**Video Script: Section 2 Video 2 – drawing paths**

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| No. | Description | Action on screen | Narration |
| 1 | Introduction  (Outcome and why it is desirable)  This should give the viewer an idea of the outcome of the task at the beginning of the videos and set the stage and expectations of the viewer. | Opening slide | **In this video**, we are going to look at How to draw another type of line called a path |
| 2 | Context(Problem/Solution)  Present the viewer with a real-world solution and how the situation would pose as a challenge. It always helps to draw the viewer's attention using a use-case. Metadata template can be used here. |  | We’ve seen how geom\_line() connects data points from left to right by first sorting the x aesthetics. Sometimes the order of the data points is important, for example when tracking the movement of an object in the plane through time.  For this, we need to use geom\_path() which we will look at in this video. |
| 3 | Guidance (How to do it and how it works): |  | Geom\_path() works in a very similar fashion as geom\_line() but connects the data points in the order in which they are presented in the data frame. |
| 4 |  | Switch to RStudio, select and CTRL+ENTER to run the first lines until head(migratoryZebras) | Open ‘activity\_02\_02.R’ in RStudio.  Run the first few lines in the console, until ‘head(migratoryZebras)’. |
| 5 |  | In the console:  timestamp longitude latitude zebraID  1 2007-10-25 00:02:11.000 23.52362 -19.39153 Z3864  2 2007-10-25 01:01:49.000 23.52350 -19.39168 Z3864  3 2007-10-25 02:01:38.000 23.52346 -19.39165 Z3864  4 2007-10-25 03:02:18.000 23.52343 -19.39164 Z3864  5 2007-10-25 04:01:35.000 23.52343 -19.39154 Z3864  6 2007-10-25 05:02:16.000 23.52338 -19.39165 Z3864 | The data contains the location of 6 zebras over a period of time in northern Bothswana. |
| 6 |  | Select and run:  p <- ggplot(migratoryZebras, aes(x = latitude, y= longitude, color = zebraID))  p + geom\_path() + ggtitle("Zebra tracks, with geom\_path()")  A description... | Run the rest of the code in the console:  # plotting  p <- ggplot(migratoryZebras, aes(x = latitude, y= longitude, colour = zebraID))  p + geom\_path() + ggtitle("Zebra tracks, with geom\_path()") |
| 7 |  |  | Geom\_path() will connect each point with a line, in the order they appear in the data frame migratoryZebras, whose rows are already sorted by time.  Each zebra is associated with a different colour thanks to the aesthetics ‘color’. |
| 8 |  |  | You can see the meandering routes the zebras have taken over a period of time. |
| 9 |  | Highlight and run:  p + geom\_line() + ggtitle("Zebra tracks, with geom\_line()")  A description... | Using geom\_line() instead of geom.\_path() would not be appropriate in this context:  p + geom\_line() first sorts the datapoints by latitude (because it is mapped to the aesthetics ‘x’), which is nonsensical: zebra can go back and forth the same latitude at different points in time. |
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| 16 | Conclusion:The video concludes by showing the viewer that the goal has been achieved, and reminding them why they should be happy about that. A PowerPoint summary slide with the key points emphasized would make it easier for the viewer to remember what was covered in the video | Last slide of the PPT | We now know how to draw lines and paths, using geom\_line() and geom\_path() depending on the situation we are in.  In the next video, we’ll see how to make bar charts. |