Stage 1 Desired Results

ESTABLISHED GOALS

- Enhance the quality of charts in company's reports.
- Increase the number of employees who can read chart critically, recognized manipulative/dishonest charts.
- Increase the number of employees who can create good charts themselves.

Transfer

Students will be able to independently use their learning to…
What kinds of long-term, independent accomplishments are desired?

- T1. Critically analyze the charts they see to determine its trustworthiness and potential improvements.
- T2. Use the understanding about chart design executions and context-awareness to create good charts.

Meaning

UNDERSTANDINGS

Students will understand that…
What specifically do you want students to understand?
What inferences should they make?

- M1. Chart is a powerful way to communicate because of the visual advantage. With power comes responsibilities.
- M2. A good chart is the one which is *honest*, *context-aware* and *well designed.*
- M3. A chart is context-aware when the audience can grasp its meaning quickly (10 seconds) and either be persuaded or start meaningful discussions.
- M4. A chart is well-designed when it is accurate, simple, clear, visually pleasing.

ESSENTIAL QUESTIONS

Students will keep considering…
What thought-provoking questions will foster inquiry, meaning making, and transfer?

- Is this chart trustworthy?
- Is this chart well-designed?
- What is the best way to create a chart that serve my idea and context?

Acquisition

KNOWLEDGES

Students will know…
What facts and basic concepts should students know and be able to recall?

- K1. The popular ways charts can misrepresent the truth – either accidentally or on-purpose
- K2. The types of chart that best served the type of data you want to show (comparison, data over time, distribution, composition, relationship, location)
- K3. The visual design checklist for each visual element (structure, axis, labels, highlight)

SKILLS

Students will be skilled at…
What discrete skills and processes should students be able to use?

- S1. Using Microsoft Excel to create different kind of charts quickly to explore the data.
- S2. Using Microsoft Excel to format each visual element in a chart.
- S3. Applying the process of Discuss – Sketch – Prototype to come up with good chart design.

Stage 2 - Evidence	
Evaluative Criteria	**Assessment Evidence**
- The visual design checklist - The guideline on choosing chart types - The visual quality of the charts being produced	**PERFORMANCE TASK(S):** - P1. You are given 5 example charts. Produce an exact copy of those charts using the given data in Microsoft Excel 2016. - P2. (Work in pair) You are the data analysts of a mobile game development company. You had examined the data coming from various sources regarding the business performance of a mobile game and discovered 3 major insights based on 3 streamlined data tables. Now you need to present those insights to the game manager who will decide on how to use the marketing budget (to market the game) and production budget (to develop new features in the game). The meeting is scheduled for 30 minutes only. Please prepare 3 charts that best represent your finding to the game manager using Excel. The charts should have the appropriate type for the insight and satisfy all points in the visual design checklist. If there are points which the charts do not agree with the checklist, there should be a logical explanation for the design choices.
-	**OTHER EVIDENCE**: - A group discussion and presentation to identify why the example charts are dishonest/manipulative - A group-based competition to match the type of data/insight to the best type of charts - Individual quizzes to identify poorly-designed elements in example charts

Stage 3 – Learning Plan

Summary of Key Learning Events and Instruction

- **Module 1** – The power of charts. What are the characteristics of good charts?
    1. (M1) Show some examples of powerful charts that changed history. Facilitate audience discussion on why chart is such a powerful way to think and communicate.
    2. (M1, K1, T1) Show a series of dishonest charts and ask the audience to identify Why. Conclude on the first rule of good chart: be honest.
    3. (M2, M3, M4) Show the other two dimensions (design-execution and context-awareness) and ask the audience to reason on which one is more important and why.
- **Module 2** – The grammar of charts.
    1. (T1, K2) Group-based game to match the type of data insight to the right kind of chart, with presentations.
    2. (K2, S1) Instructor's demonstration of the process to create basic types of charts (bar, stacked bar, line, scatter, pie) in Excel.
    3. (S1, S2) Formative Assessment P1: Produce exact copies of example charts.
    4. (T1, K3) Build the visual design checklist together by discussing on a series of pair of charts based on the same datasets and identify why some are better than the others.
    5. (K3, S3) Instructor's demonstration of the process to improve the visual design of the charts in Excel.
- **Module 3** – The process to create good charts
    1. (S3, K2) Introduction and demonstration of the Discuss – Sketch – Prototype process.
    2. (T2) Final Assessment P2: Work in pair to practice the process and create good charts