Data: Helping Students Interpret Numeric Information
Course Overview and Schedule

This course looks at some common uses (and misuses) of data. Learn about the measures of central tendency, graphs, and probability. Through the course readings, activities, and discussions, you'll review basic concepts and explore strategies for introducing and teaching these concepts to your adult students.

Format: Scheduled, facilitated
Estimated Completion Time: 2-3 hours per week for 6 weeks (12 hours total)
Contact: literacy@worlded.org
Prerequisite: N/A

Course Objectives
By the end of course, you will be able to:
- Recall your knowledge of measures of central tendency, graphs, probability, and bias factors in data representation;
- Determine the math skills necessary for adult students to describe, analyze, and represent data in various formats;
- Adapt sample activities for use with your adult students; and
- Evaluate your results and plan for improvements.

Course Completion
To successfully complete this course, the instructor will assess your work based on whether and to what extent you have:
1. Participated in asynchronous discussions within lessons, posting to discussion threads and responding to other participants' posts (25%)
2. Posted comments to the *Review* discussions and responded to two other participants' *Review* posts at the end of each lesson (10% per lesson, total of 50%)
3. Developed an instructional plan related to one of the topics of the course: measures of central tendency scatter plots, line graphs, bar graphs, circle graphs, or probability (25%)

If you score an 80% or above, you will successfully complete the course and earn a Certificate of Completion.

COURSE SCHEDULE

Week 1

Getting Started

- ☐ Required Software and Course Features
- ☐ Course Objectives
- ☐ Planning Activities from Lessons
- ☐ Principles of Constructivism
- ☐ Course Requirements
- ☐ Planning for Learning
- ☐ Personal Learning Goals
- ☐ Forum: Course Goals
- ☐ Lesson Summary

Week 2

Measures of the Central Tendency

- ☐ Measures of Central Tendency
- ☐ Mean, Median, and Mode
- ☐ Mean
- ☐ Median
- ☐ Mode
- ☐ Measures of Central Tendency
- ☐ Forum: Mean, Median, or Mode
- ☐ Strengths and Weaknesses
- ☐ Choosing a Measure of Central Tendency
- ☐ Range
- ☐ Reflection
- ☐ Prerequisite Skills
- ☐ Sample Activities
- ☐ For Further Exploration (and Fun!)
- ☐ Classroom Application
- ☐ Critical Thinking About Mean, Median, and Mode
- ☐ Using Student Contexts
- ☐ Assessing Student Learning
- ☐ Lesson Review
- ☐ Forum: Lesson Review
- ☐ Forum: Questions and Observations
- ☐ Lesson Summary

Week 3

Line Graphs and Scatter Plots

- ☐ Introduction to Graphs
- ☐ Line Graphs and Scatter Plots
- ☐ Forum: Graphs
- ☐ Line Graphs
- ☐ Components of Line Graphs
- ☐ Describing Trends
- ☐ Scatter Plots
- ☐ Forum: Correlations
- ☐ Correlations
- ☐ Line of Best Fit
- ☐ Making Predictions
- ☐ Outliers
- ☐ Reflections
- ☐ Prerequisite Skills
- ☐ Sample Activities - Graphs
- ☐ Forum: Reading Line Graphs
- ☐ Creating Line Graphs
- ☐ Forum: Creating Line Graphs from Collected Data
- ☐ Establishing the Scale
- ☐ Forum: Common Errors
- ☐ Completing the Scales
- ☐ Describing Trends
- ☐ Online Tools for Creating Graphs
- ☐ Sample Activities - Scatter Plots
- ☐ Lesson Review
- ☐ Forum: Lesson Review
- ☐ Forum: Questions and Observations
- ☐ Lesson Summary

Week 4

Bar and Circle Graphs

- ☐ Bar and Circle Graphs
- ☐ Bar Graphs
- ☐ Circle Graphs
- ☐ Reflection
- ☐ Classroom Application
- ☐ Circle Graphs in Instruction
- ☐ Forum: Levels
- ☐ Sample Activities

- ☐ Creating a Graph
- ☐ Converting and Choosing Graphs
- ☐ Lesson Review
- ☐ Forum: Lesson Review
- ☐ Forum: Questions and Observations
- ☐ Lesson Summary

Week 5

Probability Concepts

- ☐ Probability Concepts
- ☐ Theoretical Probability
- ☐ Number Line as Visual Aid
- ☐ Using Number Lines
- ☐ Forum: Theoretical vs. Experimental
- ☐ Independent and Dependent Probability
- ☐ Forum: Sampling
- ☐ Probability and Non-Probability Sampling
- ☐ Forum: Systematic and Random Sampling
- ☐ Combination Problems
- ☐ Forum: Combination Problems

- ☐ Reflection
- ☐ Classroom Application
- ☐ Sample Activities
- ☐ Forum: Dependent Probability
- ☐ Yahtzee!
- ☐ Sample Activities
- ☐ Forum: Combination Topics
- ☐ Sample Activities
- ☐ Lesson Review
- ☐ Forum: Lesson Review
- ☐ Forum: Questions and Observations
- ☐ Lesson Summary

Week 6

Critical Reading

- ☐ Critical Reading
- ☐ Misleading Representations of Data
- ☐ Slanted Statistics
- ☐ Forum: Misleading Figures
- ☐ Forum: Statistical Literacy
- ☐ Reflection

- ☐ Classroom Application
- ☐ Sample Activities
- ☐ Lesson Review
- ☐ Forum: Lesson Review
- ☐ Forum: Questions and Observations
- ☐ Lesson Summary

Week 7

Course Summary

- ☐ Course Summary
- ☐ Forum: Instructional Plan
- ☐ Forum: Reflections
- ☐ Evaluation
- ☐ Certificate

Course materials are available for one month from the course end date.

Minimum Technical Requirements

World Education's online courses are offered via the Moodle learning management system (LMS) and WebEx Internet conferencing system. To participate in courses, you must have access to a reliable computer with an Internet connection. We recommend a high speed Internet connection. For courses that include Webinar sessions, you must have the ability to be on an Internet-connected computer and a telephone at the same time. We recommend a screen resolution 800×600 or higher. If you are using a mobile device, we recommend that you review these [FAQs from Moodle](#).

System Requirements

Moodle requires that JavaScript, cookies, and Java be enabled in a recommended browser. (Note: Enabled pop-up blockers may interfere with accessing content.) Recommended browsers consist of any standards-supporting browser. Examples are:

- Mozilla Firefox 3 or later
- Safari 3 or later
- Google Chrome 4 or later
- Opera 9 or later
- Microsoft Internet Explorer 7 or later

Additional Plug-ins

Some courses require additional plug-ins to access media and course resources, such as Flash and Adobe Acrobat. You should have the ability to download and install these plug-ins on your computer, or have access to a technical support staff person who can do this for you.

Course Policies

Registration and Payment

1. Courses may be canceled or rescheduled within one week of the course start date due to insufficient enrollment. Refunds will be processed for all registrants in canceled courses. Registrants in rescheduled courses will remain enrolled with the new date. They may request a refund of the full course fee within 4 weeks (20 business days) of the notification of the course date change in lieu of enrollment in the rescheduled course
2. Full refunds or credit may be given for requests made no later than 5 business days prior to the course start date.
3. Refunds will not be provided for registrants who cannot meet the minimum technical requirements for course participation.
4. Full refunds or credit will be given to registrants who meet the minimum technical requirements and have technical problems that significantly impact the delivery of the course content and for which technical support is not able to resolve.

Course Access

Facilitated courses:

- After registering for a course, participants will receive a confirmation that their registration has been received. If the course has low enrollment, a notification will be sent out a week before the course start date.
- Within five days before the course start date, an email will be sent out to each participant with instructions on logging in and getting started.

Self-paced courses:

- After registering for a course, participants will receive an email directing them to set up their account or add the course to their current account.
- World Education staff will make a reasonable attempt to ensure that the course registrants are able to access the online course system by sending confirmation emails, and through telephone contact if necessary, using the contact information provided upon course registration.

Communications Policies
1. Course communications may include group e-mails, discussion posts, chats, Webinars, Webinar archives, team discussions, and instructor/participant correspondence.
2. Course instructors will use e-mail, either within or outside of the LMS, as the primary source of communication with course participants. Electronic communications will be directed to the e-mail addresses located in the participants' profile within the LMS.
3. Only course participants, instructors, and World Education staff may access and use LMS course communication tools.
4. Upon request of the individual participant, and World Education staff, instructors, and facilitators may provide a course participant's sponsor (i.e., one who purchases the course on behalf of the course participant), with the Course Outline and Schedule and the participant's LMS Grade Book information. World Education staff and instructors will not provide sponsors access to or records of any course communications.

Completion Policies
1. Upon satisfactory completion of all course requirements, course participants may download and print a Certificate of Completion. World Education does not mail hard copies of the course completion certificate.
2. The Certificate of Completion documents the professional development hours associated with the course, as listed in the course description; it does not document the actual hours the course participant spent doing coursework. Participants may take more or less time, depending on their depth of participation and comfort with technology. Completion time is the estimated time participants should expect to spend with a course; however, the actual number of hours each participant spends on coursework may vary greatly.
3. Course completion requirements are published in the Course Outline and Schedule, available as a document within the course. In order to receive a Certificate of Completion, the participant must meet the course completion requirements listed on the Course Outline and Schedule by the final deadline posted. The course instructor has the sole authority to determine if the participant has met the minimum requirements for course completion.
4. Participants may negotiate revision and re-submission of their work with the course instructor; however, the participant must submit revised work by a mutually agreed upon deadline in order to receive the Certificate of Completion.
5. Participants may negotiate a one-time extension for final course completion at the sole discretion of the course instructor. If the participant fails to meet the extended deadline, no further extensions will be allowed.
6. Course content is only available for the duration of the course: After the course has closed, course content and any documents participants have uploaded to the LMS may not be available.