



# Using Forum Products in Local and State Education Agencies

Summer Forum 2017

Forum Joint Session  
Sunday, July 30, 2017

# Panelists

- Marilyn King
  - Bozeman School District #7 (MT)
- Susan Williams
  - Virginia Department of Education

# 1 vs. 100

The Forum Edition

## Meet the Forum....

- Member for less than 3 years
- Member for 3-9 years
- Member for 10 or more years
- LEA Member
- SEA Member
- Associate Member
- Federal Government
- Past Workgroup Member

# Rules of the Game....

- Everyone needs scrap paper and a pen
- Members of the Forum (audience) stand and remain standing
- Write the answers on the scrap paper
- If the answer is correct, the Forum member remains standing
- If the answer is wrong, the Forum member sits
- One contestant will play along on the stage

## Rules continued....

- The contestant gets to talk (out loud) through the question and the choices before deciding
- The contestant may ask for assistance from:
  - a bordering state
  - a poll of the Forum members who are still standing
  - a federal employee
- If the contestant's answer is wrong, he/she is replaced by a Forum member who is still standing
- Last person standing wins!

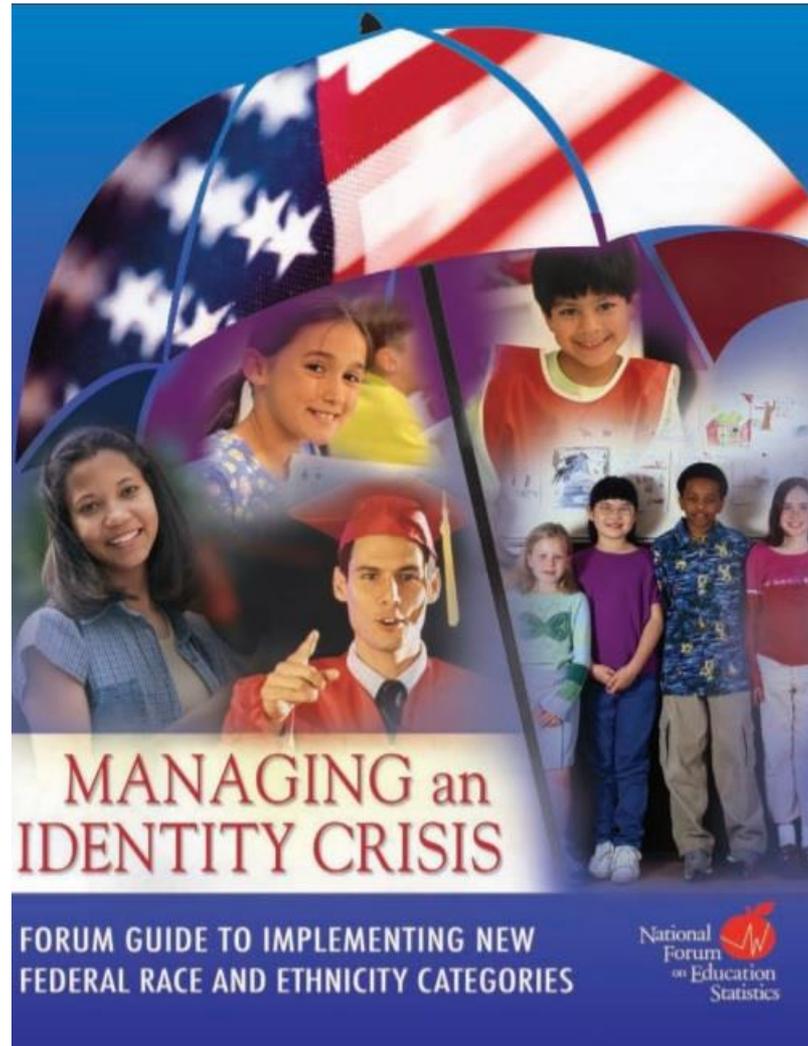


**Let's Play**

In preparation for the 2007 implementation of the two-part Race/Ethnicity question format, what Forum guide was written?

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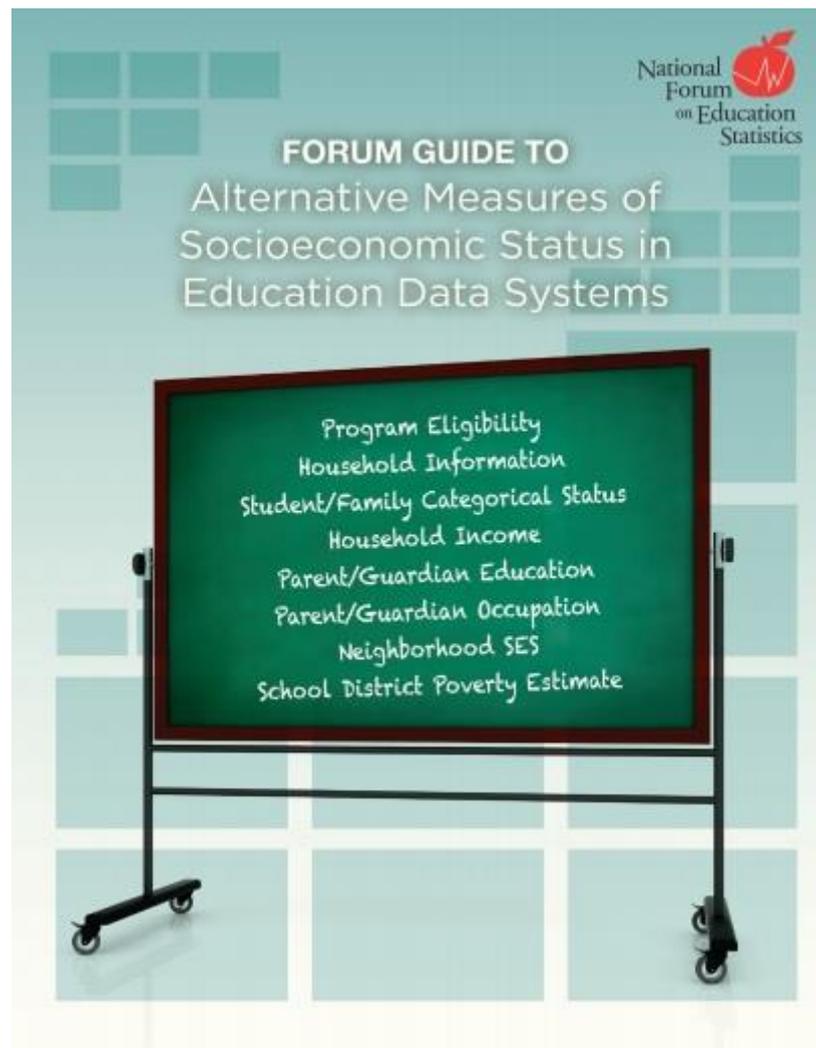
- A. Guidelines for Standard Race Codes
- B. CEDS
- C. Managing an Identity Crisis
- D. Race to the Top of Identification



How many plausible alternatives are outlined in *The Forum Guide to Alternative Measures of Socioeconomic Status in Education Data Systems*?

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- A. 3
- B. 5
- C. 6
- D. 8



What 2012 guide introduces us to this Cycle of Data Use: Seek Information → Gather → Analyze → Act → Evaluate?

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- A. Data for Researchers
- B. Taking Action with Education Data
- C. Data Ethics
- D. Garbage In/Garbage Out

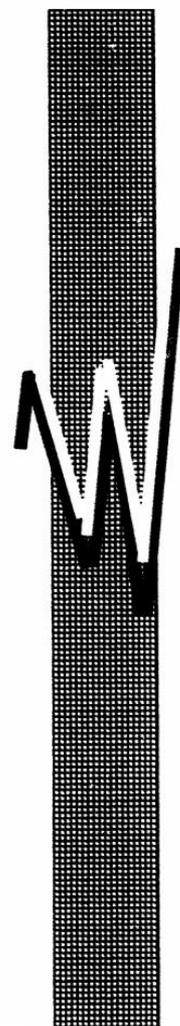
# Forum Guide to Taking Action with Education Data



The first Forum guide was published in 1990. What was the title?

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- A. A Guide to Creating a Forum
- B. A Guide to Improving the National Education Data System
- C. Understanding Education Data: A Congressman's Guide
- D. Requirements of an Electronic Student Database



***A GUIDE TO***  
**IMPROVING THE**  
**NATIONAL EDUCATION**  
**DATA SYSTEM**

*Executive Summary*

October 1990

*Edited by:*  
Pascal D. Forgione, Jr.  
Connecticut Department of Education  
and  
Martin E. Orland  
National Center for Education Statistics

What is the name of the newsletter that contains updates of the recent activities of the Forum?

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- A. State of the Forum
- B. The Forum Times
- C. Forum Minutes
- D. The Forum Voice

# The Forum

# Voice



National  
Forum  
on Education  
Statistics

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Winter 2017Volume 19

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### EDITORIAL BOARD

[Ray Martin](#), Connecticut Department of Education  
[Marilyn King](#), Bozeman School District #7 (MT)  
[Steve Smith](#), Cambridge Public Schools (MA)  
[Georgia Hughes-Webb](#), West Virginia Department of Education

### LETTER FROM THE CHAIR

Dear Forum Members:

It is my pleasure to welcome you to the Forum for what promises to be another productive and engaging year.

The success of the Forum is based on the hard work, collaboration, and expertise you contribute as Forum members. This year, we welcomed many returning members as well as 28 new members who share the Forum's commitment to developing education resources that support local, state, and national efforts to improve K-12 education in the United States. I am eager to engage our new members in the work of the Forum, and I encourage established members to reach out and welcome them whenever you have the opportunity.

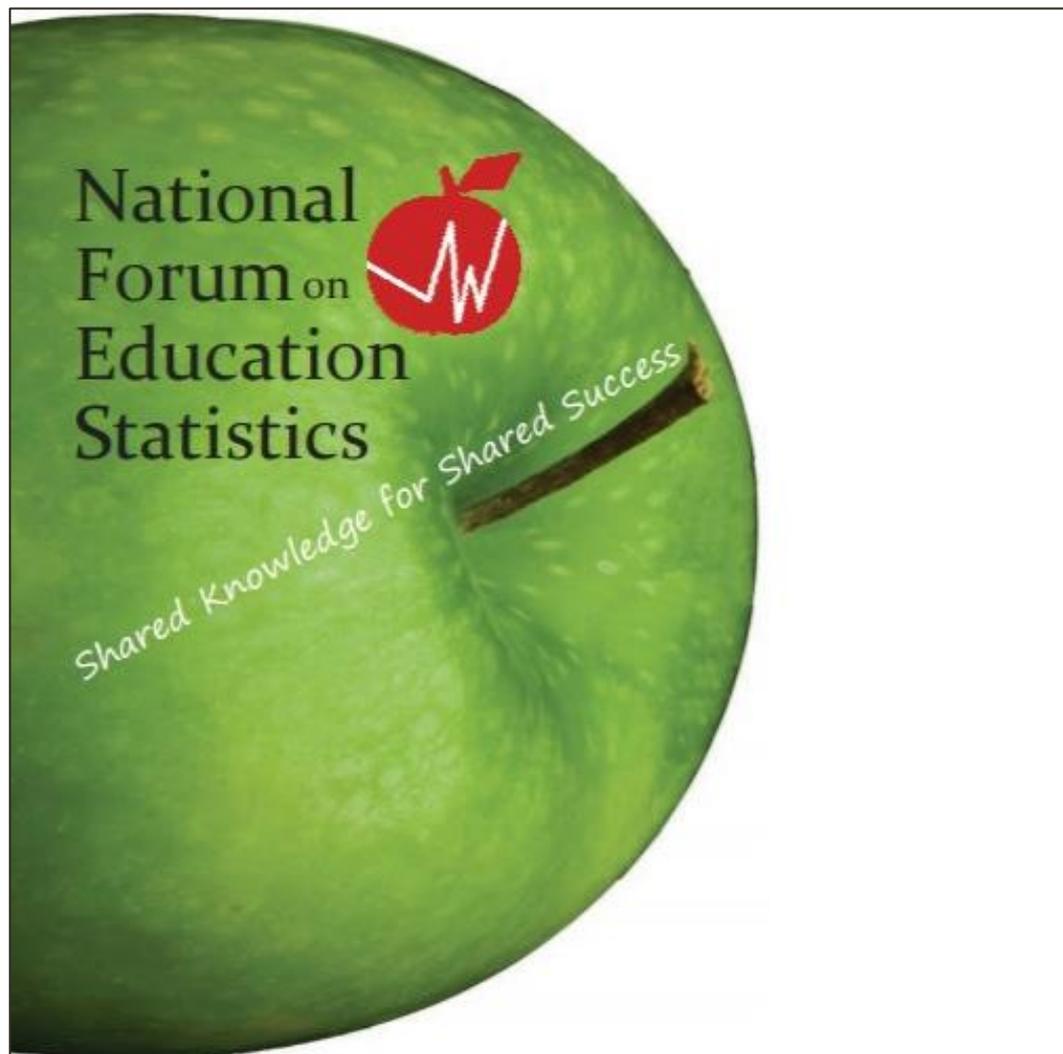
I would like to congratulate you all on the Forum's recent accomplishments. In the past year, the Forum has responded to the need for new resources on a wide variety of topics, including virtual education, data privacy, course codes, disaggregating racial/ethnic data, and data visualization. We've also expanded our outreach by developing two videos: an overview of the Forum and an introduction to the School Courses for the Exchange of Data (SCED).

Our members help ensure that Forum resources are widely available to staff in federal, state, and local education agencies by sharing resources with colleagues, delivering presentations at meetings, and traveling to conferences. We recently learned that in Virginia, Susan Williams and Rachel Johnson include information on Forum publications

What brochure was designed to help raise awareness of the National Forum on Education Statistics and its many free resources?

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- A. A Partnership to Count On
- B. Shared Knowledge for Shared Success
- C. Resourceful Resources
- D. Resources for Data Usage



What guides, published as a four-part series, help states navigate through the implementation, conversation, and use of an LDS?

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- A. Traveling through Time
- B. Longitudinal Data Systems
- C. Time is on Our Side
- D. Layers of Data on Students

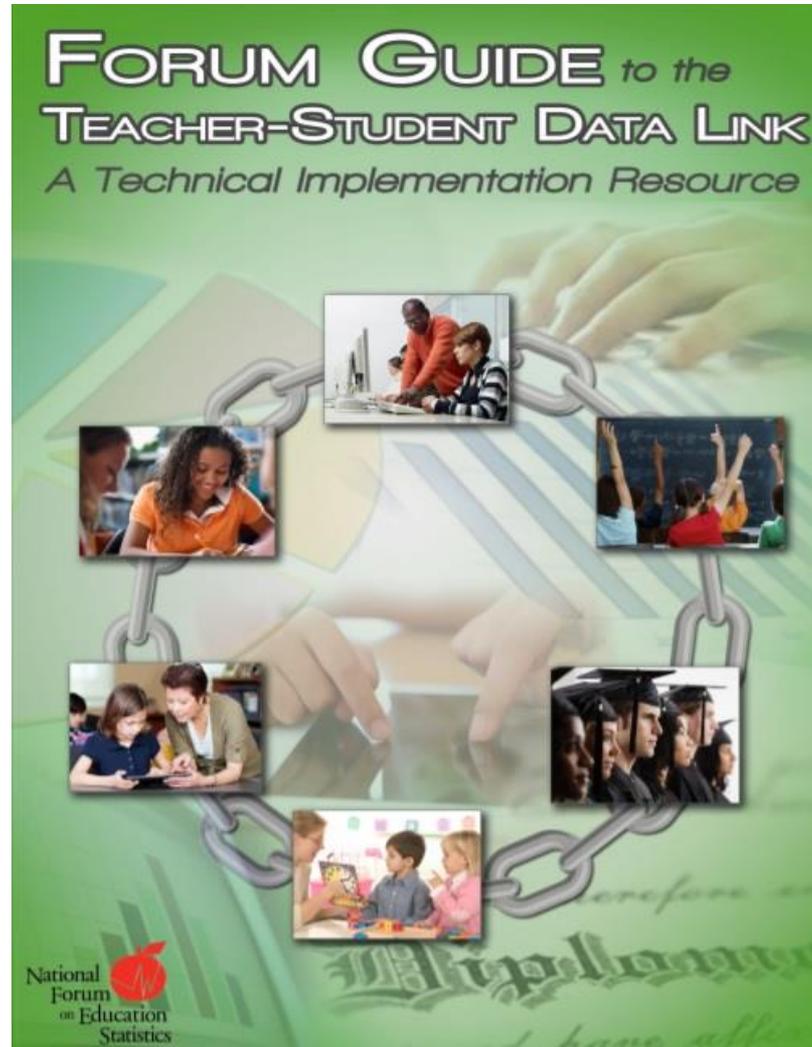


According to *The Forum Guide to the Teacher-Student Data Link*, who is “accountable for a student’s or group of students’ learning outcomes”?

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- A. Head Teacher
- B. Homeroom Teacher
- C. Teacher of Record
- D. Instructor of Record

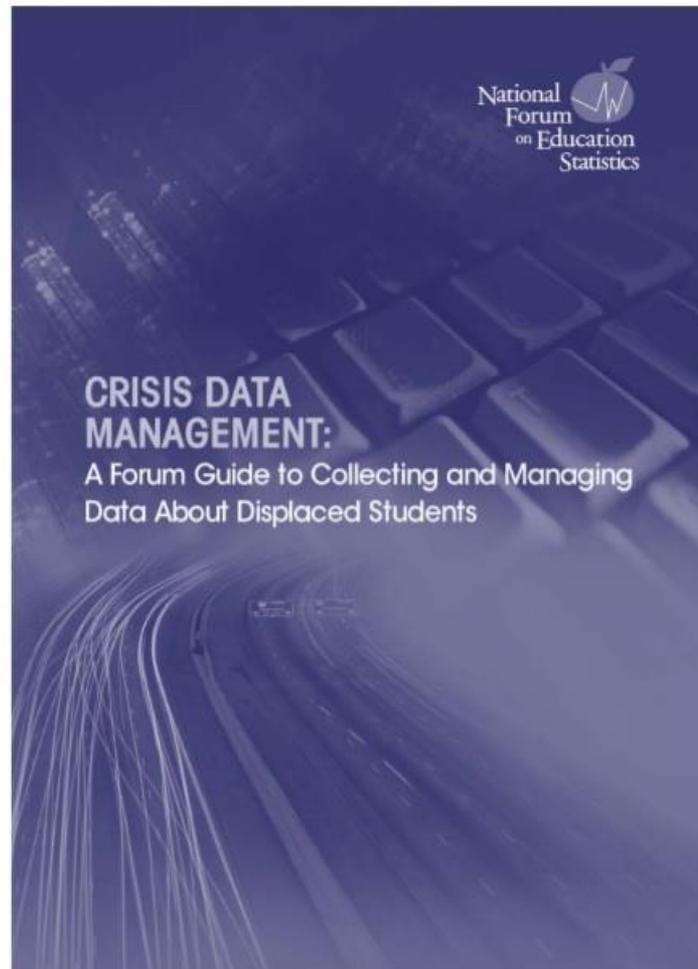
# Teacher of Record



Which Forum guide would be the best resource for guidance related to collecting data on students impacted by a natural disaster?

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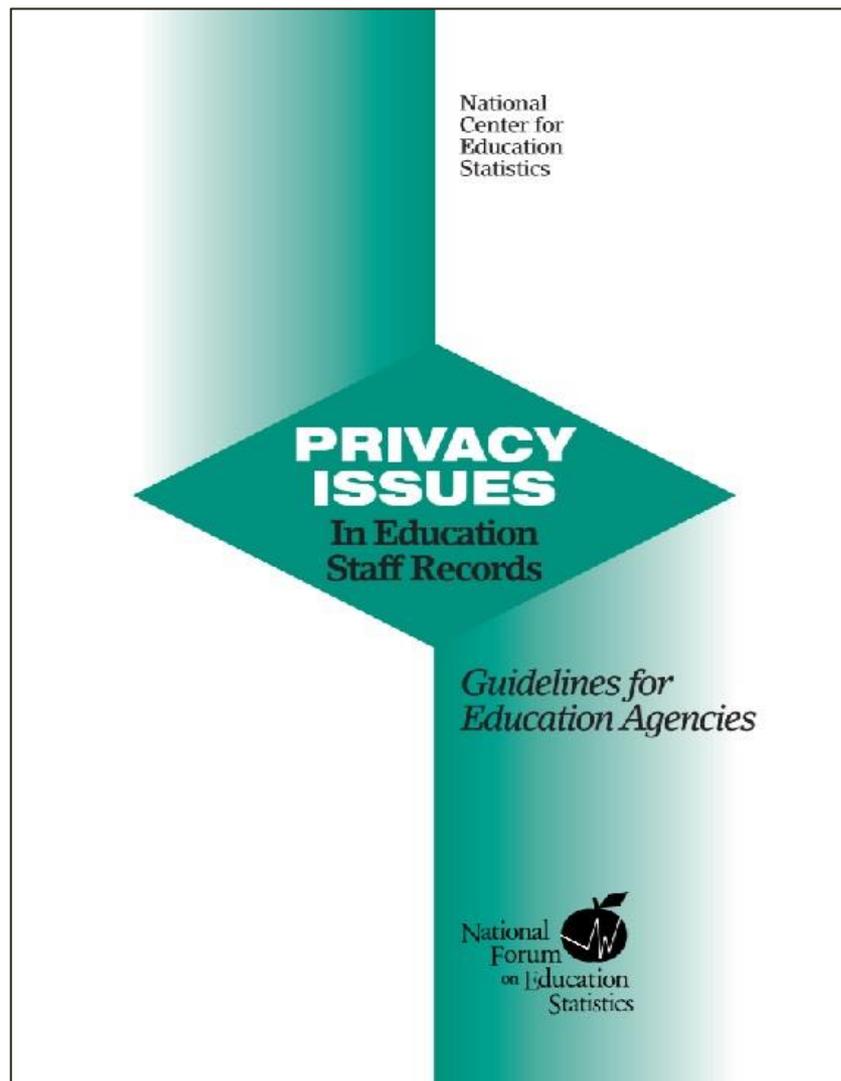
- A. Crisis Data Management: A Forum Guide to Collecting and Managing Data about Displaced Students
- B. Lessons from Hurricane Katrina
- C. The Guide to Emergency Management
- D. Safety in Numbers



Three Forum guides were written to help promote understanding of FERPA. Which Forum guide *does not*?

---

- A. Forum Guide to Protecting the Privacy of Student Information
- B. Privacy Issues in Education Staff Records
- C. Forum Guide to Education Data Privacy
- D. Forum Guide to the Privacy of Student Information



Which Forum guide was designed for use by school, district, and state staff to improve collections and use of disciplinary incident data?

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- A. Guide to Safe and Gun-free Schools
- B. Guide to School Climate Data
- C. Guide to Crime, Violence, and Discipline Incident Data
- D. Safety in Numbers

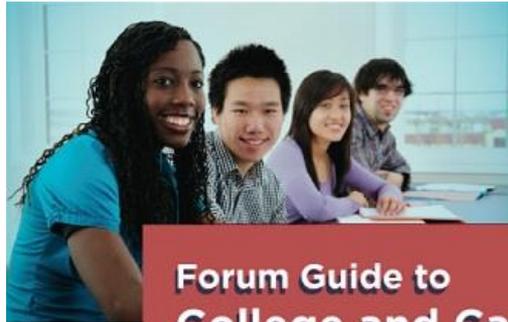
## Forum Guide to Crime, Violence, and Discipline Incident Data



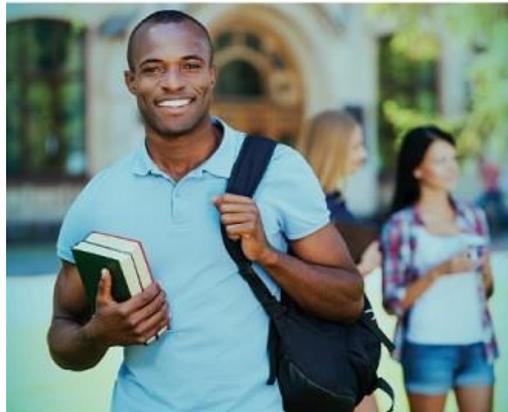
Which guide defines the following:  
ACT, career cluster, career  
pathway, CTE, Perkins Act, and  
P-20W Data Governance?

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- A. Vocational Education Indicators
- B. College and Career Ready Data
- C. The Guide to Implementing P-20W Data Systems
- D. The Guide to Reading ASVAB Scores



## Forum Guide to College and Career Ready Data



- ✓ Individual Learning Plan
- ✓ Program of Study
- ✓ Advanced Placement
- ✓ Dual Enrollment
- ✓ Internship
- ✓ College Entrance Exam
- ✓ Industry Certification
- ✓ College Applications
- ✓ Financial Aid Applications
- ✓ Employment Applications

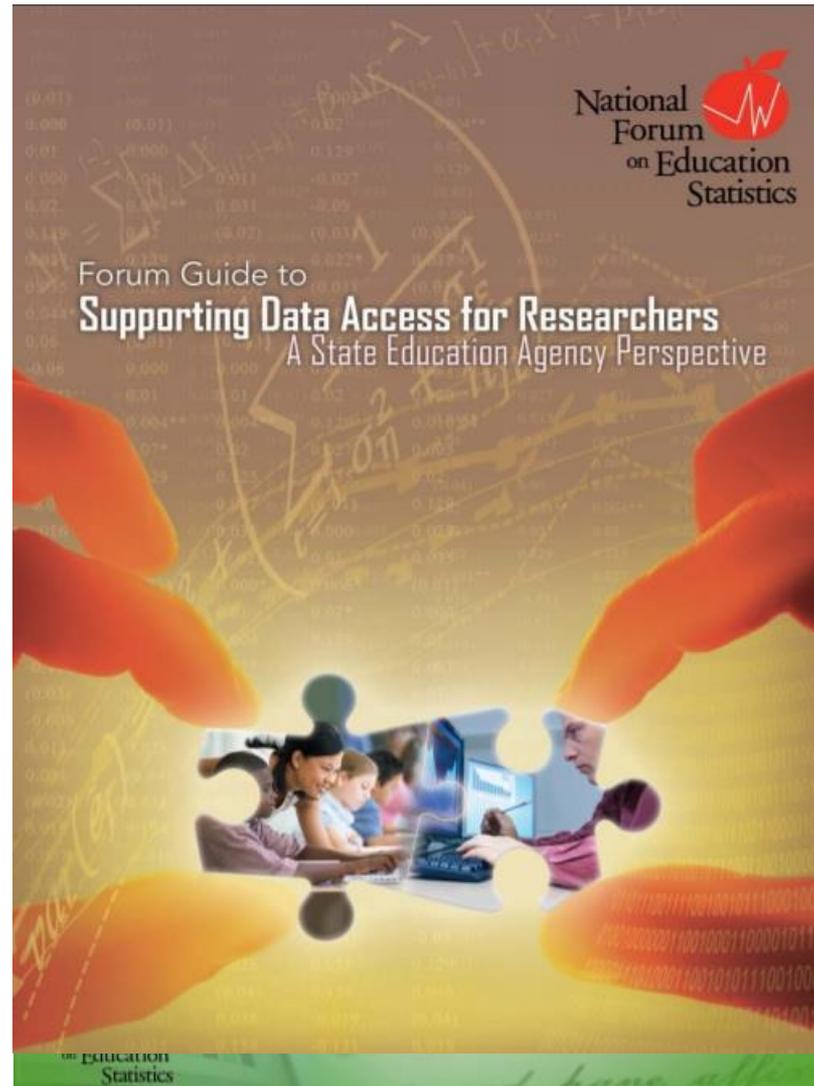


How many Core Practices for Effectively Managing Data Requests are described in *The Forum Guide to Supporting Data Access for Researchers*?

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- A. 3
- B. 4
- C. 5
- D. 6

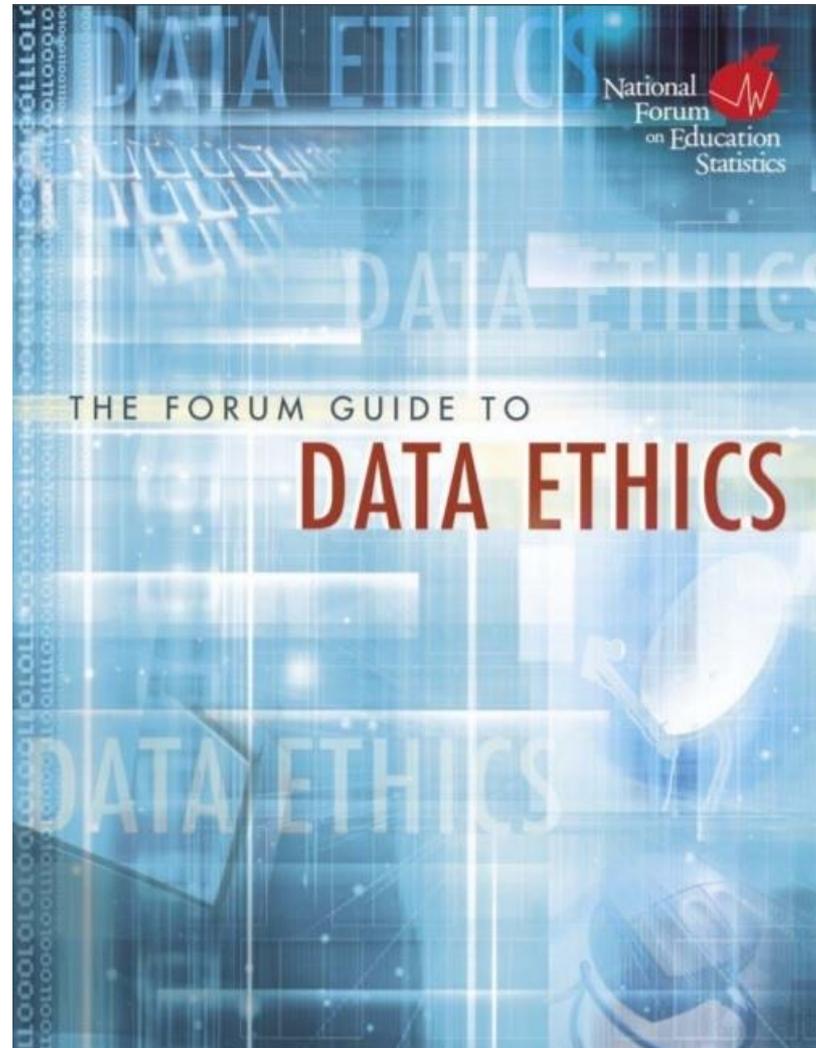
# 4 Core Practices



Which Forum guide that addresses accessing, presenting, and using student and school data in a responsible manner also has a corresponding online course?

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- A. Guide to Education Data Privacy
- B. Guide to Data Access for Researchers
- C. Guide to Data Ethics
- D. Forum Curriculum for Improving Education Data



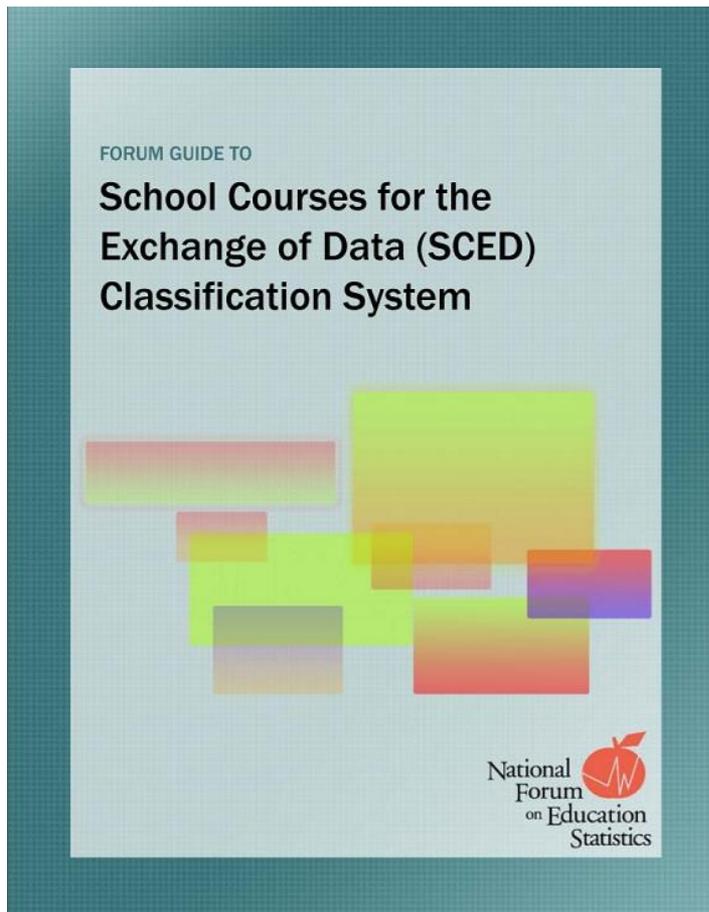
# True or False?

SCED is a 5-digit number

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- A. True
- B. False

# False

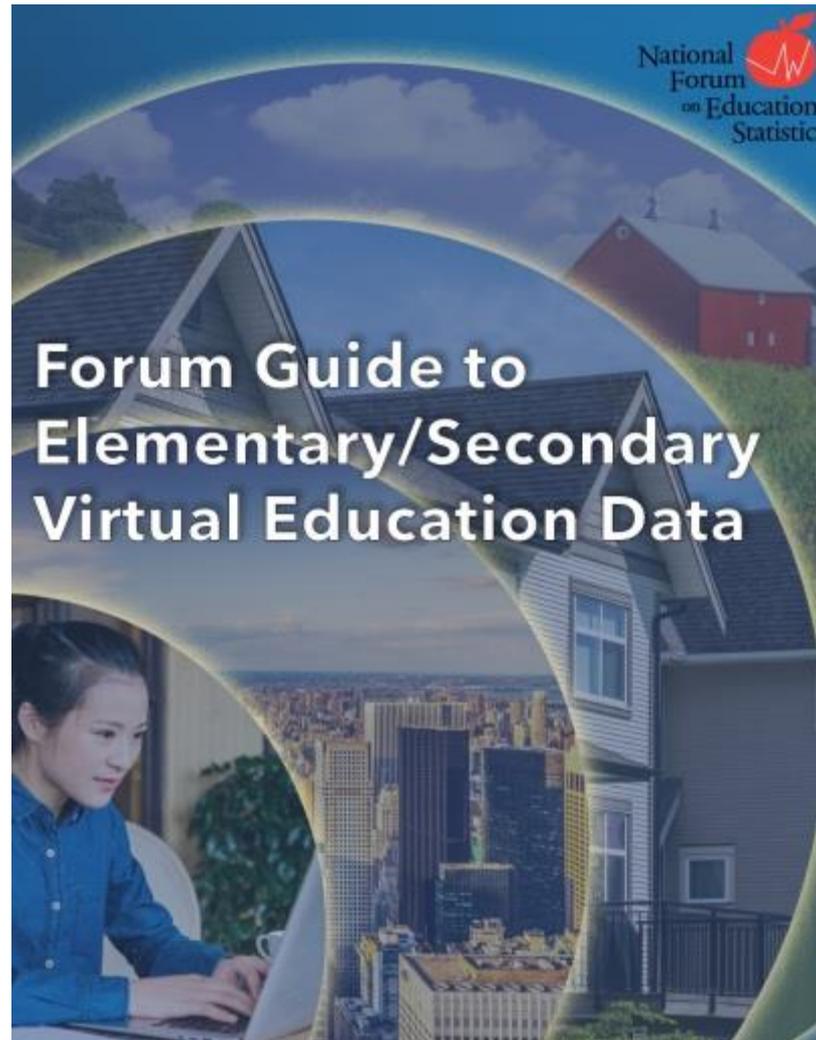


- 12-character SCED Identifier
  - 2 Course Subject Area
  - 3 Course Number
  - 1 SCED Course Level
  - 4 Available Credit/  
Grade Span
  - 2 Sequence
- Optional Attributes

Which Forum guide will help SEAs and LEAs determine how to collect, manage, and protect data for students that are educated outside of the typical “brick and mortar” setting?

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- A. Correspondence Courses are for Everyone
- B. Accounting for Every Student
- C. Elementary/Secondary Virtual Education Data
- D. Virtually Possible: Finding Solutions in Data



In what Forum guide could a school find best practices for reporting minority students who drop out by country of origin?

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- A. Forum Guide to Education Indicators
- B. Managing an Identity Crisis
- C. Standards for Education Data Collecting and Reporting
- D. Forum Guide to Collecting and Using Disaggregated Data on Racial/ Ethnic Subgroups



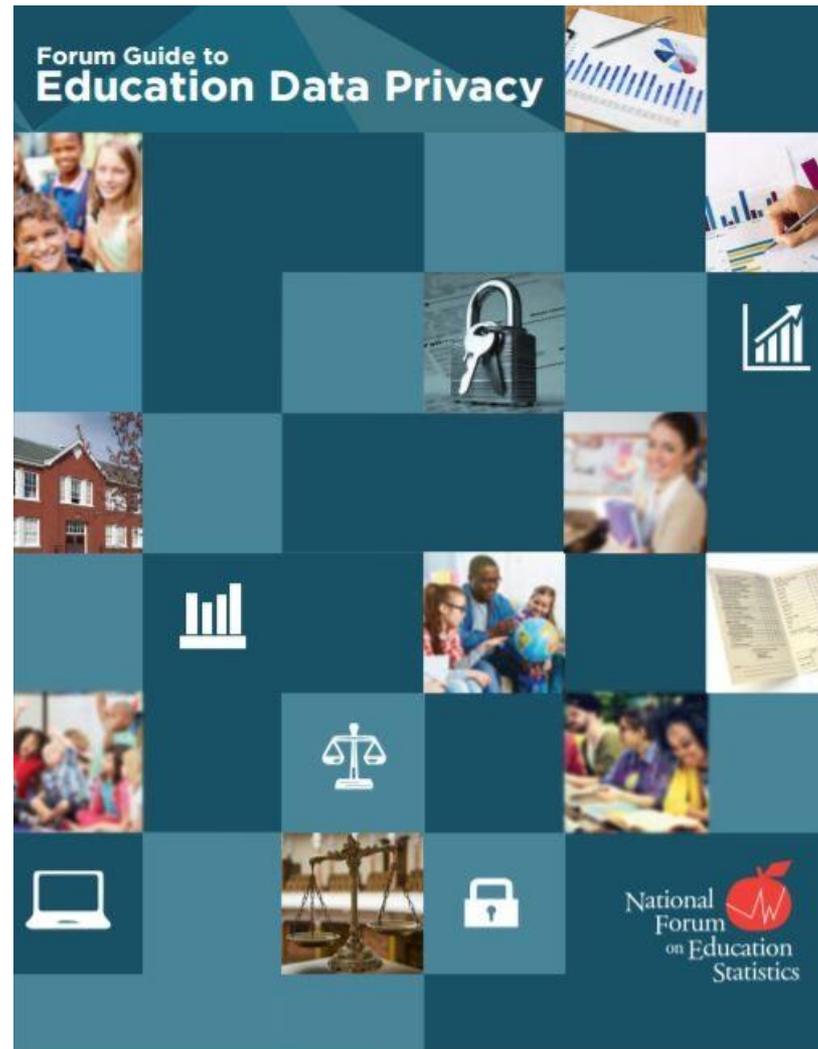
Forum Guide to  
Collecting and Using Disaggregated Data  
on Racial/Ethnic Subgroups



# Which Forum guide contains information about COPPA?

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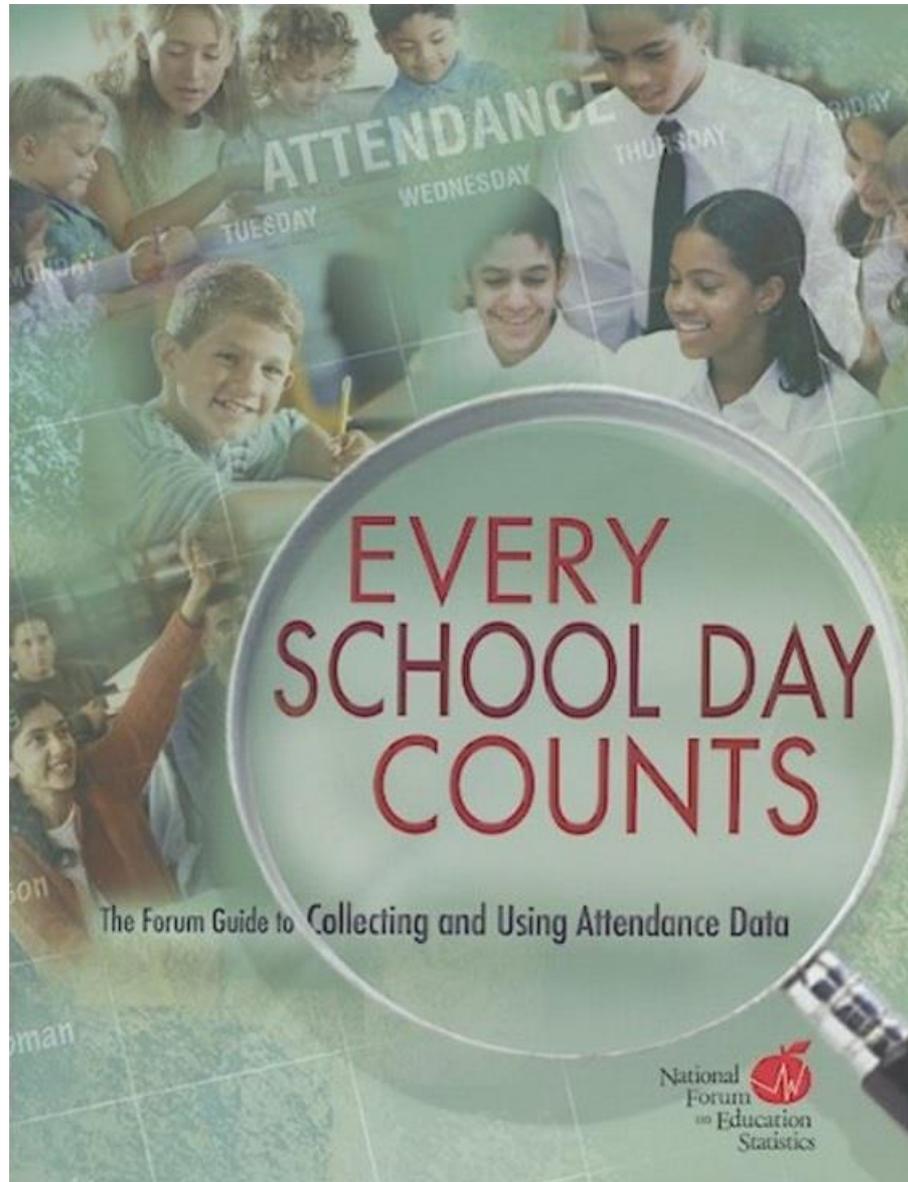
- A. Forum Guide to Core Finance Data Elements
- B. Forum Guide to Taking Action with Education Data
- C. Forum Guide to Education Data Privacy
- D. Forum Guide to LEA Reporting



Which Forum guide offers best practice suggestions on collecting and using student attendance data to improve performance?

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- A. No Child Left Out
- B. Every School Day Counts
- C. Keeping the Door Open
- D. Best Practice Guide for Improving Attendance

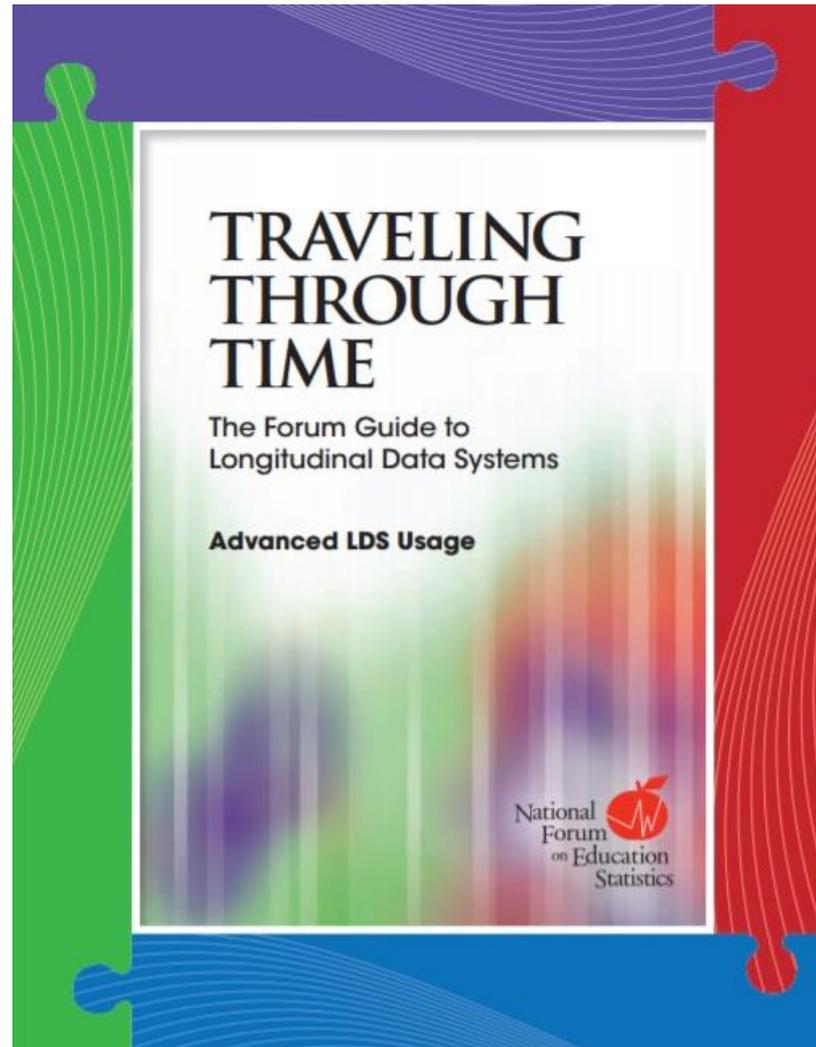


Which of the following is *not* a book in the *Forum Guide to Longitudinal Data Systems* series?

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- A. Effectively Managing LDS Data
- B. Planning and Developing an LDS
- C. What is an LDS?
- D. Effectively Reporting LDS Data

# Effectively Reporting LDS Data



Thank you for playing  
**1 vs 100**  
*The Forum Edition!*

# Using Forum Products Montana

Marilyn King  
*Bozeman School District #7 (MT)*

# Getting the Word Out

How can our own school district and districts across the state learn more about SCED and Data Privacy?

- Locally
  - Presentation to Instructional Cabinet
  - Use of in-district professional development (Staff Meetings, Teacher Tuesdays)
- State
  - Joint LEA-SEA presentation at state school administrator conference to present information on SCED and Data Privacy
- The Forum provides presentations and other resources in an Outreach Tool Kit
  - List of publications
  - Forum Publications Presentation

# Presentations



## School Courses for the Exchange of Data (SCED)

Brett Carter, *MT Office of Public Instruction*  
Marilyn King, *Bozeman School District #7*



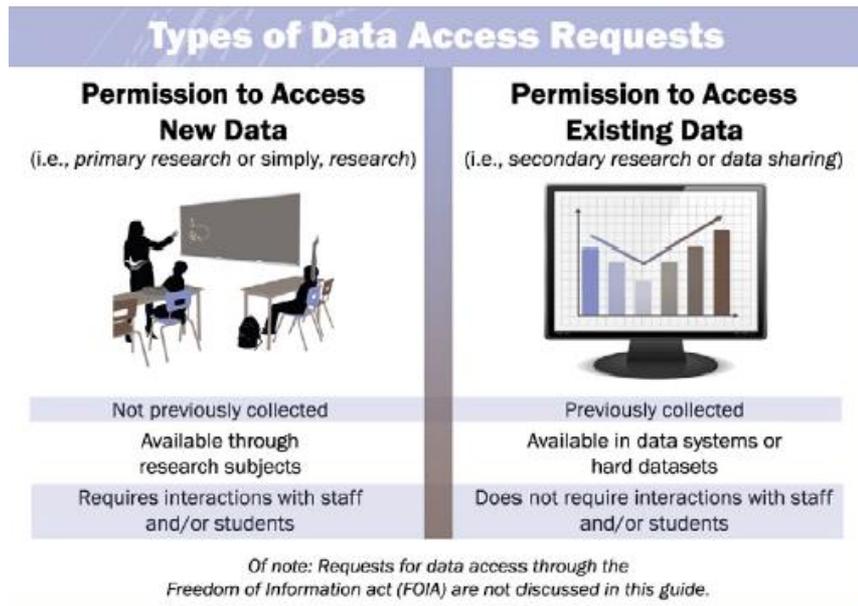
## Data Privacy: LEA Policies and Procedures A Guide to Education Data Privacy for Districts

Marilyn King, *Bozeman School District #7*  
Brett Carter, *MT Office of Public Instruction*

# Creation of a Professional Network

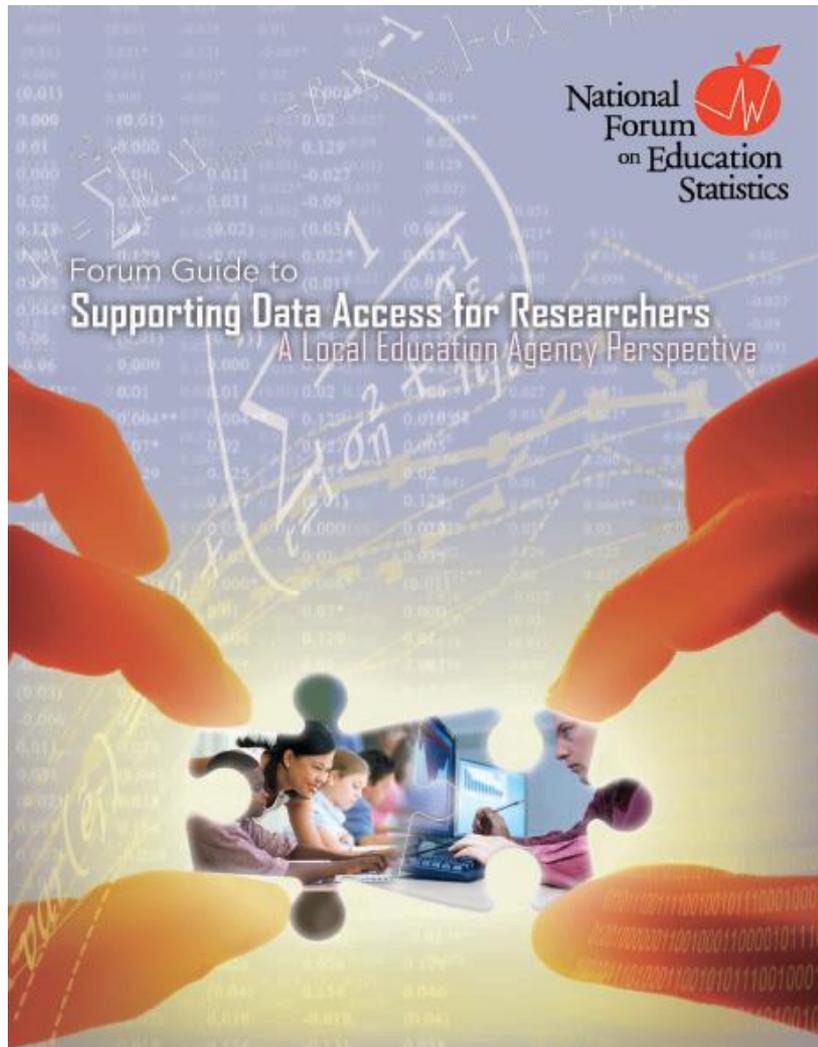
- Forum – list of Members
- Data usage in LEAs
  - Issues related to use of Educational Apps and Extensions (including Terms of Service, Student Privacy)
  - Handling of research requests
  - Website design
  - Communication to parents/community related to collection and use of data, privacy
  - Data collections

# Our Situation: Handling Research Requests



- No de-centralized process;  
no centralized process
- Taking time and human  
resources with no benefit to  
the district
- Concerns about  
student privacy
- Unsure how to communicate  
to researchers

# Forum Solution



# What We Learned: Develop a Research Agenda

- We have developed a research agenda based on our Long Range Strategic Plan, which encourages research in the following areas:
  - Technology
    - Student engagement
    - Student achievement
    - Impact of different classroom activities on student growth
    - As strategy for dropout prevention
  - Professional Development, Supervision, and Evaluation
    - Sustainable change/building teacher capacity through embedded PD
    - Teacher leadership models
  - Dropout Prevention
    - Effectiveness of intervention strategies
    - Early Warning Systems

# What We Learned: Weigh Research Proposals

- Does the research align with the LEA's research agenda?
- Has the research been approved by the institutional review board of the researcher's organization?
- What data will the research collect/access and for what purpose?
- Are the desired data appropriate to address the research question(s)?
- Which Family Education Rights and Privacy Act (FERPA), Protection of Pupil Rights Amendment (PPRA), and National School Lunch Act (NSLA) considerations apply to the data that have been requested by the researcher?
- Which data need to be masked, de-identified, or otherwise altered to protect individual privacy?
- What is the proposed project's level of disruption to the learner and the learning environment?

## What We Learned:

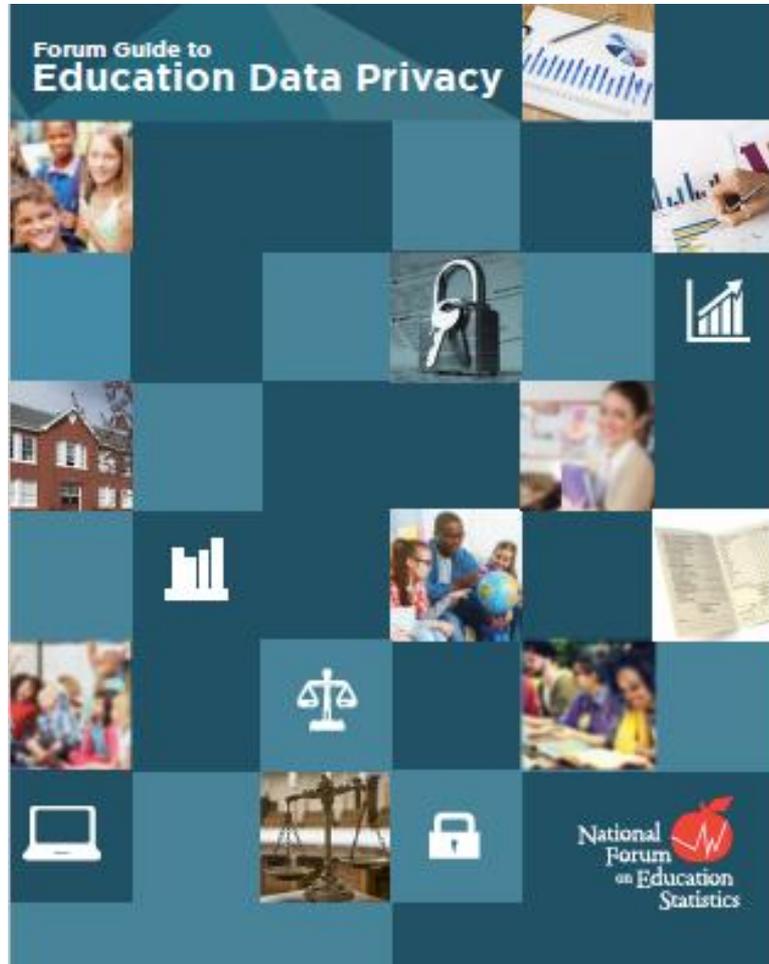
### Create a Reference Landing Page

- Include training materials required of researchers
- Create effective request forms for researchers

# Our Situation: Student Privacy

- Staff didn't understand issues related to student privacy
- Principals didn't know where to begin to help support their staff
- Lacked a communication method to our community about data collections and data usage
- Lacked a data governance structure with set roles and responsibilities

# Forum Solution



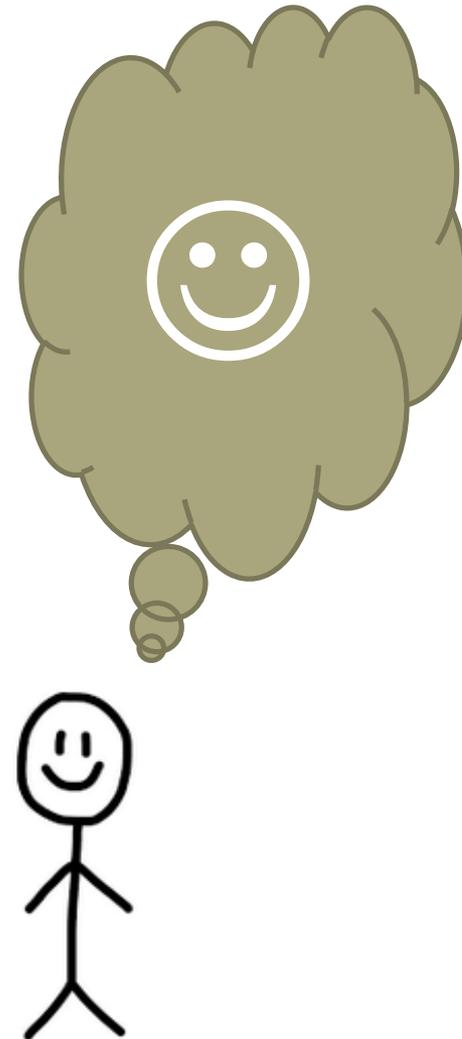
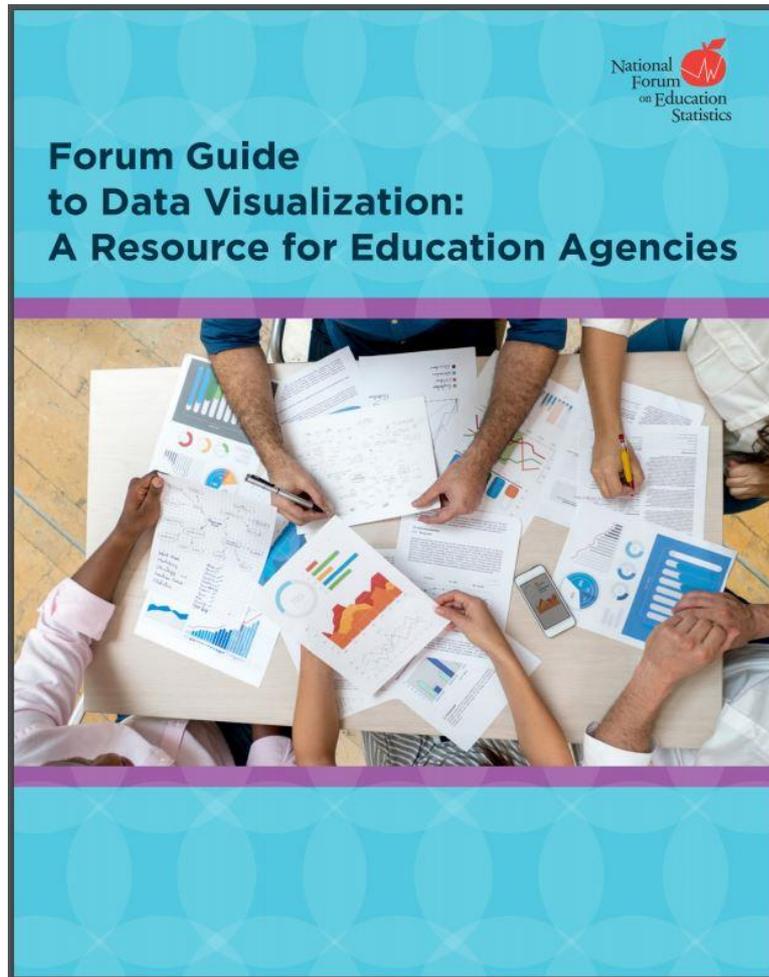
# What We Learned: LEA Data Governance Structures

- Primer for Staff
  - Overview of Education Data Privacy
- DATGOCOM – Data Governance Committee
  - Definitions
  - Roles and responsibilities
  - Data inventory
  - Protection against technical and human threats (including physical security and access control)
  - Guidance related to case studies
    - Presentations that include student data
    - Posting PII in a classroom or school
    - FERPA training in all schools; everyone knows what PII is
    - Sharing student data with volunteers, substitute teachers, community based organizations
    - We now have Responsible Use Agreements for different categories of personnel
    - We now utilize a interagency data governance agreement

# Our Situation: Communicating Data to Stakeholders

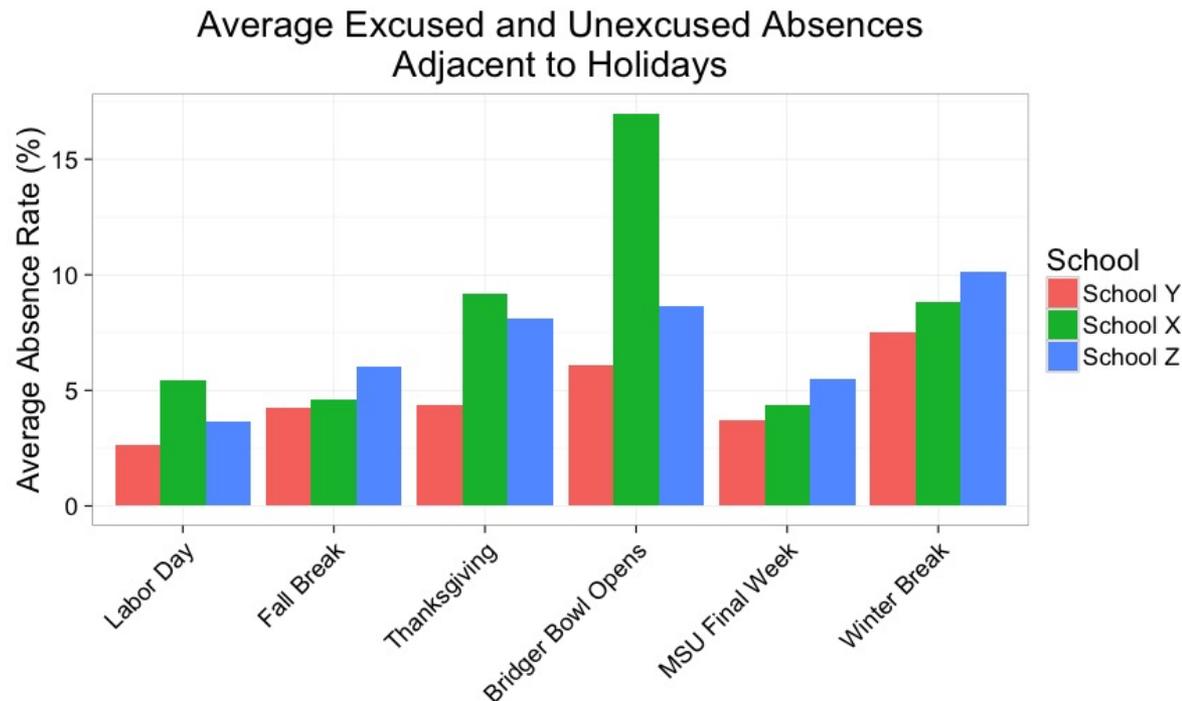
- Trustees and community asked for education about our District's College and Career framework
- We wanted our data to “tell the story”
- We needed to know the best way to do this

# Forum Solution

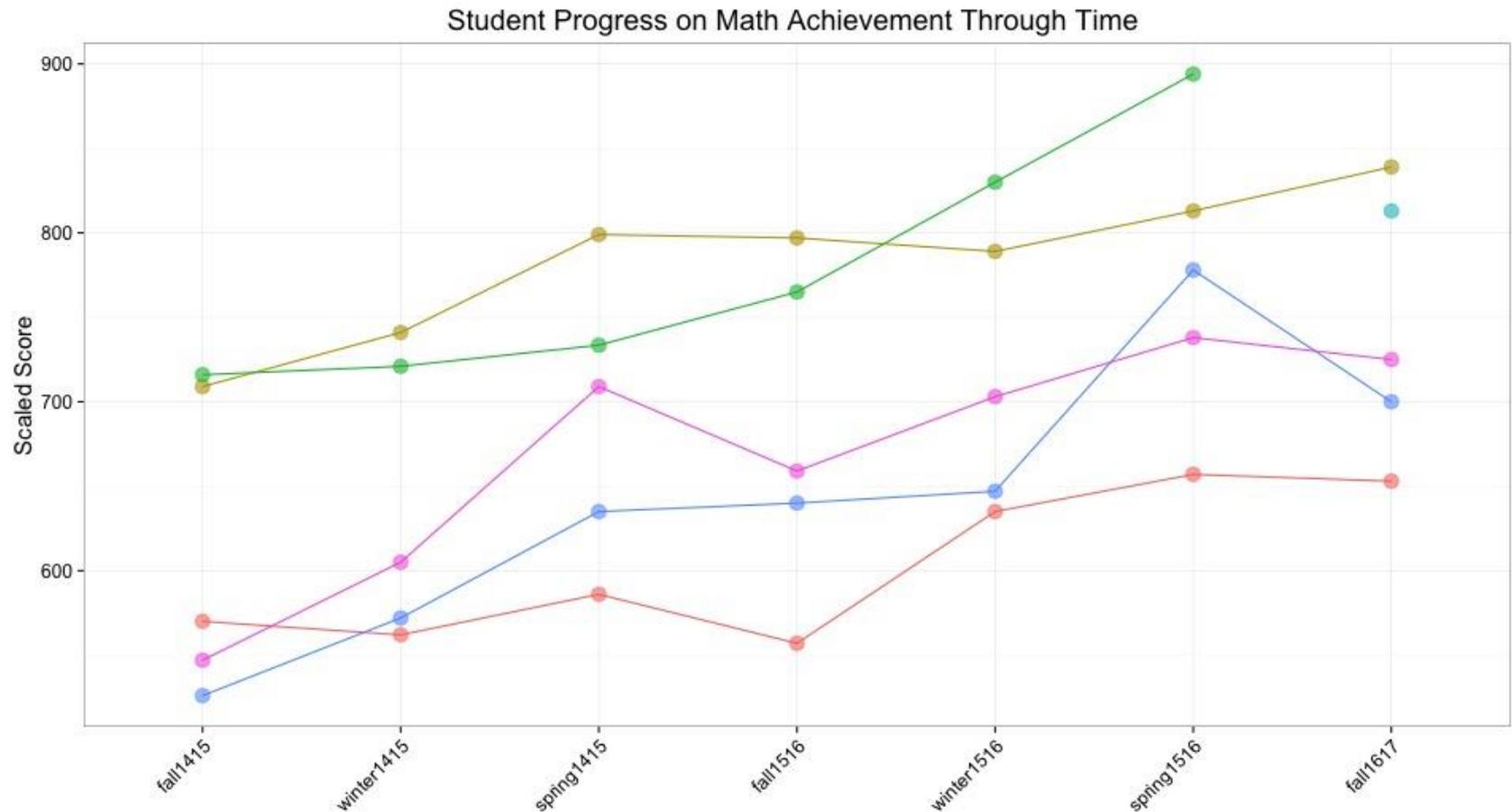


# What We Learned: How to Tell a Story Using Data

Data are shared with administrators, school board members, and the public in focused presentations consisting of one to three main points and consisting primarily of graphs.



# What We Learned: How to Tell a Story Using Data



# Using Forum Products Virginia

Susan Williams  
*Virginia Department of Education*

**VIRGINIA  
IS FOR  
LOVE<sup>®</sup>ERS**  
*of* **Forum Guides**



***Let me count  
the ways...***

# Day-to-Day Operations

National  
Forum  
on Education  
Statistics

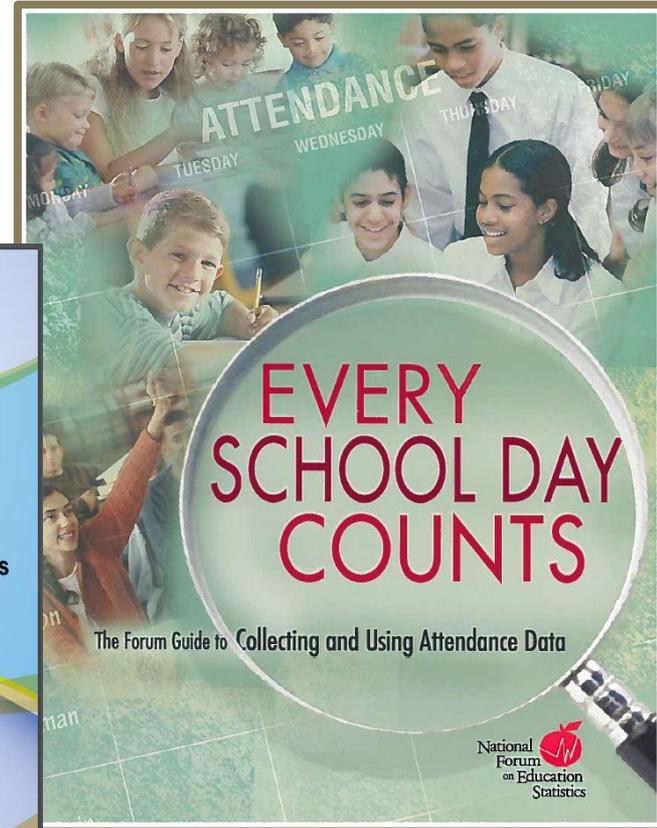
**Forum Guide  
to Data Visualization:  
A Resource for Education Agencies**



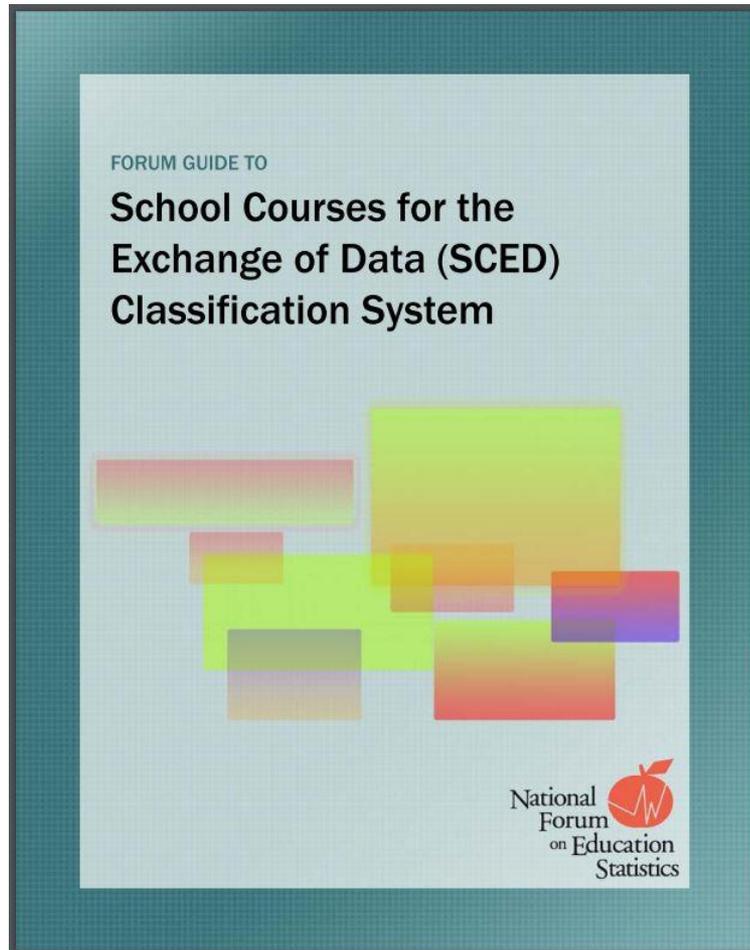
National  
Forum  
on Education  
Statistics

**Forum Guide to Ensuring Equal  
Access to Education Websites**

Introduction to Electronic Information Accessibility Standards

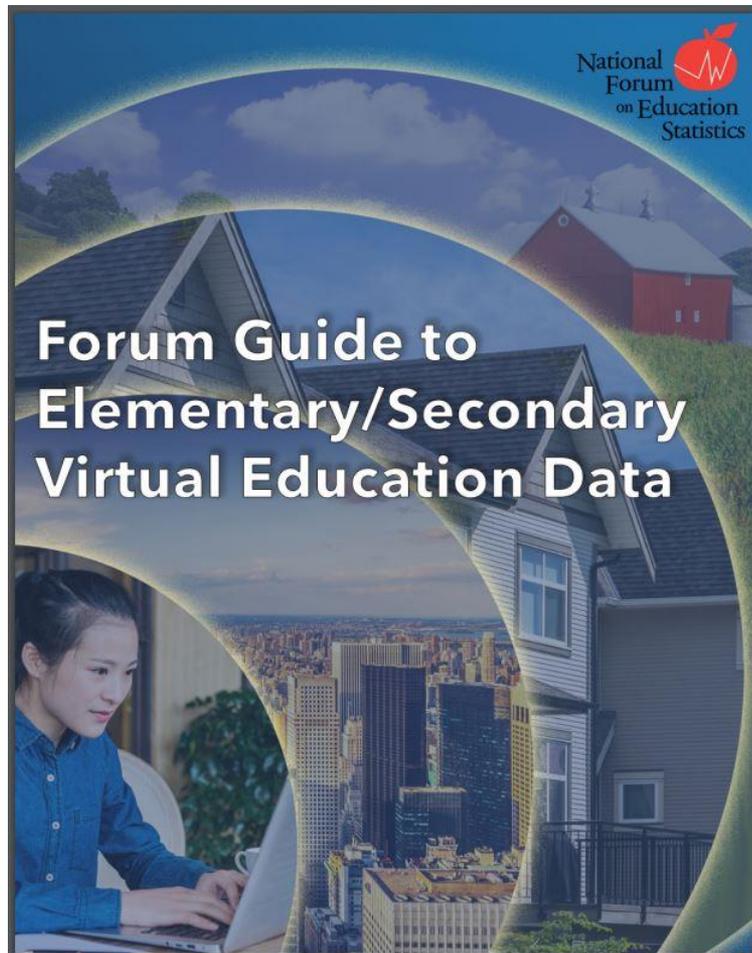


# Models for New Projects



- Virginia's legacy state course code system based on teacher endorsements was insufficient to collect student-level transcript-like course enrollment data
- Many options considered
- National model chosen

# Models for New Projects



- Known, unknown, and hybrid programs exist in schools
- Space is growing and changing rapidly
- MOPs
- Guide brought perspective to an overwhelming situation

# Tuesday Telegram

Office of Educational Information Management June 6, 2017

**THE TUESDAY TELEGRAM**

Questions and/or comments, please e-mail: [Lisa.Comfort@doe.virginia.gov](mailto:Lisa.Comfort@doe.virginia.gov)

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**SUPERINTENDENTS MEMOS ON DATA COLLECTIONS/SURVEYS**

Use this link to review the most recent Superintendents Memos:  
<http://www.doe.virginia.gov/administrators/index.shtml>

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**IMPORTANT ANNOUNCEMENTS**

**EIM 2017 Timeline**

- June 15: EOY MSC Window Opens
- June 21: SOL Substitute Test Data Collection Webinar
- June 29: SOL Substitute Test Data Collection Webinar
- July 14: EOY SRC Successful Submission Required
- July 31: EOY SRC two-week extension expires – all verification reports due
- August 1-3: 2017 NCES STATS-DC Data Conference
- August 31: EOY MSC Successful Submission Required
- August 31: Summer SRC verification reports due
- September 29: EOY MSC & SEDF Verifications Due

**2016-2017 SOL Substitute Test Data Collection Webinar**

Please join us for a training on the new application for submitting SOL substitute tests. You may choose to attend one of the following sessions:

- Wednesday, June 21st, 2017 at 1:00 PM
- Thursday, June 29th, 2017 at 9:00 AM

**Webinar Login Information**

- Web Conference URL: <https://vdoe.adobeconnect.com/rkmedia7dw7v/>
- Dial-in Phone Number: 1-800-832-0736
- MeetingOne Conference Room Number: 6432715
- Once Joined to the audio, identify yourself: Press \*65\*2859# on your phone

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**TIP OF THE WEEK**

In our division, a student who has 6 or more unexcused absences will have a truancy conference. The outcome of these conferences can sometimes lead to changing unexcused absences to excused absences. In this instance, we are receiving a fatal error because the unexcused absences no longer meet the 6 or more criteria. How are we to report data for the records that fall into this scenario?

In order to have any level of data integrity, VDOE had to create a fatal error if the number of unexcused absences was below 6. Several school divisions hold these conferences when the student has only had 4 or 5 unexcused absences. This makes their numbers much higher than the divisions who held the conferences at 6 unexcused absences. When we study data across the state, it was determined that the data was unreliable since not all divisions were using the same standard for these conferences.

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**NCES News**

**2017 NCES STATS-DC Data Conference - August 1 - 3, 2017 - The Mayflower Hotel Washington, DC**

The 2017 National Center for Education Statistics Data Conference is right around the corner. Please see the online brochure for more details: <https://nces.ed.gov/whatsnew/conferences/PDF/2017STATS-DCBrochure.pdf>

If you are registered and would like to meet up for dinner on Tuesday, August 1<sup>st</sup>, please send an email to [ResultsHelp@doe.virginia.gov](mailto:ResultsHelp@doe.virginia.gov) and we will send you the details.

- Weekly newsletter from EIM (VDOE)
- CRDC information
- Announce the Summer Data Conference
- Ask questions/polls for SCED workgroup
- Announce release of new Forum Guides

# Tuesday Telegram on Dec 6, 2016

Office of Educational Information Management
December 6, 2016

## THE TUESDAY TELEGRAM

Questions and/or comments, please e-mail: [Irma.Thomas@doe.virginia.gov](mailto:Irma.Thomas@doe.virginia.gov)

### SUPERINTENDENTS MEMOS ON DATA COLLECTIONS/SURVEYS

Use this link to review the most recent Superintendents Memos:  
<http://www.doe.virginia.gov/administrators/index.shtml>

### IMPORTANT ANNOUNCEMENTS

EIM 2016 Timeline

- December 9: Fall MSC successful submission due
- December 9: Signed Final Dropout verification reports are due.
- January 31, 2017: Fall MSC Verification reports are due

If you have questions, please contact your regional contact or email [ResultsHelp@doe.virginia.gov](mailto:ResultsHelp@doe.virginia.gov).

### TIP OF THE WEEK

**What is a cohort?**  
A cohort is a group of students who enter the ninth grade for the first time with the expectation of graduating within four years. The Virginia Department of Education (VDOE) Educational Information Management System (EIMS) tracks the students in a cohort from year-to-year while in high school. Students who transfer to a new high school are subtracted from the cohort of their original schools and added to the cohort of their receiving schools. Students who transfer out of the commonwealth's public school system to pursue diplomas elsewhere also are also subtracted from the cohort.

An "on-time" graduation rate is the percentage of students in a cohort who earn a diploma within four years of entering the ninth grade. In Virginia, this rate is known as *the Virginia On-Time Graduation Rate*. The *Cohort Dropout Rate*, the percentage of students in the cohort who drop out during the same period, is also calculated at the same time as the Virginia On-Time Graduation Rate.

### STUDENT RECORD COLLECTION (SRC)

**Reminder - Final Dropout Report Verification is Due this Week**  
The Final Dropout Report is available in the Fall SRC application of SSWS. The signed verification for the Final Dropout Report is due Friday, December 9, 2016. Please be aware that this data will be publicly released.

### MASTER SCHEDULE DATA COLLECTION (MSC)

Subject: 2016 Fall Master Schedule Collection  
Due: Successful Submission Due December 9, 2016;  
Verification Reports Due January 31, 2017 (Superintendent's Memo #268-16)  
Required successful submission is due no later than December 9, 2016. Verification reports, signed by the division superintendent, must be submitted by January 31, 2017. Early submission is strongly encouraged.

## NCES NEWS

### NCES Forum Guide to Data Visualization

The NCES Forum recently released the new *Forum Guide to Data Visualization: A Resource for Education Agencies*. This new publication describes key data visualization principles and recommended practices that education agencies can implement to improve how education data are viewed, analyzed, communicated, and understood by a range of stakeholders.

The *Forum Guide to Data Visualization: A Resource for Education Agencies* is available at  
<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=NFES2017016>

## CIVIL RIGHTS DATA COLLECTION (CRDC)

### Prepare for the 2015-16 CRDC

The Office for Civil Rights anticipates the submission tool to open in late January/early February 2017. The system will remain open for 75 days after it opens. Notification will be sent when the exact opening date has been confirmed.

The Advance Website (AWS) is now closed. If contact information was not verified, please contact Partner Support Center (PSC) and provide Point of Contact (POC) information as soon as possible. Once the POC is verified, important information regarding the upcoming 2015-2016 CRDC will be sent.

Please access the CRDC Resource link to gather helpful information (i.e. Announcements and PSC Contact Information) for the 2015-16 CRDC: <https://crdc.grads360.org>.

For questions regarding CRDC, please access the CRDC Resource site and contact PSC. Otherwise, please email [ResultsHelp@doe.virginia.gov](mailto:ResultsHelp@doe.virginia.gov).

## CONTACT US FOR QUESTIONS OR ASSISTANCE WITH SRC, MSC, ERA, SSWS, FAMO, ACCREDITATION AND COHORT GRADUATION REPORTS

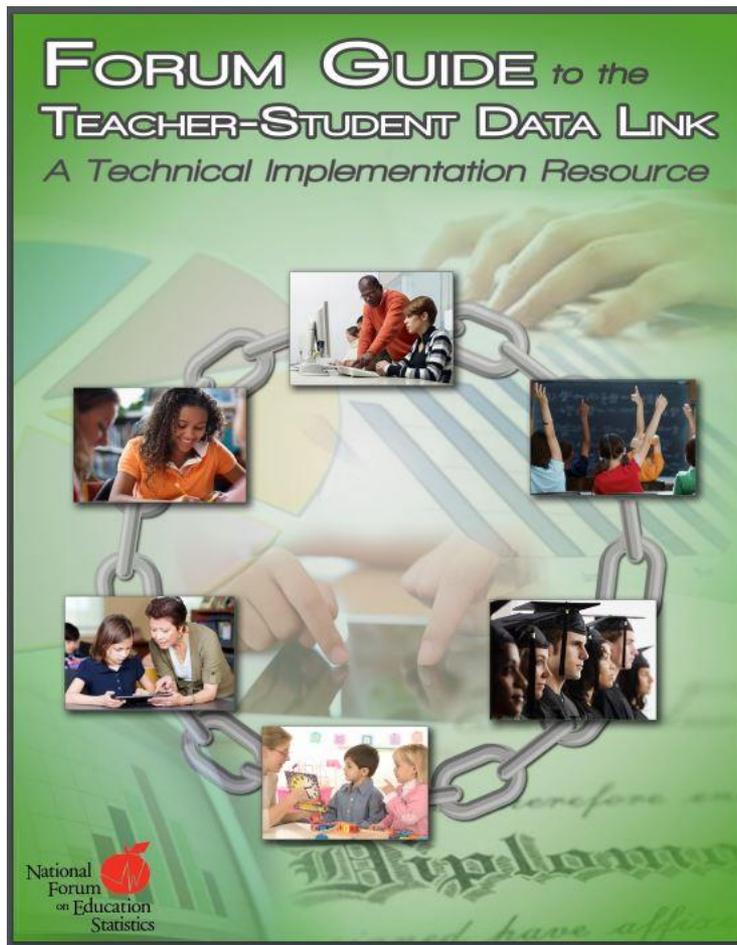
- Region I – Melanie Lore, (804) 225-3918, [Melanie.Lore@doe.virginia.gov](mailto:Melanie.Lore@doe.virginia.gov)
- Region II – Allison Young, (804) 225-3909, [Allison.Young@doe.virginia.gov](mailto:Allison.Young@doe.virginia.gov)
- Region III – Carol Wells Bazzichi, (804) 225-4847, [Carol.Wellsbazzichi@doe.virginia.gov](mailto:Carol.Wellsbazzichi@doe.virginia.gov)
- Region IV – Carol Wells Bazzichi, (804) 225-4847, [Carol.Wellsbazzichi@doe.virginia.gov](mailto:Carol.Wellsbazzichi@doe.virginia.gov)
- Region V – Allison Young, (804) 225-3909, [Allison.Young@doe.virginia.gov](mailto:Allison.Young@doe.virginia.gov)
- Region VI – Lisa Comfort, (804) 225-2827, [Lisa.Comfort@doe.virginia.gov](mailto:Lisa.Comfort@doe.virginia.gov)
- Region VII – Lisa Comfort, (804) 225-2827, [Lisa.Comfort@doe.virginia.gov](mailto:Lisa.Comfort@doe.virginia.gov)
- Region VIII – Melanie Lore, (804) 225-3918, [Melanie.Lore@doe.virginia.gov](mailto:Melanie.Lore@doe.virginia.gov)

You may also contact us via Results Help.

- Email: [ResultsHelp@doe.virginia.gov](mailto:ResultsHelp@doe.virginia.gov)
- Monitored: 7:30 AM to 4:30 PM

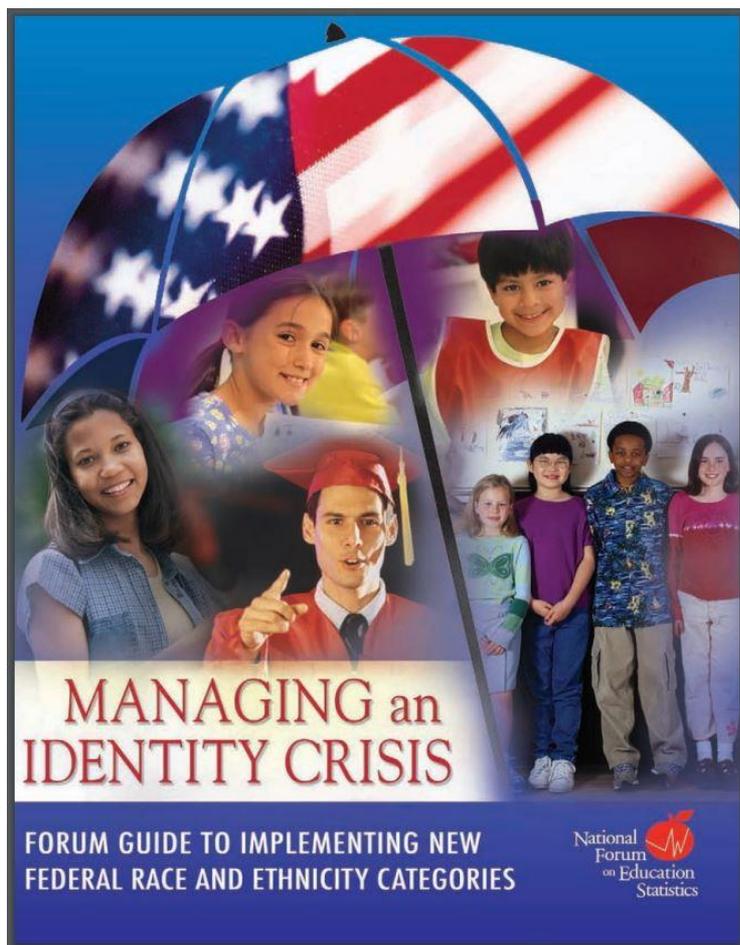
The Tuesday Telegram Distribution Contacts are downloaded weekly from the SSWS ERA Tuesday Telegram Distribution List.

# Lawsuits



- FOIA request
- Requester wanted test results and growth data with anonymous but longitudinal teacher and student IDs for 3 years
- Helped illustrate that if one side of the link is decoded, the other can be too

# Parent Communication



- Parent refused to provide the race/ethnicity data and questioned motives and authority to collect it
- Professional publication to support work

# Last Minute Gift Ideas

- Happy Birthday
- Merry Christmas
- Happy Earth Day
- Nothing says “I care about you professionally” than a stylized sheet of ‘how-to-do’ something useful

**Appendix A: Data Visualization Handouts**

**The Data Visualization Process in Your Education Agency**

Given the detailed data that are collected about the inputs, processes, and outcomes of the education enterprise, it is not surprising that discerning the meaning of data is a challenge for education stakeholders, including practitioners, policymakers, researchers, parents, and the general public.

The ability to create customized, audience-specific data visualizations can become a fundamental and powerful aspect of a broader organization-wide analytical and communications strategy. Data visualization focuses on presenting information in a way that is not only accurate and appropriately comprehensive, but also understandable and actionable for each of your intended audiences.

When applied effectively, the sound data visualization approaches below will improve a viewer's ability to understand, analyze, and retain information and, subsequently, use that knowledge to make decisions.

**Four Key Principles for Effective Data Visualization**

Key Principle 1: Show the data.  
 Key Principle 2: Reduce the clutter.  
 Key Principle 3: Integrate text and images.  
 Key Principle 4: Portray data meaning accurately and ethically.

**Seven Recommended Practices for Data Visualization**

Recommendation 1: Capitalize on consistency.  
 Recommendation 2: Data that should not be compared should not be presented side by side.  
 Recommendation 3: Don't limit your design choices to default graphing programs.  
 Recommendation 4: Focus on the take-home message for the target audience.  
 Recommendation 5: Minimize jargon, acronyms, and technical terms.  
 Recommendation 6: Choose a font that is easy to read and will reproduce well.  
 Recommendation 7: Recognize the importance of color and the benefits of Section 508 compliance.

**Six-Step Process for Data Visualization**

Step 1. Question: Someone Needs Information  
 Step 2. Research: Data Exploration and Analysis  
 Step 3. Findings: Data Meaning/Answer  
 Step 4. Customization: Audience-Specific Messaging  
 Step 5. Visualization: Present Data Meaning Clearly and Accurately  
 Step 6. User Feedback: Review and Refine Efforts

For more information about these data visualization process, principles, and recommended practices, download the free *Forum Guide to Data Visualization: A Resource for Education Agencies* at <http://nces.ed.gov/forum/publications.asp>.



Education organizations share data with stakeholders because the information is judged to be of value. Providing clear and accurate information about education settings, processes, and performance is a fair, necessary, empowering, and healthy component of our education system.



**Appendix A: Data Visualization Handouts**

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Thank You!