

The Power of Data Visualization

American Institutes for Research
Presented by: Michelle Yin and Amanda Duffy



National Reporting System
for Adult Education

1

Data Presentations with Infographics



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Agenda

- What are Infographics?
- Types of Infographics
- Designing Effective Infographics: Basic Principles
- Activity: Good and Bad Infographics
- How to Use State Data to Create Infographics



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What Are Infographics?



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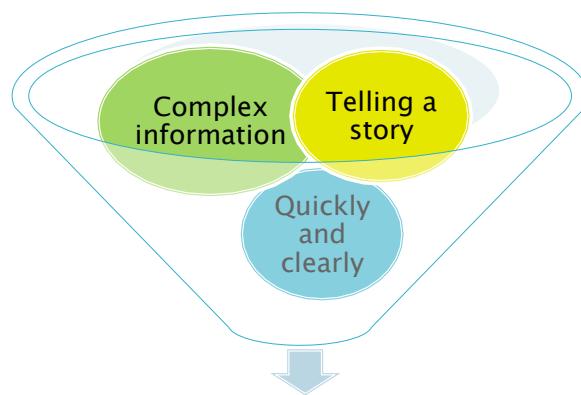
Video:
The Value of Infographics



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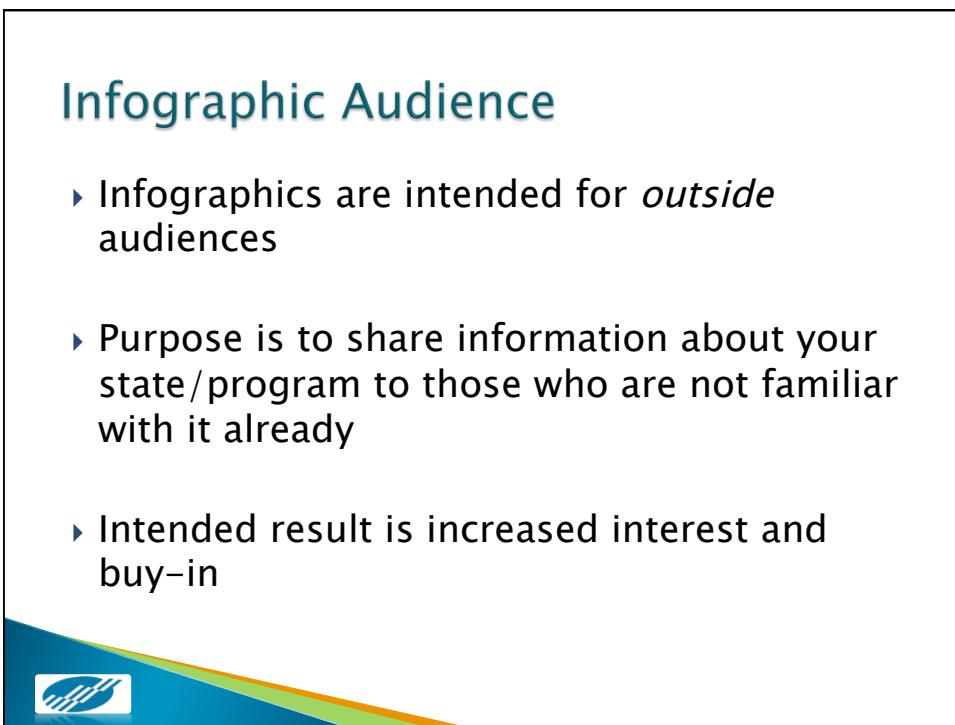
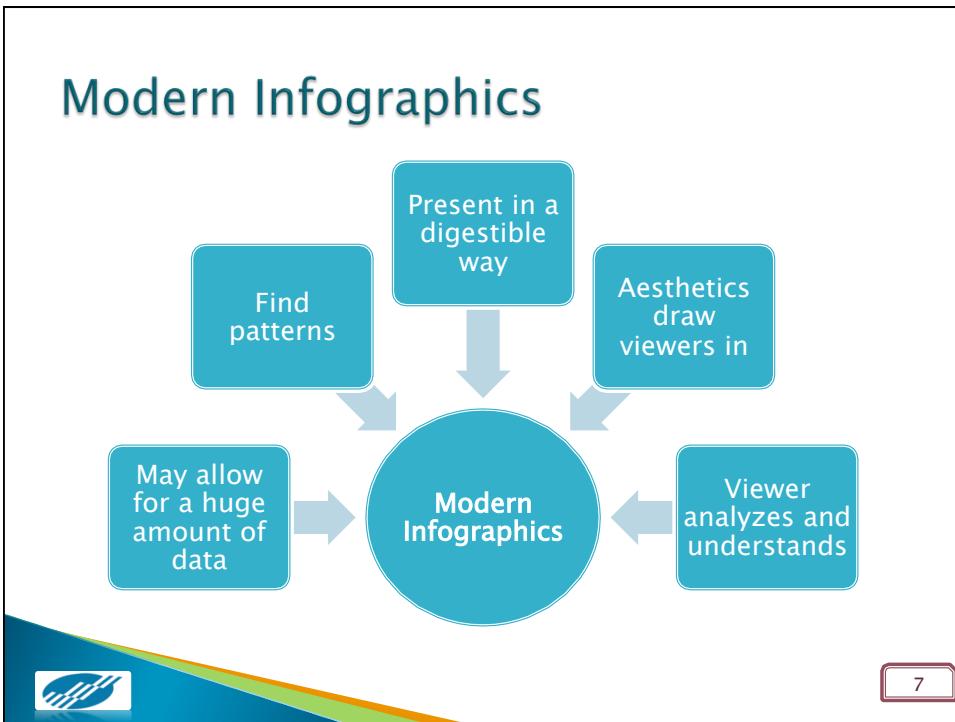
Infographics Are



Graphic visual representations



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Infographics Defined

- ▶ Graphic visual representations of information, data, or knowledge
- ▶ Intended to present complex information quickly and clearly
- ▶ Created for the purpose of telling or explaining a specific story to a specific audience



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Types of Infographics



See Handout 1: Which Infographic should you use?

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Eight Common Types of Infographics

Visualized Article

The Classic Infographic

Flow Chart

Photo Infographic

The Timeline

Versus Infographic

Useful Bait

By the Numbers

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Type 1: Visualized Article

Key features:

- Eye-catching
- Relies on images to speak

When to use:

- Topic can be supported by imagery
- Numbers aren't as important

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The infographic is titled "WHY PYRAMIDAL TEA BAGS Are Creating A Taste Bud Revolution...". It features five numbered points comparing pyramidal tea bags to traditional square tea bags:

- 1 More Flavour In Each Sip**: Pyramidal pouches allow more of the tea to come into contact with water, resulting in more complex, well-balanced taste.
- 2 Beautiful Aromas**: Enjoy the uncompromising experience of fully infused tea, without any of the accompanying mess.
- 3 Leaves Square Bags In The Dust**: Traditional square tea bags contain dust and tannins - the "scum" of the tea. Pyramidal tea bags use larger, higher quality leaves.
- 4 Perfect Tea, Mess-Free**: Enjoy the uncompromising experience of fully infused tea, without any of the accompanying mess.
- 5 Drink To Your Health**: Tea is loaded with antioxidants and other health supporting ingredients. With pyramidal tea bags, you get more of the good stuff.

The infographic includes illustrations of a cup of tea with a pyramidal bag, a traditional square bag, and a bowl of tea渣 (dust). The bottom left corner features the "essential tea" logo, and the bottom right corner has the number "13".

Type 2: Flow Chart

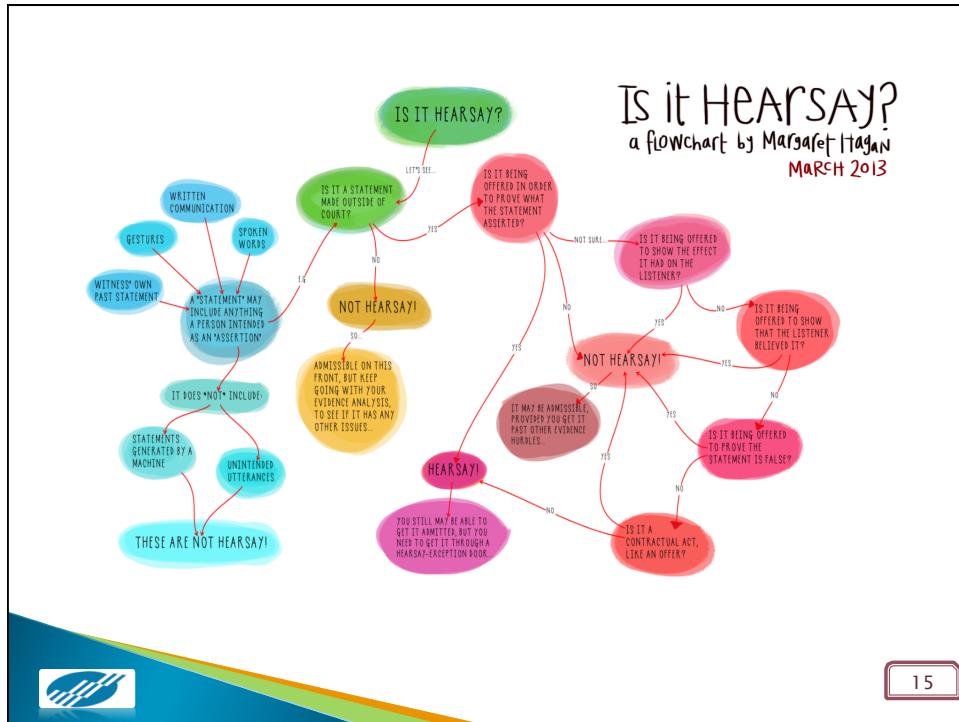
Key features:

- Flowcharts solve problems
- Force people to linger
- Humorous

When to use:

- The topic is broad
- The answer is simple
- The answer solves a relevant problem or curiosity

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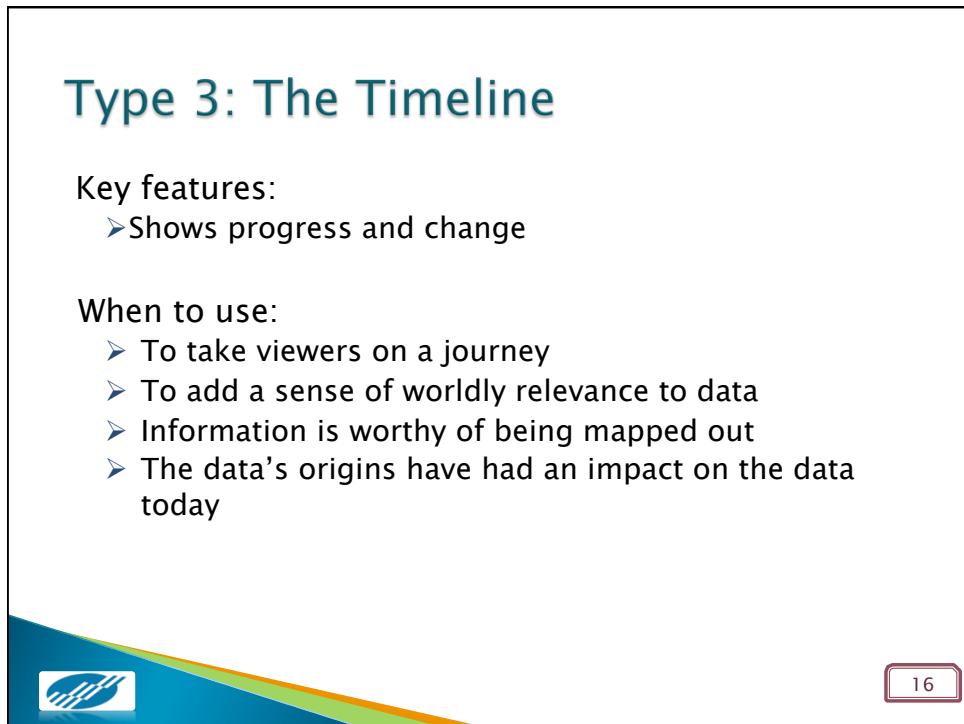
Type 3: The Timeline

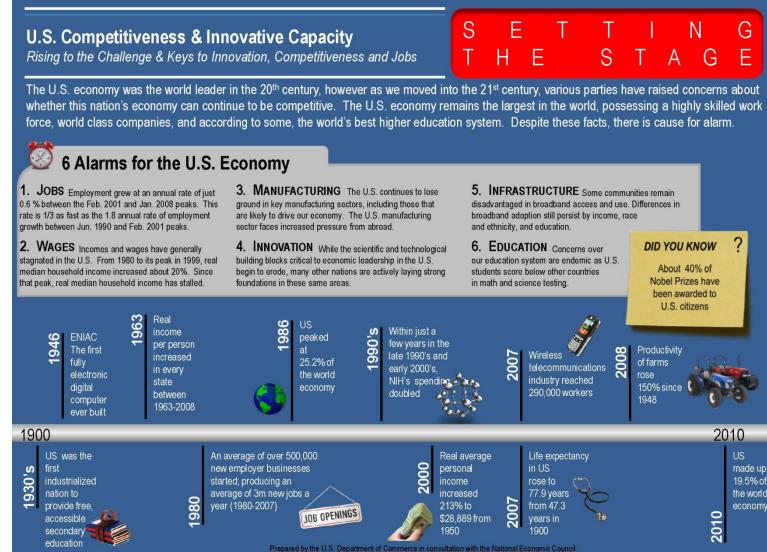
Key features:

- Shows progress and change

When to use:

- To take viewers on a journey
 - To add a sense of worldly relevance to data
 - Information is worthy of being mapped out
 - The data's origins have had an impact on the data today





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Type 4: Useful Bait

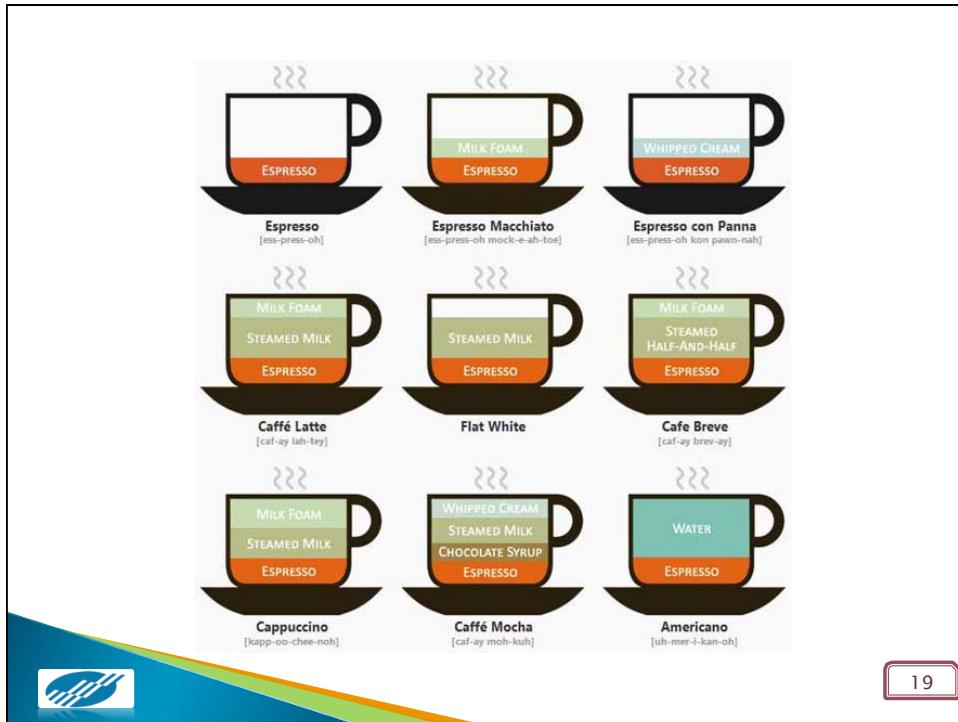
Key features:

- Purpose is to “pull in” audience
- Reference tool

When to use:

- Information is not time-sensitive
- To share something “classic”
- Not sharing new information, but creating a reference

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Type 5: By the Numbers

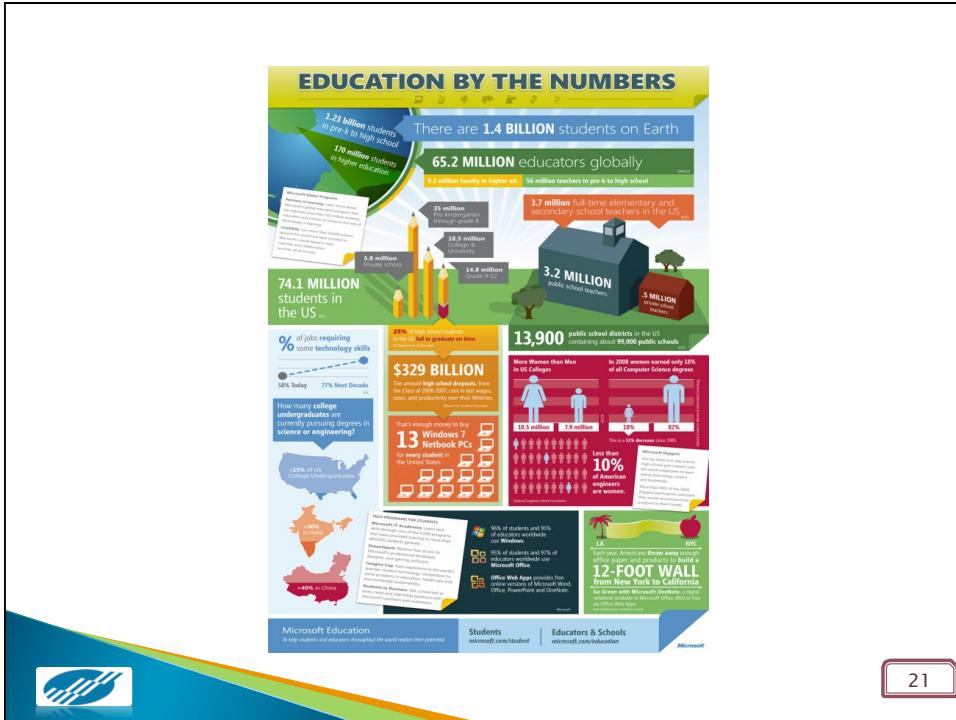
Key features:

- Impressive numbers
- Engaging design

When to use:

- Not feeling too imaginative
- Struggling with production of an infographic
- Many numbers to share
- Want to cover a lot about one topic

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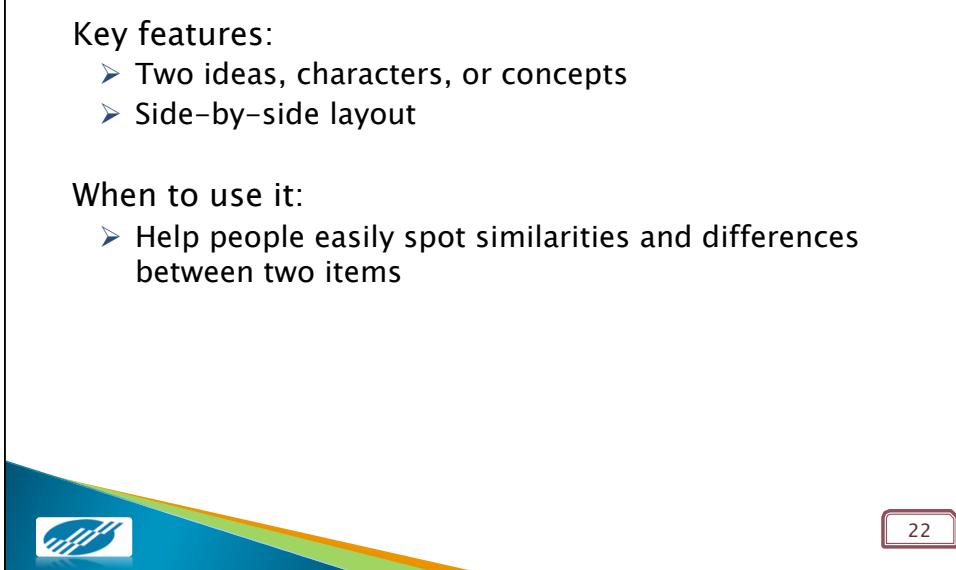
Type 6: Versus Infographic

Key features:

- Two ideas, characters, or concepts
- Side-by-side layout

When to use it:

- Help people easily spot similarities and differences between two items





Type 7: Photo Infographic

Key features:

- Quality photograph is central
- Well thought out design

When to use:

- You are a highly skilled infographic designer (they are the hardest to produce!)
- You want a unique way to display information

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Type 8: The Classic Infographic

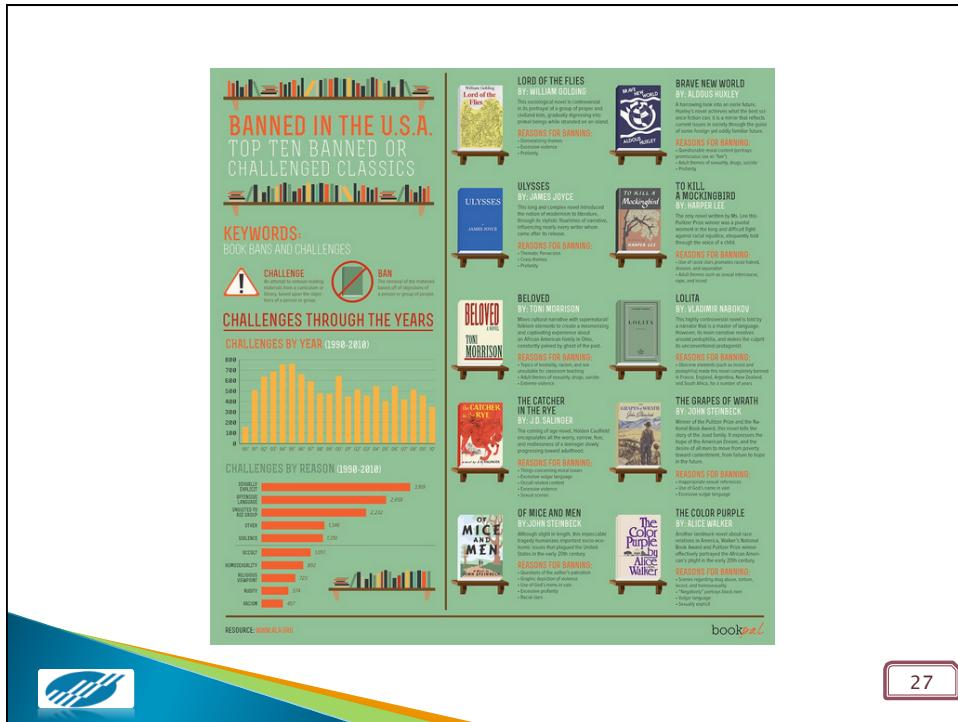
Key features:

- Data into charts and graphics
- Data used to tell a story/narrative

When to use:

- To present complex information quickly and clearly

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Designing Effective Infographics: Basic Principles

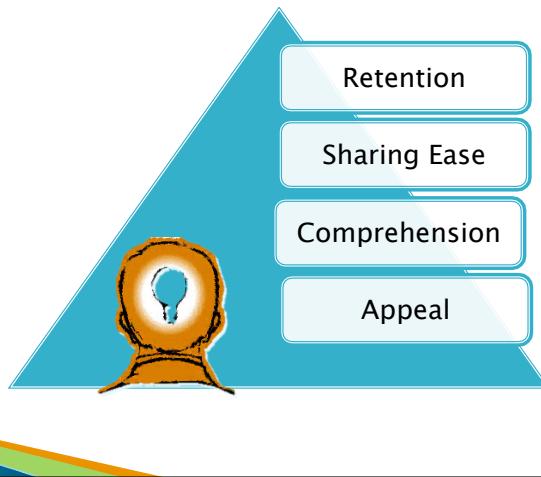


See Handout 2: Principles of Effective Infographics

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Visual Impact

- It is not enough to present a visual representation of data; designers must consider elements of



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Visual Impact (cont.)

Infographics



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An Effective Infographic

- ▶ Shares information quickly and clearly
- ▶ Is more than a pretty picture



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Principles of Effective Infographics

Two key ideas are woven throughout each principle

Audience

Information
is only dry if
you let it be



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Principles of Effective Infographics (cont.)

1. Stay focused
2. Be unique
3. Keep it simple
4. Make information accessible
5. Use good data, then find the story in it
6. Prepare to share



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Principle 1

Principle 1: Stay Focused

- Choose one topic
- Answer one question only
- Limit “extra” information



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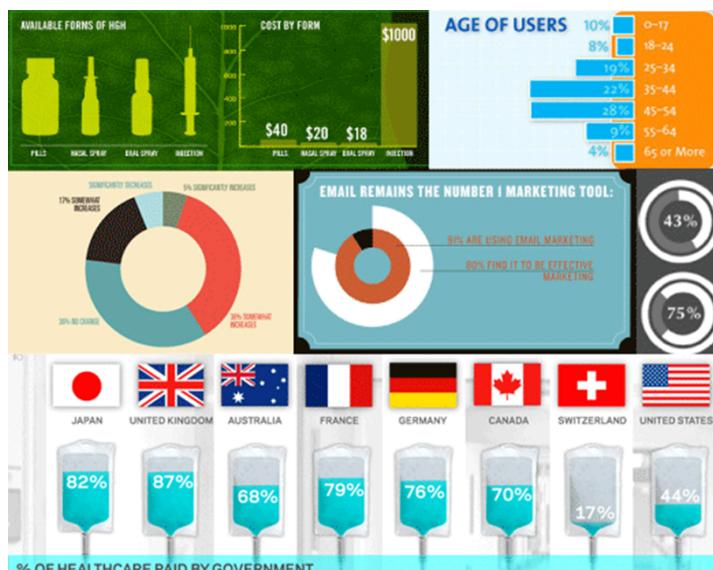
Principle 2

Principle 2: Be Unique

- Put a twist on something that your audience is familiar with or can relate to
- Be creative



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Principle 3

Principle 3: Keep it Simple

- Intended message is instantly recognized and understood
- Limit text, excessive colors, and too many pictures
- Text supports visuals



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Principle 4

Principle 4: Make Information Accessible

- Easy to understand
- Well organized
- Balanced
- Vary text and visual size according to importance
- Create a visual flow

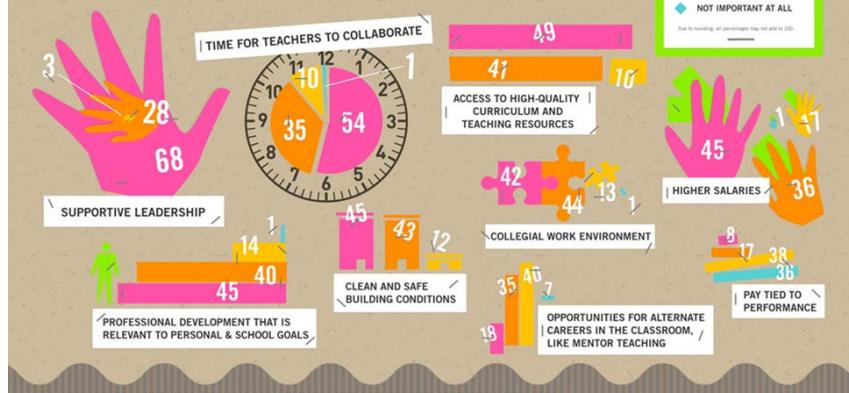


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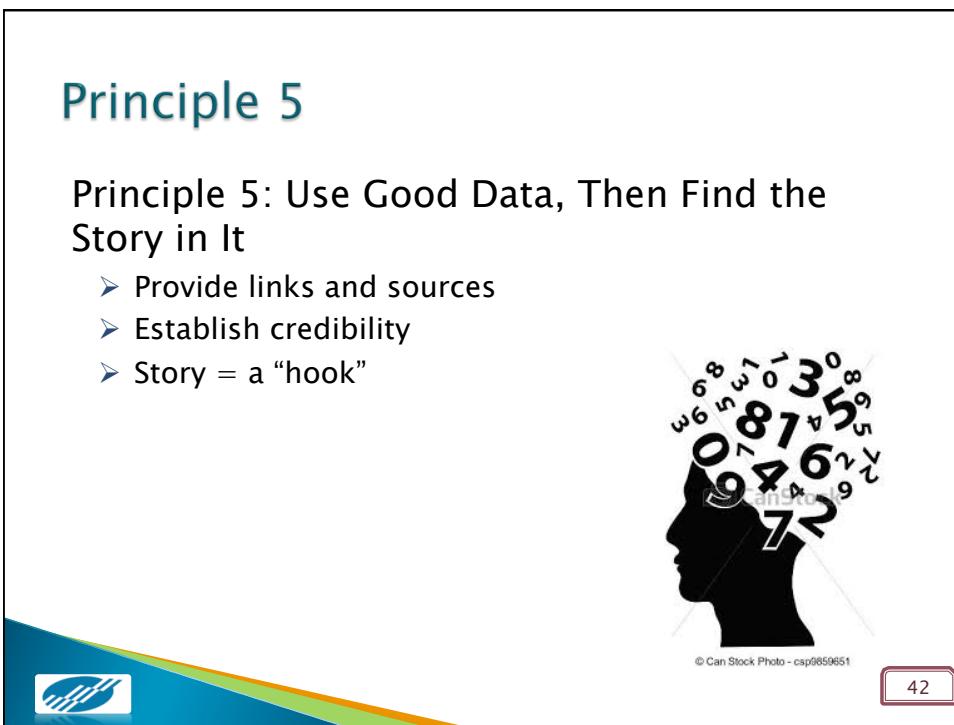
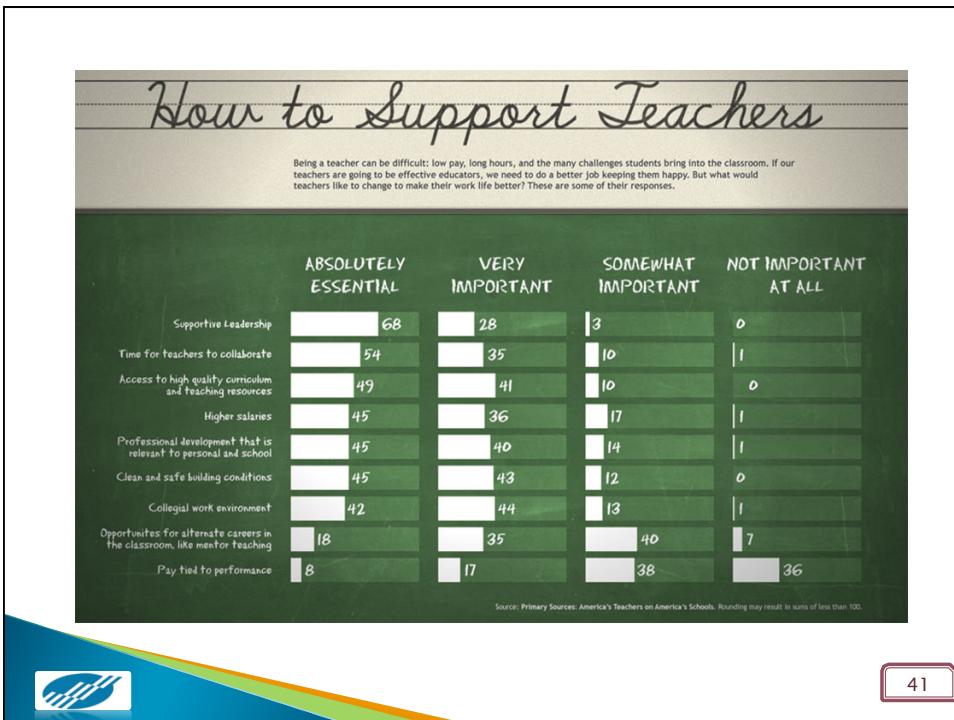
How to Support Teachers

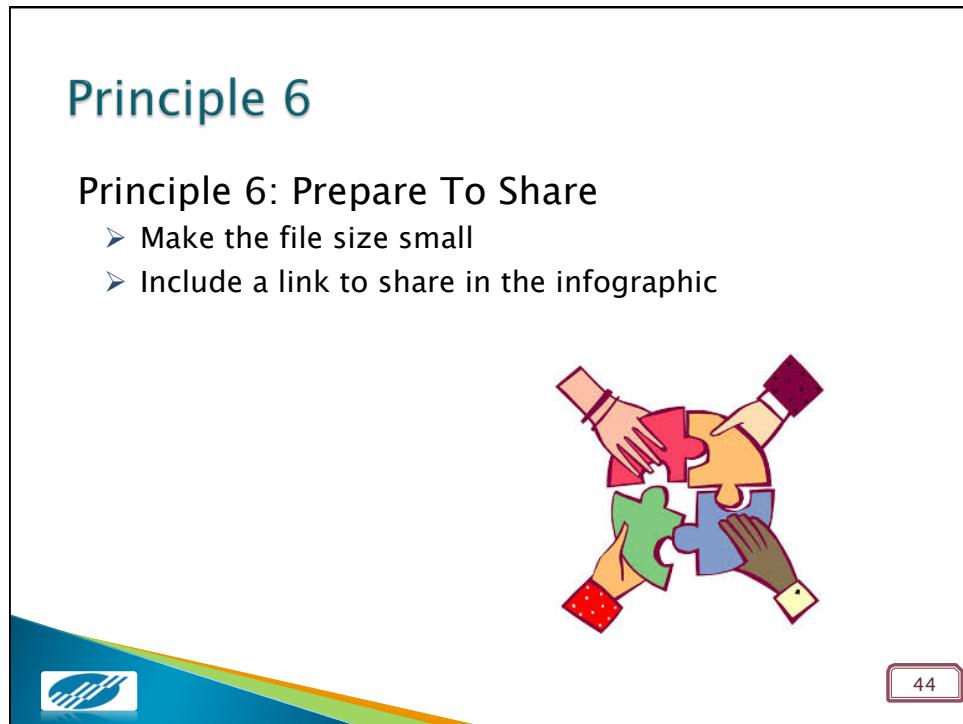
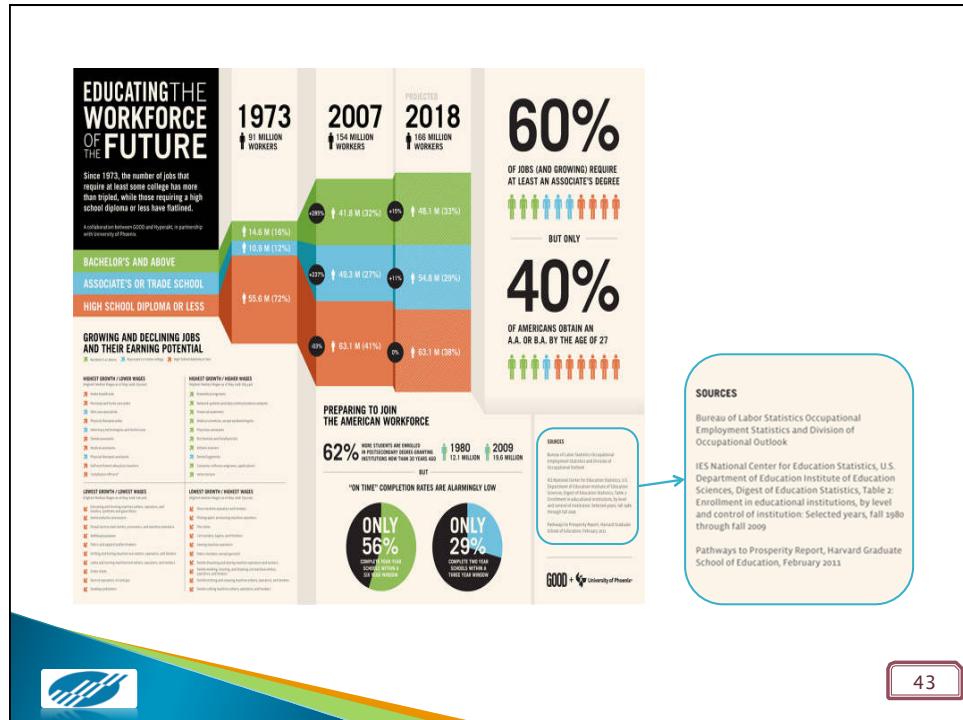
Being a teacher can be difficult: low pay, long hours, and the many challenges students bring into the classroom. If our teachers are going to be effective educators, we need to do a better job keeping them happy. But what would teachers like to change to make their work life better? These are some of their responses.

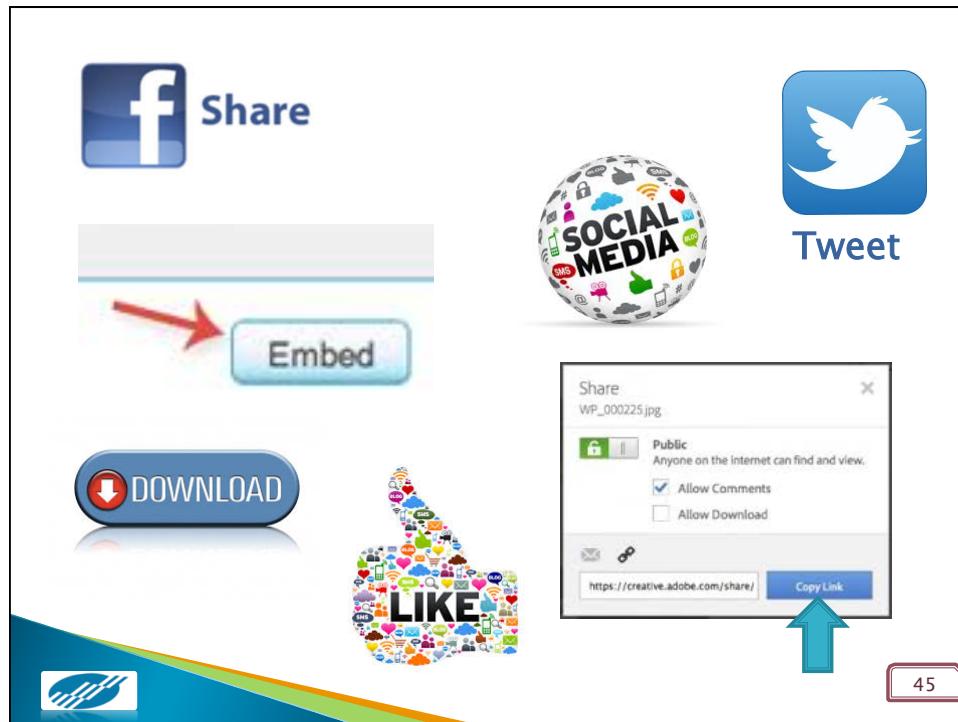
Legend:
■ ABSOLUTELY ESSENTIAL
■ VERY IMPORTANT
■ SOMEWHAT IMPORTANT
■ NOT IMPORTANT AT ALL



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Wrap Up

Wrap Up:

- ▶ Designing an infographic is a detailed process that requires careful consideration of all details
- ▶ Remembering and targeting your audience should be central to all decisions
- ▶ Be creative and have fun!

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Good and Bad Infographics: Activity

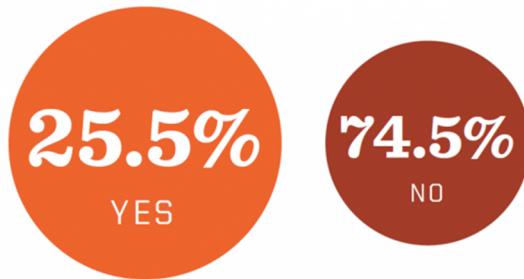


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Activity Example

HAVE YOU EVER FOLLOWED A BRAND ON TWITTER?



See Handout 3: Principles of Effective
Infographics Activity



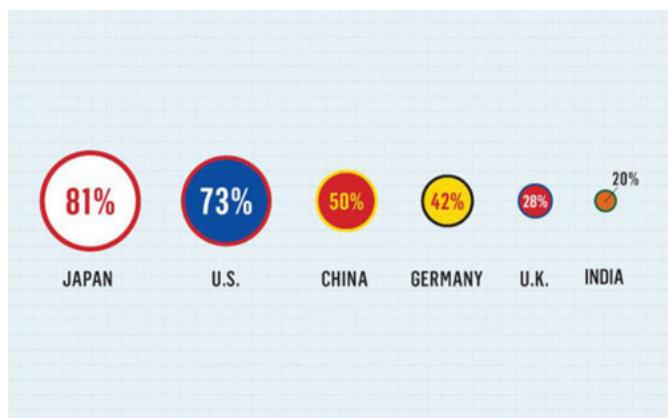
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Activity: Effective or not?

- ▶ Using the activity handout, examine each infographic shown and determine which principles of effective infographics have been or have not been met, and why
- ▶ Each team will be assigned an infographic to share out

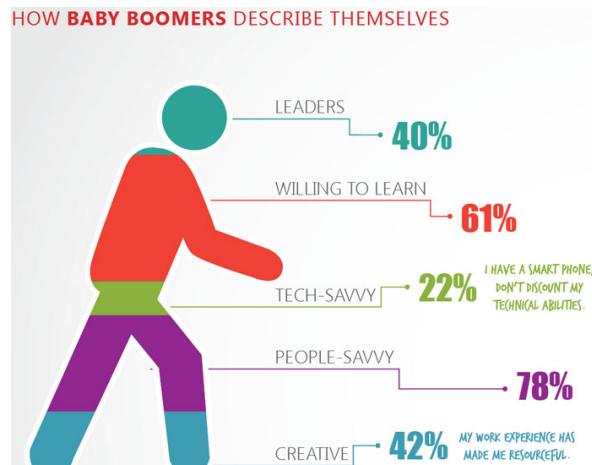
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Infographic #1



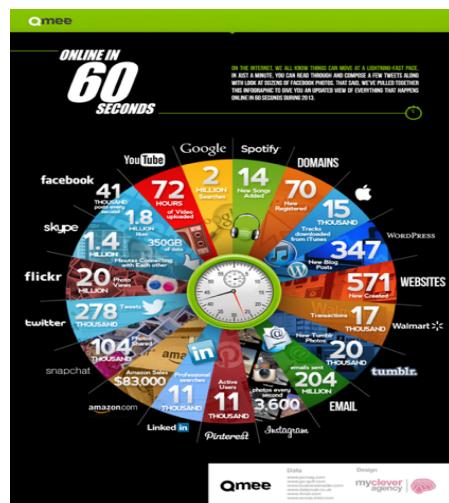
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Infographic #2



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Infographic #3



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Wrap UP

- ▶ Keep the principles of effective infographics in mind as you create your own.
- ▶ It is recommended that you ask others who are not on your design team or are very familiar with your program to review your final infographic.



Using State Data to Create Effective Infographics



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Effective Infographics

- Inspire support
- Make it personal
- Select the appropriate audience
- Engage interest



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Infographic Message

- Things to consider:
 - Target audience
 - Message or story
 - Data needed
 - Ease of understanding



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Step 1: Identify Target Audiences

- ▶ Take time to determine who you are trying to reach:

- Is it teachers?
- Is it students?
- Is it policymakers?



- ▶ This will drive your planning, creating, and designing



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Step 1: Identify Target Audiences (cont'd)

- ▶ What are some potential audiences you may want to reach?
 - Directors of local programs
 - Teachers in adult education programs
 - Students in adult education programs
 - Potential students for adult education programs
 - Staff in other state-level offices
 - Local community leaders
 - *Other?*



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Sample Infographic Planning (Step 1)

- To accompany the release of **Programme for the International Assessment of Adult Competencies (PIAAC)**, OVAE requested AIR to design an infographic for each state to characterize potential adult education students.
- Key audience: state directors and policy makers
- Now, think about your audience...



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Who Is YOUR Target Audience?

- Refer to Section A of the Infographics Planner
- In your state team, brainstorm potential audiences and what information you would want to convey
- Use the reflection questions to select a target audience for your infographic



See Handout 5: Infographics Planner
Section A: Audience

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Step 2: Tell a Story

- ▶ Decide what story you want to tell your audience
- ▶ Think about:
 - Topics of interest
 - Goal
 - Audience needs
 - Audience reactions
 - Relevance of the message



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Sample Infographic Planning (Step 2)

- ▶ Our audience: *Directors of state education programs*
- ▶ What kinds of stories might we want to tell this group?
 - Diverse population
 - Lower educational attainment
 - Low employment rate
 - The need for adult education



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What is YOUR Story/Message?

- ▶ Go to Section B of the Infographics Planner
- ▶ In your state team, complete the section, reflecting on the questions in relation to your selected audience

See Handout 5: Infographics Planner
Section B: Story and Message

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Step 3: Identify and Select Data

- ▶ What kind of data is your audience interested in?
- ▶ Do you have available data to support your story?
- ▶ Does your level of data provide a complete picture of the story you are trying to convey?
- ▶ Is your data in the appropriate format?

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Beyond NRS Data

- ▶ NRS data may be insufficient for your infographic
 - Your story and audience will help determine what data you need
- ▶ Supplement NRS with other databases
 - Other state agencies, e.g., Department of Labor, community college, local employment or educational statistics
- ▶ Publicly available national and international databases



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National and International Databases

- ▶ U.S Census Data
 - American Community Survey
 - OVAE database
- ▶ International Surveys
 - PIAAC
 - Worldbank EdStats
- ▶ Educational and Labor Statistics
- ▶ Disability statistics
 - RSA, OSEP, Census



See Handout 4: Extant Data Sources

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Sample Infographic Planning (Step 3)

- ▶ Our audience: *Directors of state education programs*
- ▶ Our Story: *Describe potential adult education population*
- ▶ What data is needed to tell this story to our selected audience? Where can we find the data?



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What Data do YOU Need?

- ▶ Go to Section C of the Infographic Planner
- ▶ In your state team, identify what data you need to support your story. Where will you get it?

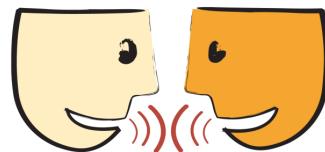


See Handout 5: Infographic Planner
Section C: Identifying and Selecting Data

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Step 4: Communicate Complex Data Simply

- Make the story easy to understand
- Shared information should be simple enough to be understood quickly, without much analysis



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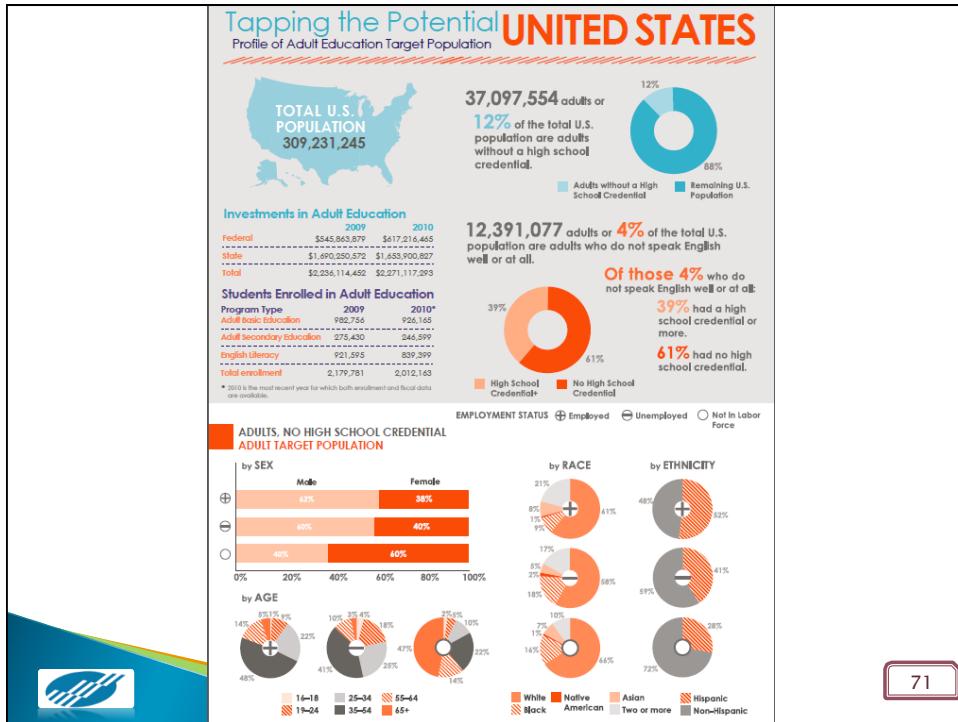
Sample Infographic Planning (Step 4)

- Our audience: *Directors of state education programs*
- Our Story: *Show the trend of follow-up outcomes over the past few years*
- Our data: *American Community Survey 2009*

See Handout 1: Which Infographic Should You Use?



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How Will YOU Communicate the Data?

- In your state team, review the types of infographics and select the type of you want to create based on your information.
- Once you've selected a type, use Section D in the planner to sketch ideas for your design

See Handout 5: Infographic Planner
Section D: Type of Infographic and
Handout 1: Which Infographic Should You Use?

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Check-in/Reflection

- ▶ Using Section E of the Infographic Planner, review your target audience, story, available data, and type of infographic
- ▶ Use the reflection questions to revise Sections A-D as needed

See Handout 5: Infographic Planner
Section E: Review and Reflect

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Using Piktochart to Create an Infographic



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Piktochart

► <http://piktochart.com/>

- Drag and drop high-resolution images, graphs, or other data into its templates
- Create searchable, interactive charts



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Goals for This Tutorial

- Learn the basics of Piktochart
- Create your own infographic



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Sample Infographic Planning

Where we are:

- ▶ Our audience: *Directors of state education programs*
- ▶ Our Story: *Show the trend of follow-up outcomes over the past few years*
- ▶ Our data: *NRS Table 5*
- ▶ Type of infographic: *Classic or By the Numbers*



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Sample Data Set

Longitudinal data: **core follow-up outcome measures**

Core Follow-up Outcome Measures	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Entered Employment	62%	55%	49%	48%	48%
Retained Employment	71%	65%	64%	62%	66%
Entered Postsecondary Education or Training	56%	59%	60%	56%	58%



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Using Piktochart

- ▶ Go to <http://piktochart.com/>
- ▶ Log in with your username and password



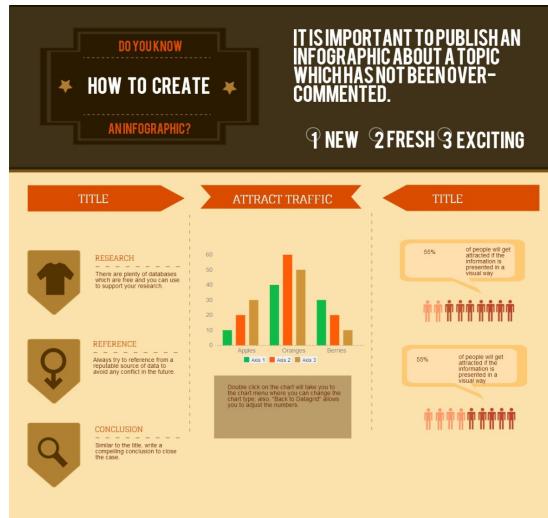
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Your Turn!

- ▶ Open a browser and go to www.piktochart.com
- ▶ Click the “login” button in the upper right corner of the page
- ▶ Using the information provided, log in to your account with your username and password

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1. Select a Theme Template



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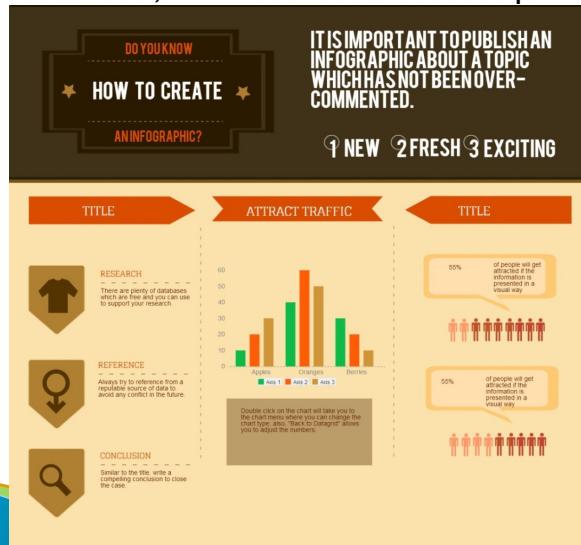
1. Select a Theme Template (cont.)

- ▶ Note: we are going through the basic steps to create an infographic with this tool
- ▶ If you would like to modify the themes (e.g., color, shapes) a step-by-step guide with video links is provided in your binder

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Your Turn!

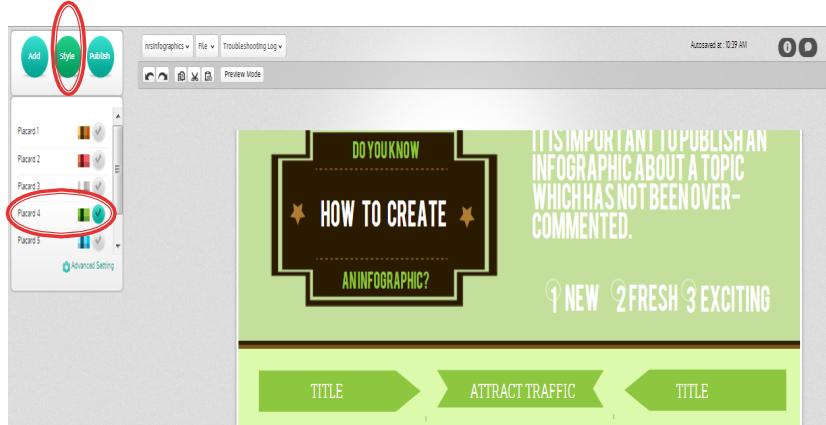
- For this tutorial, select the **Placard** template



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2. Modify the Template

Modify colors and fonts



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Your Turn!

- ▶ In the template you have selected:
 - Click “Style”
 - Select an alternate color palette based on the options available
 - When you select a different option, the template to the right reflects the color change

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3. Edit the Canvas with Your Data

Change fonts,
font size, and
positions

Double-
click to
edit text



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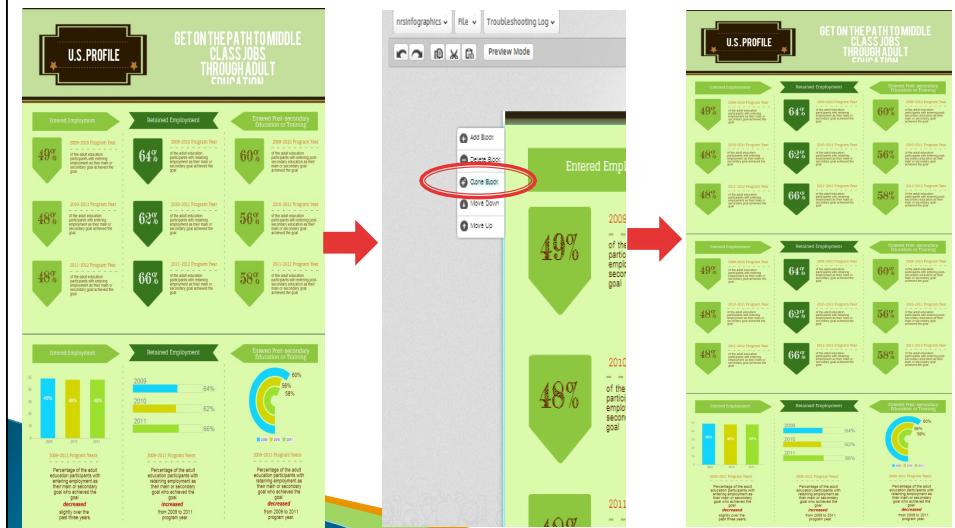
Your Turn!

- ▶ In the template you have selected:
 - Double-click the title block
 - Highlight the text and rename the infographic
 - Use the menu at the top of the page to bold the text and change the color

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4. Edit Your Block

Add, duplicate, move up, move down and delete a block



Your Turn!

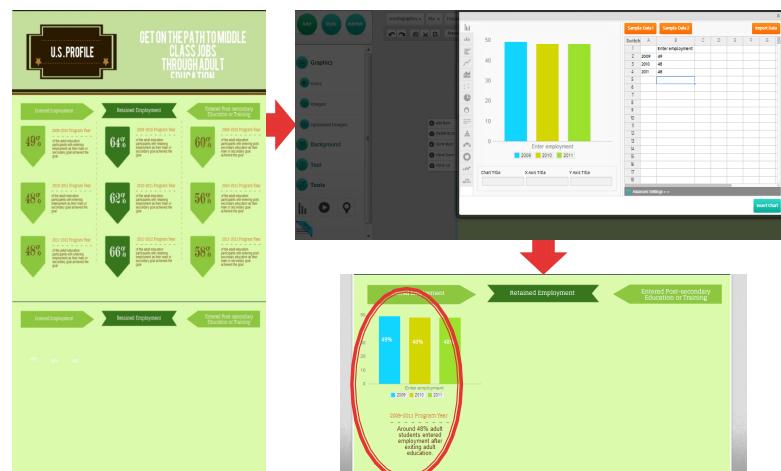
- ▶ In the template you have selected:
 - Click any block
 - Hover over the icons on the left to reveal the side-menu
 - Use the menu to add, delete, duplicate, or move the block to another position.

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The diagram illustrates the process of creating a professional infographic. On the left, a dark-themed template titled "DO YOU KNOW HOW TO CREATE AN INFOGRAPHIC?" is shown. It includes sections for "TITLE", "ATTRACT TRAFFIC", and "CONCLUSION". The "ATTRACT TRAFFIC" section features a bar chart with three bars. A callout box provides a tip: "Double click on the chart and take note of the 'Chart type' tab. You can change the chart type also. That's 'Change' above your chart area." An orange arrow points from this template to the right, where a final, polished infographic titled "U.S. PROFILE" is displayed under the heading "GET ON THE PATH TO MIDDLE CLASS JOBS". The final version is light green and contains two main sections: "Entered Employment" and "Entered Post-secondary Education or Training". Each section is further divided into "2009-2010 Program Year", "2010-2011 Program Year", and "2011-2012 Program Year". Each year group contains a bar chart and a corresponding data callout box. The overall design is clean, professional, and visually appealing.

5. Import Data into the Blocks

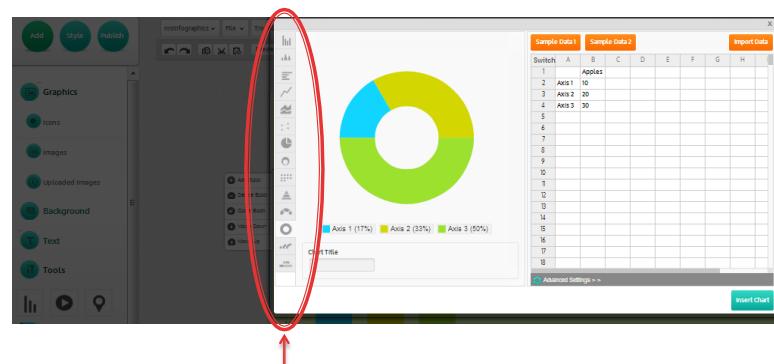
a. Add graphs



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5. Import Data into the Blocks (cont.)

b. Change chart types



Different chart types for different data presentations

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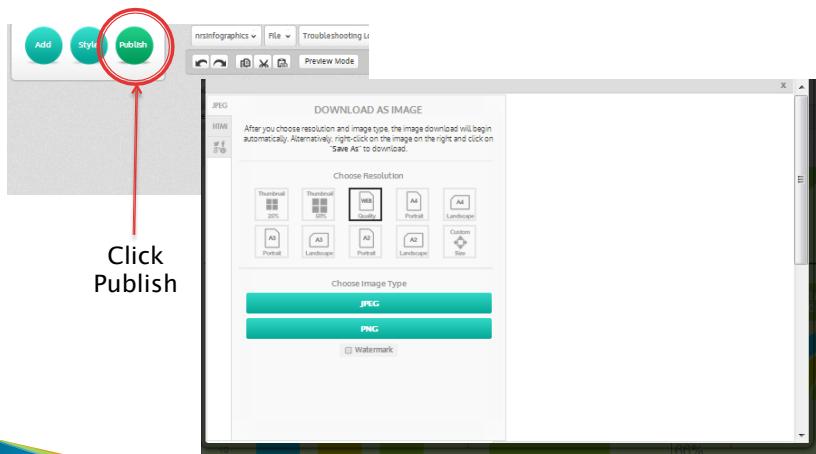
Your Turn!

- ▶ In the template you have selected:
 - Double-click one of the data charts in the template
 - Insert data for this table:
 - Copy and paste the information here
 - Select a graph to display the data
 - Click “Insert Chart” to save the data
- ▶ Repeat Steps 2-4 for each block on the template

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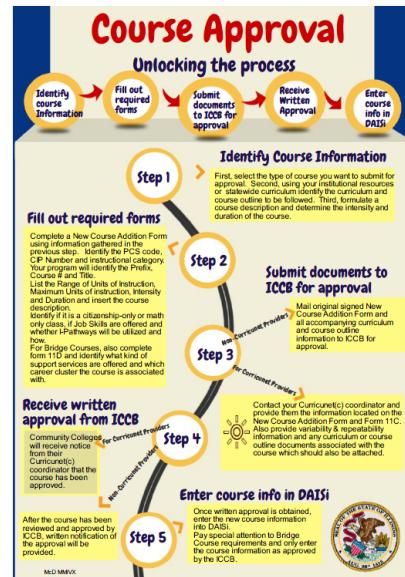
6. Publish Your Infographics

Save as a picture or online link

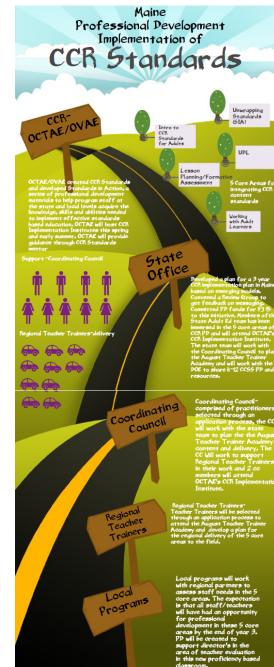


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State Example 1



State Example 2



Next Steps



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Next Steps

- ▶ Sign up for Picktochart or a different site
- ▶ More information can be found here:
 - www.airlearning.org
 - NRS Infographics and Dashboards



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Questions and Discussion



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Thank you!



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