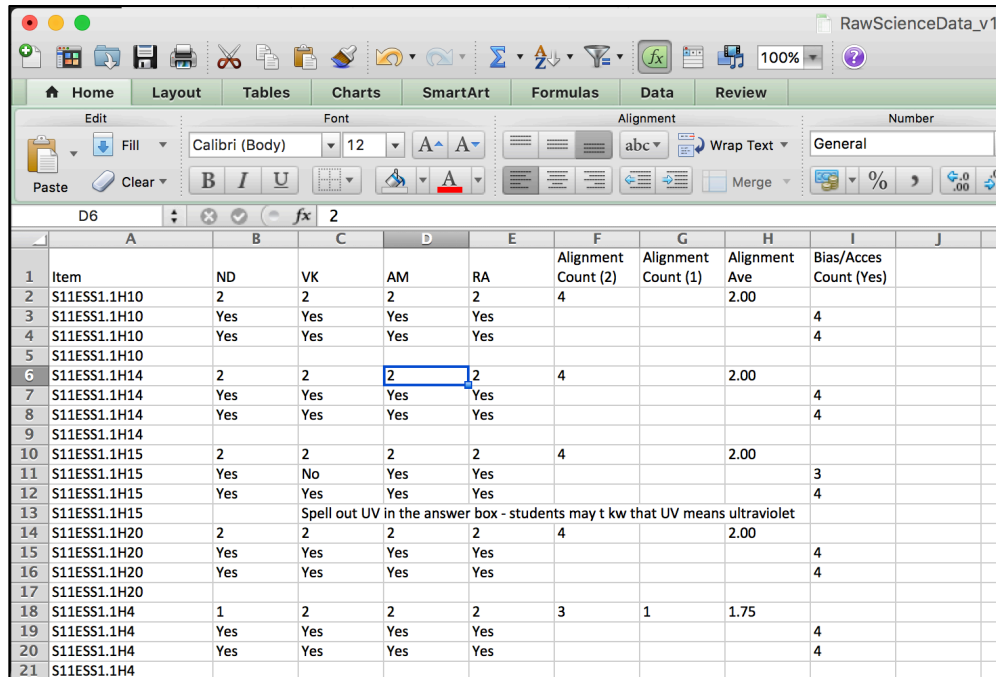
no file selected

Update

Example Video Resource:
Representative Student Population for Oregon Extended Assessment

[20]

Essential Features: Reports



	A	B	C	D	E	F	G	H	I	J
1	Item	ND	VK	AM	RA					
2	S11ESS1.1H10	2	2	2	2	Alignment Count (2)	Alignment Count (1)	Alignment Ave	Bias/Access Count (Yes)	
3	S11ESS1.1H10	Yes	Yes	Yes	Yes	4		2.00	4	
4	S11ESS1.1H10	Yes	Yes	Yes	Yes				4	
5	S11ESS1.1H10									
6	S11ESS1.1H14	2	2	2	2	4		2.00		
7	S11ESS1.1H14	Yes	Yes	Yes	Yes				4	
8	S11ESS1.1H14	Yes	Yes	Yes	Yes				4	
9	S11ESS1.1H14									
10	S11ESS1.1H15	2	2	2	2	4		2.00		
11	S11ESS1.1H15	Yes	No	Yes	Yes				3	
12	S11ESS1.1H15	Yes	Yes	Yes	Yes				4	
13	S11ESS1.1H15		Spell out UV in the answer box - students may t kw that UV means ultraviolet							
14	S11ESS1.1H20	2	2	2	2	4		2.00		
15	S11ESS1.1H20	Yes	Yes	Yes	Yes				4	
16	S11ESS1.1H20	Yes	Yes	Yes	Yes				4	
17	S11ESS1.1H20									
18	S11ESS1.1H4	1	2	2	2	3	1	1.75		
19	S11ESS1.1H4	Yes	Yes	Yes	Yes				4	
20	S11ESS1.1H4	Yes	Yes	Yes	Yes				4	
21	S11ESS1.1H4									

[Download .csv file](#)
for statistical
analysis (e.g., Excel,
SPSS, R)

ORExt English Language Arts Items

02/27/2016 - 03/05/2016




All ELA Items




Jonas, Steve	0%
Cords, Trevor	0%
Megert, Raina	28%
Farley, Dan	0%
Tindal, Gerald	0%

[View web report](#)
for a “quick view” of
reviewer progress and
review completeness

Sample (Practice) Test

ORExt - Practice Test - Grade 3 - English Language Arts - Scoring Protocol

Item 1	Option:	A	B	C	Correct	Scoring (0/1)
L - Here are three pictures with words. (Point to each.) She runs. (Point to sentence.) Which word is runs?					a	
Scoring: 0 = incorrect; 1 = correct						



Item 2	Option:	A	B	C	Correct	Scoring (0/1)
L - Here are three pictures with words. (Point to each.) The car is red. What is red: boy, car, or table?						
Scoring: 0 = incorrect; 1 = correct						

ORExt - Practice Test - Grade 3 - English Language Arts - Student Materials

Item 1

She runs.

Which word is runs?

		
runs	sits	talks

For the Oregon Extended Assessment, InDesign templates create Scoring Protocol for test booklets for administrators (top left), and Student Materials test booklets for students (bottom right)

DIR User Guide

- DIR Technical Manual and User Guide is in preparation, to be completed Spring 2016, and posted to the BRT website:

<http://www.brtprojects.org/publications/technical-reports>

- Detailed information on DIR system
 - Step-by-step administrator's guide to creating and conducting item/test reviews
- This presentation posted:

<http://www.brtprojects.org/publications/presentations>



behavioral research & teaching

DIR System

<http://brtitemreview.com>

Also found at:

<http://www.brtprojects.org/labs>



behavioral research & teaching

For More Information About the DIR, Contact:

P. Shawn Irvin, PhD
pirvin@uoregon.edu

Dan Farley
dfarley@uoregon.edu



behavioral research & teaching