**Data 101 Training Template**

**September 13, 2016**

**General Framework**

**Introduction**

Data 101 is an introductory data workshop series designed for people looking to get started on their journey toward data literacy. At the Western Pennsylvania Regional Data Center’s first property data user group meeting in March, 2016, we learned that there were a lot of people that know data can be important to their work, but weren’t sure about where to start. Similarly, there are existing learning opportunities for intermediate data users, but not many options for people working with data for the first time, which are critical in order to build an inclusive data community. Data 101 is a partnership of the Carnegie Library of Pittsburgh and the Western Pennsylvania Regional Data Center. The Library has a strong interest in promoting data fluency among their staff and in the broader community.

To date, we have held four workshops in the Data 101 series. The first provided participants with an introduction to data visualization, and the second - the focus of today’s workshop - addressed storytelling with data. We’ve gone on to incorporate computers into the next two workshops, one an introduction to mapping with Carto, and the final workshop provided an introduction to charts and graphs with Google Sheets. Our storytelling workshop was inspired by the Data Therapy’s [“Find a Story in Data”](https://datatherapy.org/activities/activity-finding-a-story-in-data/) activity.

Our workshops emphasize the use of paper because we’ve learned that people are more-likely to understand data literacy concepts if they’re not challenged with learning how to use a piece of software at the same time. This is true for the first two workshops where paper only is used, and several of our follow-up classes which incorporate computers only after demonstrating core concepts using paper first. We have observed that using paper helps to democratize the workshop, allowing all participants to start at the same level of expertise regardless of their digital skills. Our workshops have also been highly collaborative, and paper allows participants to work together more easily and ensure everyone can participate.

**Goals:**

* Increase the data literacy and technical skills of less-experienced members of the target audience.
* Expose participants to open data and other data resources and encourage them to use it in their work.
* Create a welcoming environment that encourages and prepares participants to take advantage of existing programming.

**Target Audience:**

While Data 101 is designed for beginners, Data 101 is for everyone. Many more-experienced people can always benefit from a refresher course. Our primary audience includes:

* Library staff
* Non-profit staff/interns
* Government staff
* Students
* Journalists
* Interested individuals

Data 101 is also a great opportunity to refresh the skills of your own junior staff or interns, while introducing them to a community of current and future data users.

Our trainings to date have been open to the general public. Sessions are tailored to participants that have some computer literacy, but more-limited experience working with data. We’ve found that having a diverse mix of data users in the room is a great way to build relationships and allow participants to learn from each other. We have found that even more-experienced attendees also benefit from Data 101. These people can always benefit from a refresher course in basic data literacy concepts as well as from the conversations sparked by Data 101. In response to demand, we are developing some targeted trainings for specific audiences, including public sector employees. However, these targeted trainings will be offered in addition to - and not instead of - open and public learning opportunities, which are the foundation of the Data 101 workshop series. We’re also developing a toolkit to allow other public libraries to adopt Data 101 trainings.

**The Finding Stories with Data Workshop**

In today’s workshop, you’ll learn how to set-up your own version of the “Finding Stories in Data” workshop, the second in our Data 101 series. You’ll be able to use this document to help plan your own workshop when you return home. We’ve included everything you’ll need to know,, including the structure of the event, how to prepare data to be used in the workshop, room setup, materials, and performance management.

Our “Introduction to Data Visualization” workshop led by consultant David Newbury served as a great lead-in for this workshop. You may want to [view his slides](http://www.slideshare.net/workergnome/data-101-introduction-to-data-visualization) or even hold your own data visualization workshop prior to leading your own storytelling workshop. The visualization workshop introduced a number of techniques for making pictures using data, and the paper-only format allowed participants to be as creative as they wanted to be, as they weren’t bound by common chart and graph templates.

**Preparing for the Workshop**

There are several steps involved in preparing for your own Data 101 storytelling workshop. You’ll get a hands-on look at our room setup and materials design as part of today’s activity.

1. Finding an Appropriate Location

We have had a great experience hosting the workshop at the East Liberty Branch of the Carnegie Library of Pittsburgh. In our opinion, libraries are ideal places to hold your Data 101 event, and libraries make for great partners. Holding the workshop in a public place that is not viewed as overly tech-focused also sends a signal to the audience that the workshop will be beginner-friendly. If you don’t yet have a partnership with your public library, Data 101 may be just the thing that can get something started.

Whatever your location, a multi-purpose room that has a number of tables and chairs that can accommodate up to six people per tables spread throughout the room. It helps if you can easily move the furniture. Our Data 101 workshops have attracted approximately 50 people. To handle this size crowd, we used all nine of our available tables. Your room should also contain a projector, and screen, and it’s also helpful if you’re allowed to tape or tack paper to the walls. Guests also appreciate light snacks, such as mini candy bars, small bags of chips, and bottles of water, and you should ask if you can provide these in your space.

Our workshops all started at 10am and lasted two hours. We decided to do them during the day based on an informal survey we conducted with attendees at our data user group meetings. It’s good to ask your target audience if there’s a time and day they prefer for Data 101.

2. Marketing and Promotion

The more events you hold, the easier it is to attract an audience for events like Data 101. We advertised our workshops through both the Library and the NNIP partner. We had good results in marketing through twitter, our email distribution list (which includes previous Data 101 attendees), and by having partners distribute through their networks. When we market new Data 101 workshops, we send the notice to previous attendees a day or two before opening registration to new attendees. Creating a sense of exclusivity can drive demand and encourage members from a Data 101 “cohort” to complete all available workshops together. We use eventbrite to manage RSVP’s. A copy of our session description appears below, and our [eventbrite description](https://www.eventbrite.com/e/data-101-finding-stories-in-data-tickets-26078369104) is still available.

## **Description**

Stories are powerful. Yet stories can be hard to uncover, especially when it comes to finding stories in data. A single dataset can contain many different stories depending on the values of the storyteller and the context of their experiences. Want to hone your storytelling skills? This workshop will introduce the typical kinds of stories that can be found in data and give you practice in finding your own data stories.

No computers will be used in this class, and there are no prerequisites. As a result of this workshop, you’ll feel more confident “reading” datasets to uncover the stories they contain. The art of finding stories in data will also help you produce data visualizations or narratives, or simply become a more critical consumer of data.

3. Staffing

It’s best to have at least two people to help with this Data 101 “Finding Stories in Data” workshop. A good rule of thumb is that you can accommodate up to three tables of participants for every facilitator. In our workshop, both Library and NNIP staff were involved as facilitators. In addition to delivering the presentation, facilitators were essential in setting up the room, helping participants find materials, answering questions, and prompting groups that were having trouble getting started. Please make your facilitators aware in advance of the structure of the event, agenda, and your teaching goals.

4. Materials

Materials needed for the workshop include:

* Laptop (for the presentation)
* Projector
* Sign-in sheet
* Satisfaction surveys
* Pens
* Markers (washable are best because mistakes happen)
* Highlighters
* Large format paper that markers won’t bleed-through (we prefer sticky-backed easel-sized paper or drawing tablets)
* Post-it notes - large (15”x15”) and small
* Data, maps, and list of storytelling prompts (see next item)
* Data Therapy’s finding stories [worksheets](https://datatherapy.files.wordpress.com/2014/07/finding-a-story-worksheets-v1-1.pdf)
* Tape (masking and transparent)
* Scissors
* Books or other resources for post-workshop learning (if available)

5. Data, Maps, and Storytelling Prompts

The key to a successful workshop are the datasets and maps prepared in advance. We have included several examples of the types of materials we prepared for our workshop. These have been printed from spreadsheets, and we did very little work to clean any datasets (it’s good to show that data is not perfect). You can include at least five or six variables and at least 100 records in your dataset. If you have a workshop length of at least two hours and capacity to print on large paper (we used our plotter), you have the ability to include more variables and records in your data story. Every table in the room had a unique dataset.

It helps to anticipate the needs and interests of participants. To this end, we included data for nearby neighborhoods in our materials. We also included copies of data dictionaries and codebooks for our datasets where available. We sought to enable attendees to tell their stories in any way possible. If our data included a neighborhood name column, we provided a blank base map of City neighborhood boundaries. The two groups using property sales data wound up making maps of sales color coded by type of sale on our neighborhood parcel map.

For each story, we also prepared a set of storytelling prompts. While these were not shared with the participants so as not to provide too much guidance, they were useful to facilitators that were looking to offer suggestions to groups having trouble getting started. A copy of our storytelling prompts are included with our sample materials.

6. Room Setup

The room is set-up by organizing a number of tables spread out across the room. Give your participants enough room to move. We put six chairs around each table, and tried to encourage participants to form groups of four to six people to work on each data story. Data was not distributed until the presentation was complete. In the center of the room, we put all of our markers, paper, and other materials on one table, and encouraged participants to take what they needed. We also reminded the participants to return materials if done using them to make them available to other participants. The materials table was set-up in advance of the workshop. We also had provided a number of data-related books from the library and made them available for check-out.

**At the Workshop**

The agenda for the “Telling Stories with Data” workshop contains the following five items.

1. Welcome and Introductions

The workshop starts with a welcome and participant introductions. We share the agenda, talk about expectations, and ask participants to sign-in. We also let them know about the entire Data 101 series, and encourage participants to borrow relevant books we provided from the library’s collection.

2. Storytelling Presentation and Sample Activity

We then deliver the [data storytelling presentation](https://drive.google.com/open?id=1hQkRRHGStrwOZloWnPDHGQ-WQTvOqHN_fIYhXnMyMtY) developed by the Library’s Eleanor Tutt. The presentation takes approximately 10 to 15 minutes.

3. Finding Stories Activity

We then do a sample activity with the entire room to show participants how they might approach the stories once they begin the table activity. The tree data (included in the packet of materials) are distributed to participants, and the tree map is displayed on the wall. Participants are asked to look at the data and find a story. The facilitator is there to prompt the audience and visualize the data (on the map or paper posted to the wall) based on feedback from the audience. Prompts could include: “Do you see a relationship between tree condition and species,” “let’s plot the tree species on the map,” and “can you come up with a way to visualize the age of trees in the neighborhood.” This activity should take no more than ten minutes. Once participants seem to get the gist of it, move on.

4. Finding Stories Exercise

All of the data, maps, and worksheets are distributed to the groups at each table. The facilitators should describe each of the datasets and other materials that are included in each packet, and give each group a few minutes to absorb them. If the groups are not getting started on their own after five minutes, the facilitator can offer a few storytelling prompts, and also suggest ways the group can divide the labor to accomplish each task. This activity should last over an hour. With 15 minutes left in the exercise, the groups should be prompted to begin preparing their stories.

5. Storytelling

Just before the wrap-up, the main facilitator will go around the room and ask each group to briefly share one of the stories from the activity. The Data Therapy worksheets can be used as a storytelling guide if the groups so choose. One member from each table will talk about their storytelling process and tell the story, using some of the data visualizations made at their table.

6. Wrap-up and Survey

A survey administered at the event on paper measures the satisfaction of participants and effectiveness of the event. We asked participants to complete the survey before leaving. We also use the sign-in sheets to track overall attendance and the communities and organizations represented in the audience. We also like to understand the number of attendees that previously attended at least one of the Data 101 workshops. A survey administered following the event will assess the degree to which attendees are using data in their work. A copy of the satisfaction survey we used is included in the packet for this workshop.

**Questions?**

Please feel free to reach out to us. Here’s our contact information:

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