**BOOK/CHAPTER INFORMATION:**

* **This book is divided appropriately into FOUR Sections with a total of 13 chapters.**
* **Chapter 2 has no hands-on labs.**
* **Chapters 8 and 12 are about Tableau Server and outside the scope of this class and will be skipped (self-study).**
* **Chapter 13 is a REFERENCE chapter. There are no hands-on labs, but there is also a list of references used in class at the end of this document.**
* **This leaves 10 chapters that are to be covered with labs. Ideally, chapters 1-5 can be covered on Day One (as chapter 2 has no labs), and maybe half of Chapter 6. On Day Two, the remainder of Chapter 6 with Chapters 7, 9, 10, 11, 13 (information on getting help) can be completed.**

**NOTES: BEFORE YOU BEGIN:**

The Tableau 2020.2 version is installed in the Downloads folder and needs to be executed on each student’s machine. Even after it is executed, the students will be asked every time Tableau is opened to Continue Trial.

**Be sure to go to the Windows “View” menu and select “File Name Extensions” and “Hidden Items”. Once we create the actual image that Bruce gives us, we will do this in advance. This is just a reminder.**

All files for this class will be located at ONLC’s GitHub repository. To access these files, perform the following:

1. Go to github.com/ONLC-ClassMaterials.
2. Click the repository named: Tableau Desktop Tips Tricks and New Features.
3. Click the green Code button
4. Click Download ZIP.
5. Unzip the file to locate the underlying directory: Tableau Desktop Tips Tricks and New Features Master.
6. Copy this master directory to the Desktop.

There are directions for these same file downloads on Page X at the beginning of the book for students to download directly as well. BUT, the Github location above is the only place that all the files are found in one location. The book is new and the two authors do not provide one place for all the needed files.

**NOTE: The Student Read Me manual contains some ADDED VALUE Labs. These are intended to assist and in some cases replace the labs in the book to better demonstrate concepts and techniques that are covered in the training book.**

**SECTION 1 – An Introduction to Tableau**

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**Chapter 1 – Catching up with Tableau 2019/2020**

Timing: Depends on the level of experience of the students overall. This chapter can be skimmed to give students an idea of topics that will be covered throughout the class or the instructor can go into more detail demos to provide excitement about the new techniques in the latest version of Tableau.

**Page 3**: Start by reading the bullet points that will be discussed in Chapter 1, with regard to new features and enhancements that Tableau 2019/2020 has to offer. Also, share with the students a link that they can use to check out Tableau’s ongoing new features. This link is also available in the StudentReference.docx file

<https://www.tableau.com/products/new-features>

**Page 4-5 (top)**: The enhancements continue with the students working on their very first lab to make use of the new

functions called MakePoint and MakeLine.

Timing: 5-15 minutes

Note: Students can copy calcs out of SOLUTION if they desire. Or they can create them from scratch.

MakePoint and MakeLine creates a nice line for points, without having to go through all the spatial calculations. On pages 6 and 7, the students are instructed to look at Map, Map Layers, to see the new layers included. The students can review these until the 15-minute lab time is completed. Be sure to include Style, Map Layers and Data Layers.

**Pages 9-10**: Introduces new dashboard action called “Change Parameter” It is a lukewarm attempt at getting students to understand this concept.

NOTE: This lab will be performed again in Chapter 7, but will make more sense at that time, because it will be more complete, in conjunction with other sheets on a Dashboard. For this lab, just complete as the book says, understanding a quick overview.

**ADDED VALUE LAB**: 30-45 min – This lab is going to help the students understand completely the new Change Parameters dashboard action. Also, the students will learn/review how to create custom icons and use them from within Tableau. It will also review parameters in general.

**Pages 12-13**: Add Show/Hide Button. A great lab to include either text or picture button which allows you to show or hide sections on the dashboard. Option: Go to the option button and see that you can make a text or image button.

**Page 13**: Replace Worksheets: Follow directions in the paragraph above the screen shot diagram.

**Page 14 (top)**: Other Improvements: Continue to use the ToggleButtonStart Workbook and demo each as written.

**Pages 14-19**: Gloss over Tableau Server and just explain that if their company has/is using Tableau Server, it too, has many new improvements:

* Mixed Content: Users can switch the way they view their Tableau Server Projects
* Ask Data: This is similar to other competitor’s products such as Power BI. It allows the user to type “free” queries in their own language to ask questions about data.
* Alerts: Tableau Server administrators can set up alerts to mitigate risk (such as their Tableau Server drive is 80% full)
* Device Preview: The devices section has grown in the latest versions of Tableau: Go to the dashboard of the ToggleStart project and show the students the device preview area. In Tableau Server, the users can view the Tableau objects with a longer list of devices
* Other Improvements: Just read through them. They are all part of Tableau Server. Tell the students that a new Tableau Server class will be offered next year.

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**Chapter 2 – Tableau Core**

Timing: Do not use more than 15-20 minutes on this chapter

There are no hands-on labs in this chapter. It is designed to familiarize students with new products in the Tableau suite of products and some key terms/concepts while working in Tableau. Here’s the important parts:

**Page 22**: Introduces two new products: Tableau Mobile (app) and Tableau Prep (data cleaning and data flow)

**Pages 22 (bottom)**: Through the end of the chapter, you need to gauge your audience and decide what you need to review. Mostly, the concepts are known, but this includes things students are confused about sometimes:

* twb vs. twbx files
* Dimensions vs. Measures
* Discrete vs. Continuous
* Live vs. Extracts

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**Chapter 3 – Getting Started with Tableau Desktop**

**Pages 30-40** (25 Min): Hav the students creating an easy set of three views and a quick dashboard. This should not be a challenge for any of them. And, it is a replica of the ToggleStart workbook they used in Chapter 1.

Tableau automatically puts filter actions into their dashboard with only a click of the Filter/Funnel. It is no longer needed to build an action into the dashboard to get this behavior.

After they finish this lab, take them to the Dashboard menu and show them that Tableau created this filter method for them. Have them click/edit the filter so they can have a look. The point of this is that they can also change the way the filter behaves if they desire.

Point out to the students that they need to click in a white area of the screen to get the full map again after the filter has been applied.

**Pages 41-43** LAB: Tableau for data exploration. Creating a Scatter Plot chart.

Timing: 5 min

**ADDED VALUE LAB (after page 43 lab): Adding the new Scatter plot to the existing dashboard and using it as a filter**

This will give students a second shot at using the new filter, and to see another filter action has been added to their dashboard

**ADDED VALUE LAB: Sets – Students will work in lab book**

Timing**:** 45-60 Minutes

This Added Value lab will take the students on a journey which will allow them to use the new Create Sets parameter for dashboards.

The concept starts out with a simple worksheet, outlining Top 10 Sales by State, using a simple Top 10 Set. This Set will later be replaced with a new “Combined Set” pill. One set has top 10 states, one set allows the user to dynamically add states to the top 10 set of data.

Later, the lab has them create another simple worksheet with ALL the states on it, and has them use the SHAPES card to eventually pick which states will show on the sheet and which will not.

They will also create a dashboard with the two worksheets on it, but they will create a Dashboard action which has them work with the new SET.

In the end, they will test the two sheets and see that initially, the left sheet has Top 10 Sales by State, and the States to Add view has red checks next to all the states.

When they click a state that is not already on the top 10 list, it will dynamically be added to the top 10 State list. And, if they select the white area, ALL the states, except top 10 will appear on the list.

The Sheet and Concepts surround “Top Ten”, but in the real world, they could name things like this “Top States for Sales”, not limiting it to a number.

**SECTION 2 – Connecting, Building and Sharing**

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**Chapter 4 – Connecting to Data and Simple Transformations**

Before the students start this chapter, which is basically all labs, the instructor should either do demos from scratch on each topic or open the solution and explain the labs including the hints from the student manual.

**ADDED VALUE LAB: Page 49 Timing: 20-30 Minutes**

This lab allows the students to create a custom SQL statement from an Azure SQL Database. They will take the Person.StateProvince table from 181 rows to 53 rows. Although in a real-world scenario, there would likely be more data, it is still a great lesson on using less data for better performance. They will also create a small Text Table view to demonstrate that they have only the US data from this data source.

When demonstrating this topic (your choice, before they do the lab or after), you should type the SQL statement incorrectly to show that Tableau won’t connect. You may also wish to do same when connecting to the database. It’s good for students to see that Tableau is highly secure and won’t allow connections that are not correct in any way.

Although there is a list of references at the back of the book, this lab has the students optionally visiting w3schools.com to see the Try It section under LEARN SQL.

**Page 50**: SKIP for now as Maps will be presented later in the book.

**Pages 51-55**:This lab covers Joins which are handled differently in the latest version of Tableau. The data sources are now created with Relationships and Joins should only be used under specific cases. This update should be covered here although there is no mention of it is this book as it is a new concept as of Tableau version 2020.2.

For more information, the instructor can read about the changes on [www.tableau.com](http://www.tableau.com) and searching “How Relationships Differ from Joins”. Overall, the instructor should be prepared to discuss this update with the students.

**Pages 55-61**:Includes many small labs to demonstrate the various data techniques:

* Data Duplication
* Union
* Data Interpreter
* Split
* Pivot

The labs in the book are satisfactory, however, the Student Lab Manual includes HINTS on each of those concepts to assist with creating a new sheet/view and to use the Text Table from Show Me so they can see the results of their data.

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**Chapter 5 – Building an Efficient Data Source**

**There is no STARTER file for Chapter 5 because the Student will create it.**

**Pages 63-72**: (STOP at Hierarchies).

Discuss all properties, data types, data source options, data customization options and formatting. Perform demos on formatting, Extracts, Refreshes, etc. Perhaps explain that in the real world, many companies may be using Tableau Server or Tableau Online and that data refreshes and extract management could, and probably are, handled by a Tableau Administrator.

For the purposes of this chapter however, the students will perform a series of ADDED VALUE LABS to demonstrate the use of Live and Extract Data and what happens when field names change or data changes.

Allow about 25 minutes for this lab, as they will be going in and out of the Excel file in the chapter and changing it.

THEN… The students should take approximately 30 minutes to finish the chapter as written in the book. Although not all of these concepts are new, the chapter shows new ways to use them because Tableau has had new menus and shortcuts created. The students will have had lots of experience up to this point on Sets and now they can see a different usage for them on a worksheet. And, they can see how the “tried and true” concepts work in the new version of Tableau

The directions in the book are good for the concepts but they don’t guide the students to create new sheets. The Student manual says this:

“LABS Pages 72-80 – Hierarchies, Groups, Sets and Bins – 30-45 Minutes (excellent, quick labs)

Labs work as written in the book. Create new sheets for each concept and feel free to play around with styles, fields, formatting, etc.”

So hopefully at this point, after the detailed directions, the students can create a new sheet per concept and practice with their new hierarchies, groups, sets and bins. Be prepared to help those who cannot understand and also offer the Solution file to them so they can see what was done.

Lastly, keep in mind that the Category field was renamed to “Categories” in the last lab. This will not hurt anything for the completion of the lab, but the pictures in the book refer to “Category”, so be prepared to tell them to move ahead.

**\*\*\*IMPORTANT – The Sample-Superstore versions are different from the “old” sample superstore in their book. So tell them to ignore the values pictured in the book on page 74. It has no effect on the lab. Their lab manual says this, but they may not read it.**

\*\*\*IMPORTANT – Page 80 has you using a field called “Number of Records”. In Tableau 2020, this field has been renamed to “Count” and will reflect the data source name and count. In this case: Orders(count). **Their lab manual says this, but they may not read it.**

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**Chapter 6 – Design Insightful Visualizations**

**CHAPTER 6 Datasets**

**Sample-Superstore.xlsx – This is a different version of the Sample Superstore file and includes or renames fields not in other files**

**Resume.csv**

**ParksInEngland.csv**

**TIMING: 60-90 Minutes – Students should do as many charts as they can during this time**

Trainers: This is a lab chapter. The concepts introduce a couple of new chart types or better ways to create the charts they know how to do. It uses the Marks card (not Show Me), so some students will benefit simply by graduating from Show Me to Manual creation. The flow of the Student Lab manual is excellent and the students will get a lot out of this chapter.

Here is the breakdown on the included files and what the students will do with them:

Files include:

|  |
| --- |
| \_MAC\_OSX Folder – includes a solution file for the lab using the MAC OS |
| Sample-Superstore.xlsx file ( |
| Resume.csv file |
| ParksInEngland.csv |
|  |
| WhatsNew\_Chapter6\_Solution.twbx – this file is a SOLUTION file which demonstrates the completed labs for the chapter (for student reference) |
| WhatsNew\_Chapter6\_Starter.twbx – this file is a STARTER file which is the starting point for the students. |

\*\*If students want to create everything from scratch, they can start with a blank file, name it, connect to Sample-Superstore in Chapter 6 files, and rename all sheet tabs. OR they can use the starter file in the Chapter 6 files.

(THE ABOVE INFO IS EXACTLY AS IT APPEARS IN THE STUDENT MANUAL)

\*\*Trainers: The Student Lab Manual contains charts that the book does not. So warn students in advance that the Student Lab Manual is the best option.

Pages 83-120

\*\*Demonstrate or Overview entire chapter before the Students begin this LAB chapter. You can open the SOLUTION file for this purpose

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**Chapter 7 – Powerful Dashboards, Stories and Actions**

Trainers: the concepts in here allow the students to work with each type of Dashboard action, including the new ones and the new features (update, save as new) on Stories

**CHAPTER 7 Datasets**

**Sample-Supertstore.xlsx – use the one in the Chapter 7 files**

**There are STARTER and SOLUTION FILES FOR THIS CHAPTER –**

**Timing: 60-90 Minutes**

**Everyone should start with the STARTER file. All the worksheets needed for their Dashboards and Story are already created:**

* **Profit by State - ter**
* **Profit by State**
* **Sales and Profit by Sub-Category**
* **Profit by Sub-Category**
* **Profit Evolution by Category**
* **Next**
* **Back**
* **Sales Comparison**
* **Drill Down**

**Trainers: there is a note in the Student Lab Manual (see below). The labs are great, but the directions are horrible. Be sure everyone knows… (in case they don’t read the Student Lab Manual)**

**STUDENTS: Please use the STUDENT LAB MANUAL for this chapter this covers pages 121-143**

**Trainers: You should overview entire chapter (just so students know where to find things and are familiar with the “lingo” of dashboards (sheets, objects, actions, etc). You can use the SOLUTION file to show them everything and then let them loose on the lab!**

**Chapter 8 – Publishing and Interacting in Tableau Server - SKIP**

**Students can go to** [**www.onlc.com**](http://www.onlc.com) **and look for a separate Tableau Server class:**

**Tableau Server Administration:**

<https://www.onlc.com/outline.asp?ccode=XTBS10>

**SECTION 3: Advanced Features**

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**Chapter 9 – An Introduction to Calculations**

**CHAPTER 9 Datasets**

**Superstore-with-Target.xlsx**

**There are STARTER and SOLUTION FILES FOR THIS CHAPTER – STUDENTS CAN EITHER CREATE A NEW TABLEAU WORKBOOK OR USE THE STARTER**

**TIMING: 30-45 Minutes**

**STUDENTS NEED TO USE THE STUDENT LAB MANUAL FOR THIS CHAPTER BECAUSE THE DIRECTIONS ARE NOT CLEAR IN THE BOOK**

Trainers: The Student Lab Manual says this at the beginning:

Students: You can create a calculation in Tableau in several ways. Through this chapter, try them all (your choice)

* Go to the Analysis menu and choose “Create Calculated Field”
* Right-Click an empty/white area of the Measures section and choose “Create Calculated Field”
* Next to the tiny grid view in the Data pane, click the arrow pointing down and choose “Create Calculated Field”

This covers pages: 173-186

This chapter should be taught by going over Calculations quickly. Most students by the time they come to this class will already know how to do them. However, this chapter does create some views and quickly gets the ideas of basic, quick and LOD calculations out to the students. It is worth the overview, even though the chapter is relatively short.

The only reason the lab is 30-45 minutes is because they have to type a couple of calculations out. They could optionally open the solution and copy them if you are running out of time.

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**Chapter 10 – Analytics and Parameters**

**CHAPTER 10 Datasets**

**Sample-Superstore.xlsx (use the one in Chapter 10 files)**

**TIMING: 45-60 Minutes**

Students can use the book, as the pictures are pretty clear, so if they are familiar with Analytics, they can just look at the pictures and read the text to re-create. But for detailed instructions, new features, hints and extras, they should use the Student Lab Manual.

Trainers: AFTER the students complete this lab, have a lab chat and go over some of the things the students will see in Describing and Modeling. They may not have taken the time to do this during the lab

This covers Pages 187-204

Students can always cut down time by copying and pasting parameters and calculations from the Solution, if they feel they are running out of time.

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**Chapter 11 – Advanced Data Connections**

**CHAPTER 11 Datasets**

**Sample-Superstore.xls (use the one in Chapter 11 files)**

**Reimbursement.xlsx (also in Chapter 11 files)**

**Target.xlsx(also in Chapter 11 files)**

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**There are no Starter files for this chapter, but there is a SOLUTION file. Students will start with an entirely new Tableau Workbook**

**TIMING: 45-60 Minutes**

Students should use the Student Lab Manual to complete the labs. However, at various points in the labs, the students are referred to look at pictures in the book from pages 205-213, in order to verify their steps.

This covers Pages 206-214

These labs will demonstrate three main concepts (which you will want to review before the Lab Starts):

* Cross-Database Joins
* Data Blends
* Wildcard Unions – **A new feature to Tableau and Tableau Prep Builder which allows the users to grab all the files in a specific directory, instead of having to get them one by one.**

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**Chapter 12 – Dealing with Security - SKIP**

**Students can go to** [**www.onlc.com**](http://www.onlc.com) **and look for a separate Tableau Server class:**

**Tableau Server Administration:**

<https://www.onlc.com/outline.asp?ccode=XTBS10>

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**Chapter 13 – How to Keep Growing Your Skills**

**There are no labs in this chapter, but instead there are references for you to continue your Tableau Growth!**

**Hope you enjoyed class!**

**REFERENCES FOR STUDENTS: (these are at the bottom of the Student Lab Book as well)**

For Class Materials:

1. Github.com/ONLC-classmaterials :
2. Find the Repository called: Tableau Desktop – Whats-New
3. Click the green “Clone or Download” button and save the .zip file

Book Author: Tristen Guillevin Tableau Public Website

<https://public.tableau.com/profile/guillevin#!/>

Want to keep up with Tableau’s Ongoing New Features?

<https://www.tableau.com/products/new-features>

Help for Custom SQL statements: Click on “Learn SQL” from the HUB menu on the left, once you have arrived”

<https://www.w3schools.com>

Drawing Tools for Tableau to create custom polygon files:

<https://drawingtool.powertoolsfortableau.com>