



CAREER COMPASS

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**Data Management:
The Storytelling Method**

Participant Workbook

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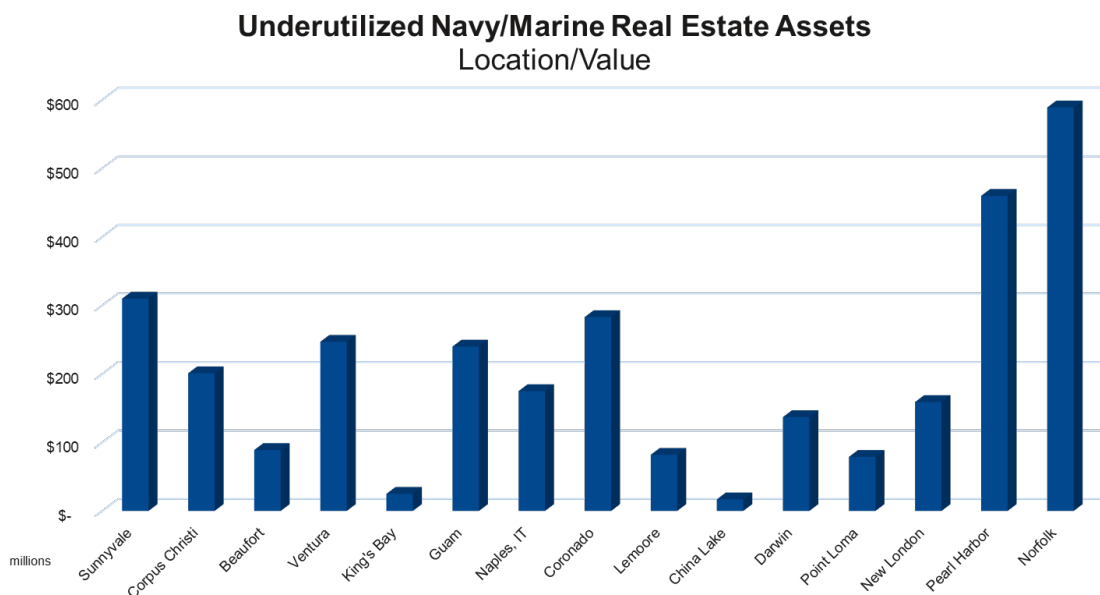
Introduction

Objectives

Participants will be able to:

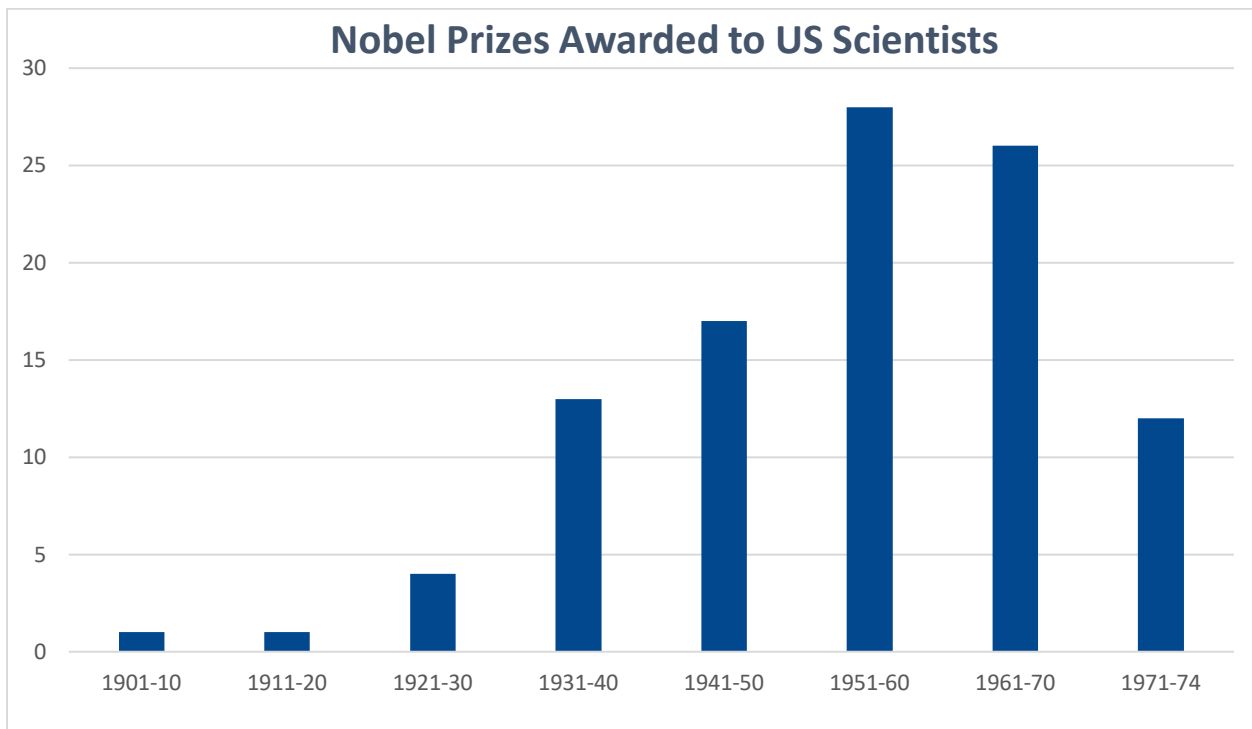
- Organize data to support the data storytelling approach.
- Apply the basic elements of effective data storytelling.
- Craft a data storytelling presentation using the data storytelling techniques and steps.

Workbook activity: What might improve this chart?



Ask yourself: What does this chart tell me? What is its purpose? Why is it organized the way it is? How much work do I have to do to pull anything useful from it? How could the data be presented in a better, simpler way? Use the space provided here to capture your thoughts and observations.

Workbook activity: How might this chart mislead?



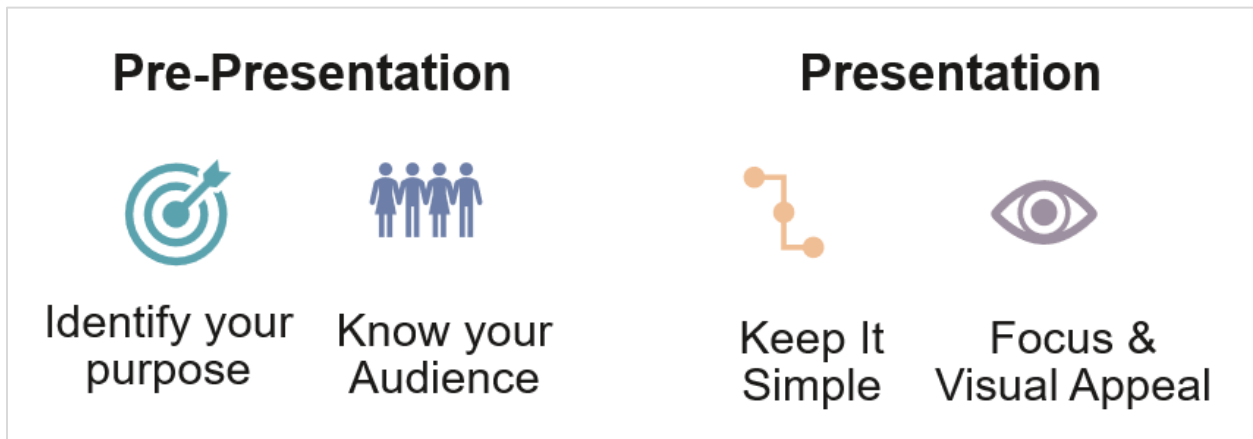
What is amiss? Use the space provided here to capture your thoughts and observations.

Agenda

1. Identify Your Purpose
2. Know Your Audience
3. Organize Your Data
4. Data Visualization: *Simple with Impact*
5. Content, Narrative, Visuals & Scripting
6. Tools



Steps of Data Storytelling



Step 1: Identify your Purpose

- Take the time before you create a visual to understand the question your data will answer and the most effective way to communicate that information.
 - Example: Do you want to compare two sets? Show a trend over time? Show a relationship between two variables?

Step 2: Know your Audience

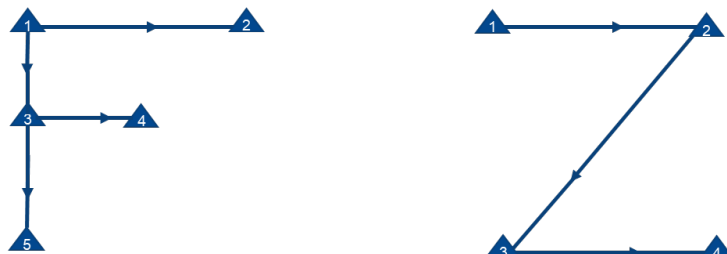
- Be aware of context:
 - What does the audience need to know?
 - What does the audience already know?
- Tailor your content to the audience's level of investment.
- Your target audience should not need to ask questions to understand the graphics or text.

Step 3: Keep it Simple

- Highlight the key message you want your audience to see.
- Use more visuals and less words.
- Reduce clutter.

Step 4: Data Visualization- Emphasize Focus and Visual Appeal

- Use a cohesive color scheme and contrast.
- Use bold and large fonts.
- Again, reduce clutter.
- Don't make your reader work. There should be a natural path for the reader's eyes: left to right → up and down.

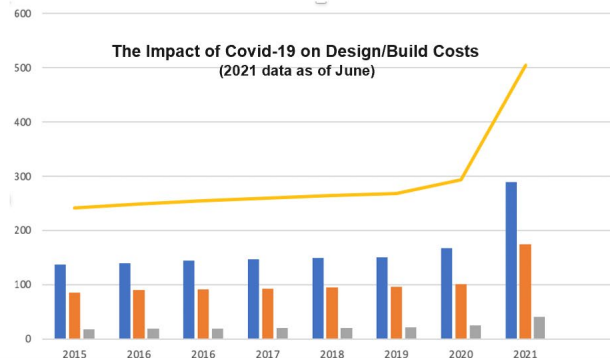
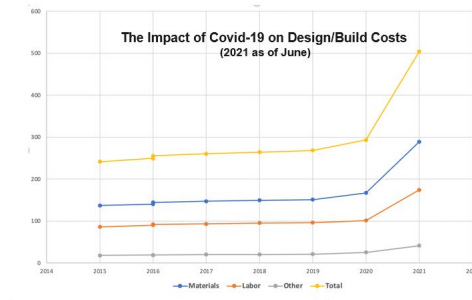
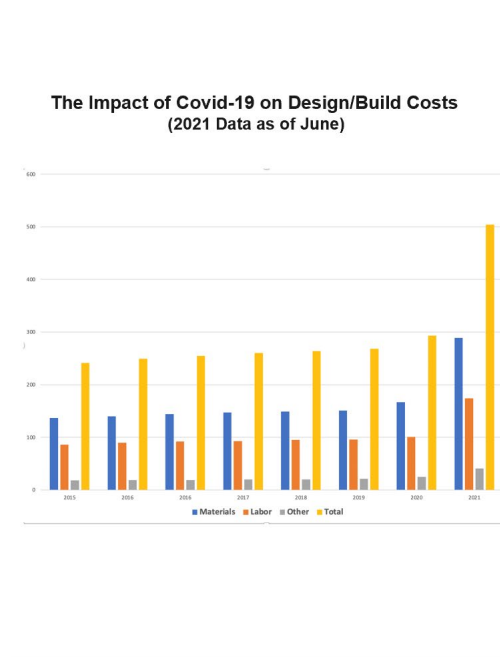


Adapted from [Visual Hierarchy, Gutenberg Diagram, F & Z Pattern](#).

- Think about scale and impact.
 - Why do these visualizations better support the story?

Data Visualization Exercise: Scale and Impact

Which of the following three charts do you think works best to tell the story that Covid-19 drove costs up for NAVFAC and the NAVY?



Use the space provided here to explain why.

A NAVFAC Example: Tell a Story Using Data Visualization

Here is a hypothetical scenario: NAVFAC is tasked to present three COAs to the CNO to decide where to construct a new R&D facility for missile technology and laser weaponry.

You've been asked to present the variable costs of land, regional design/construction costs and the current average cost of environmental protection compliance in the three locations under consideration. You're asked to present the pros and cons of three options for locating a new Navy R&D facility. Your audience is the CNO and their team, who have narrowed the choice to three and who must make a decision involving hundreds of millions of dollars. They've asked you to compare and contrast three variables for constructing a 70,000 square-foot facility on 500 acres of industrial land: the cost of land, the cost of building and the costs of environmental protection compliance.

1. Identify the purpose. Use the space provided here to capture your thoughts.

2. Know your audience. Use the space provided here to capture your thoughts.

As of June, 2021 500 acres/40,000 sq.ft.)	Cost per acre: Industrial Source:	Avg. Construction per sq. Ft. Source:	Environmental Complexity (time/costs avg per acre) Source:
Location A	\$17,800	\$2,300	\$25,000
Location B	\$17,600	\$2,450	\$19,000
Location C	\$20,100	\$2,670	\$24,000

Location A				Location B			
(\$100s)				(\$100s)			
	Land cost \$	Build costs	Environmental		Land cost \$	Build costs	Environmental
	per acre	(\$ per sq.ft)	\$ per acre		per acre	(\$ per sq.ft)	\$ per acre
2010	11,900	2,012	170	2010	13,000	1,990	80
2015	12,800	2,070	190	2015	14,100	2,120	120
2020	14,500	2,131	220	2020	16,000	2,190	170
2025	18,000	2,238	275 (projected)	2025	22,100	2,480	220 (projected)

Location C			
(\$100s)			
	Land cost \$ per	Build costs	Environmental
	acre	(\$ per sq.ft)	\$ per acre
2010	15,800	2,190	210
2015	16,700	2,200	210
2020	16,900	2,350	220
2025	14,000	2,350	220 (projected)

* All numbers in US Dollars

Data Management: The Storytelling Method

Notional data, for illustration only

3. Using the notional data above, identify and organize your data. Use the space provided here to capture your thoughts.

4. *Having analyzed the data, how can you tell a compelling and honest story in the simplest way possible? Use the space provided here to capture your thoughts.*

Final Exercise:

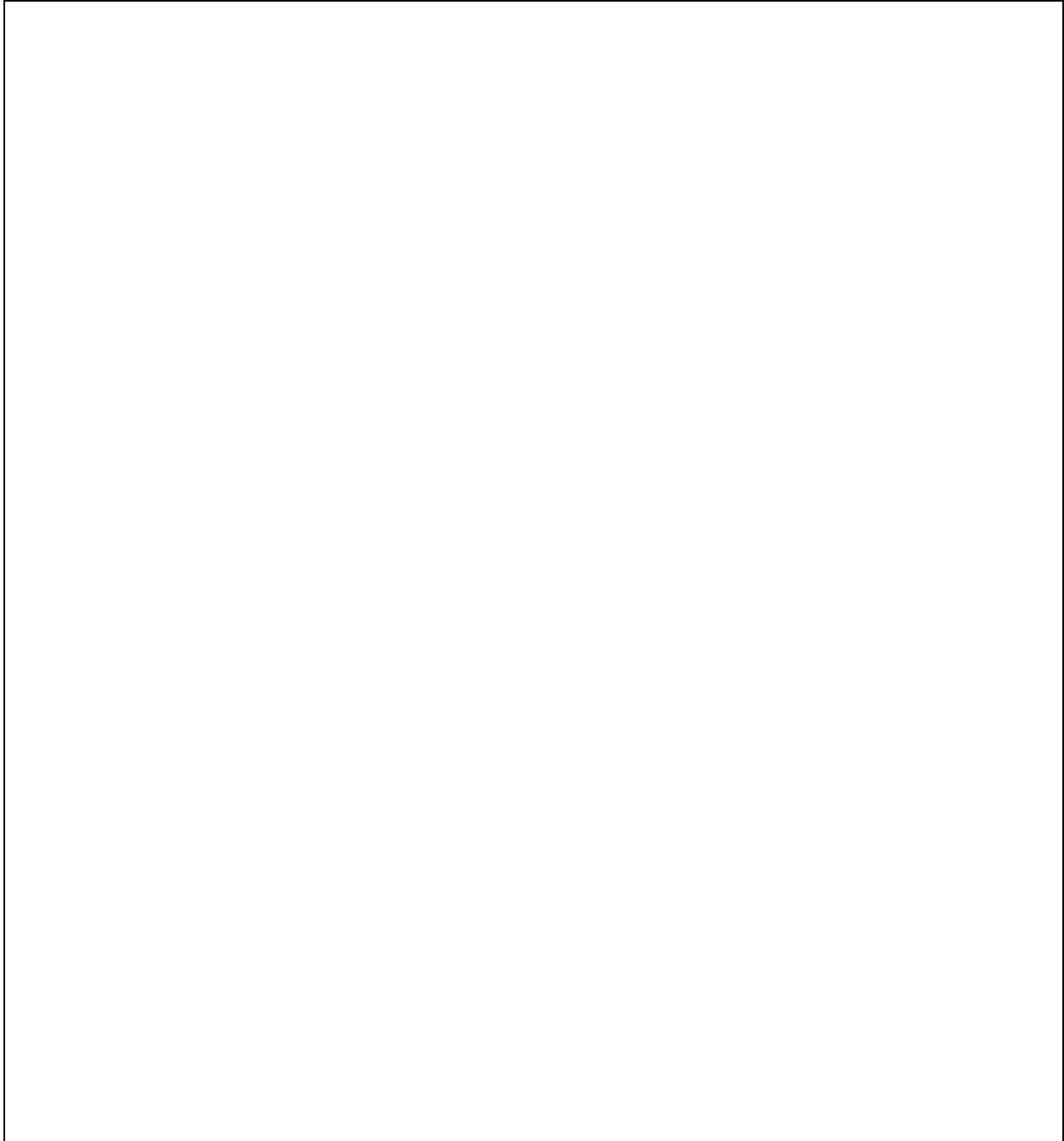
NAVFAC OFFICIAL PUBLIC NOTICE: Low-level Radiological Material excavated at former Naval Station Treasure Island.

On September 10, 2019, a degraded low-level radiological item was encountered at 3 to 13 inches below ground surface and beneath 10 inches of concrete outside the entrance of occupied residential unit 1203-A.

The maximum radiation exposure reading in direct contact with the degraded material was 300 microrentgen per hour ($\mu\text{R/hr}$) while the maximum radiation exposure reading at 30 centimeters (cm) was 20 $\mu\text{R/hr}$. This equates to an exposure of 13 $\mu\text{R/hr}$ in ambient air after accounting for the average Treasure Island background (naturally occurring) radiation exposure rate of 7 $\mu\text{R/hr}$.

This means if a person was directly exposed to this unearthed degraded material for one hour per day for one year, the total accumulated dose over that year would be 4.7 millirem (mrem) which is about the average dose (4 mrem) a person receives from a cross-country flight from San Francisco to Washington, D.C.

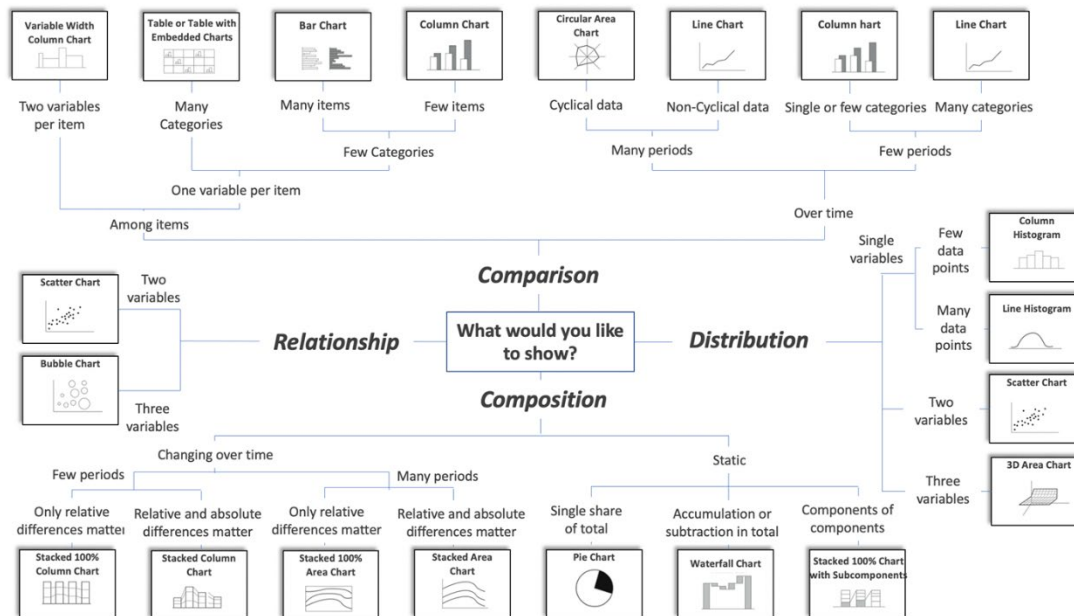
How would you tell this story visually? Use the space provided to capture your response. Use the additional tools below to help you.



Additional Tools

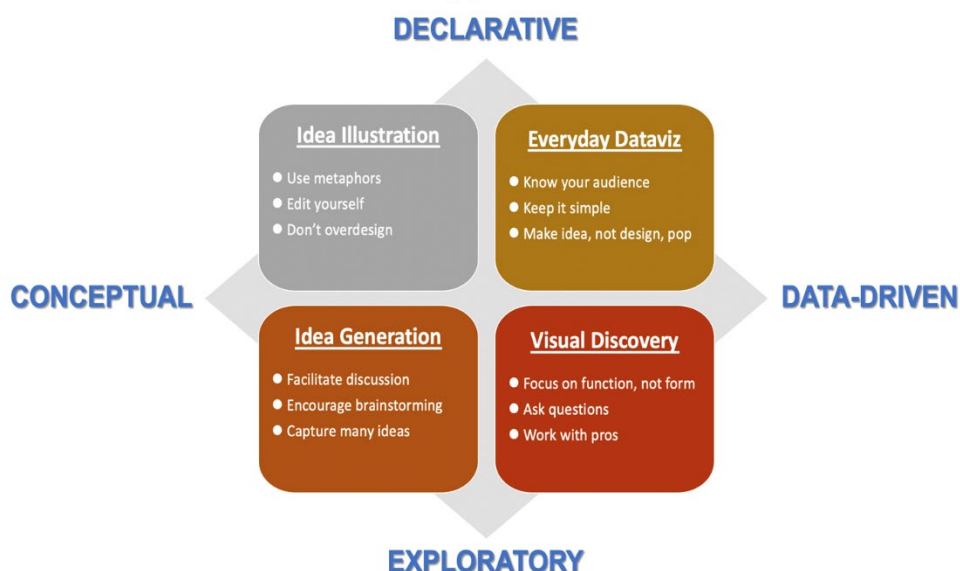
Chart Selection Guide

Here is a chart that will guide you to selecting the correct graphic for your data based on your broader purpose.



Concise Guide to Visualization

Here is another great resource to help you in identifying your purpose. It's a bit more abstract than the previous chart.



Contact Information

BD17 Contact Information: Write to us! We are always seeking to improve our learning and development products and encourage your feedback. Please email us with your suggestions and we will incorporate them into future work. Additionally, we are available to answer any questions about the content you may have and provide additional resources to support your learning endeavors.

- NAVFACHQTotalForceDevelopment@navy.mil

Development Resources

Career Compass Resource Center: An online source of information that provides NAVFAC civilian employees access to professional growth and development opportunities.

- <https://www.navfac.navy.mil/ccrc>

To access more content specific to the **Technology and Data Management** competency:

- <https://www.navfac.navy.mil/technology-data-management>

Career Compass Catalog: an online tool which provides you with information to help you take ownership of your professional development. It identifies options to assist in planning and creating a successful career path within NAVFAC.

- <https://www.navfac.navy.mil/cc>

Course Credit

You will receive credit for participating in this course. Email the address below. Make sure to include all the following information:

Component	Include in Email
Address	W_NAVFAC_PRTN_NITC_NFI_ADMINS_US@navy.mil
Email Subject Line	Self-Certification – Data Management Storytelling Method
Course Name	Data Management: Storytelling Method
Course Completion Code	5EkxQe

Or, if you have a smart phone, you can scan in the QR code to generate the email with all the necessary information for self-certification. The QR code can be found in your workbook as well.

