# Fix the chart

**Build the lie, name the trick, save the honest version** Names _____

A misleading chart is photo mode for data: the match is the same, every number is true, and the picture still lies. In each case you take the misleading photo first, then you fix it. Work in Superset → **Charts**, dataset `games_clean` (database `Dades classe`, schema `public`). Pairs, one PC; swap the keyboard at each case.

## Reference · five tricks

| Trick | Photo mode | How to spot it | Honest version |
|---|---|---|---|
| **Truncated axis** | Zoom | The bars do not start at zero. Small gaps look huge. | Bars start at zero. Always. |
| **Cherry-picked range** | Crop | The dates start or end exactly where it suits the headline. | Show the whole range, or say why you cut it. |
| **Dual axes** | Forced perspective | Two Y scales. Where the lines cross depends on the scales, not on the data. | Two charts, one above the other, same X axis. |
| **3D and crowded pies** | Camera angle | Slices at the front look bigger; more than five slices cannot be compared. | Flat, five slices or fewer; otherwise sorted bars. |
| **Bad colour** | Filter | A rainbow on ordered values, red against green, colours that mean nothing. | One hue, darker = more. Colour only when it means something. |

**Lie factor** (Edward Tufte, 1983) = size of the effect shown in the chart ÷ size of the effect in the data. An honest chart is close to 1. **On colour**: about 1 in 12 men and 1 in 200 women have a red–green colour vision deficiency.

## Case A · “Hit games are in another league” (14 min)

| Step | Do this | You should see / write |
|---|---|---|
| 1 | New chart on `games_clean`, chart type **Bar Chart**. **X-axis**: `owners_tier`. **Metrics**: **Simple** → column `metascore`, aggregate `AVG`. **Create chart**. | Three bars. |
| 2 | The lie: **Customize → Chart Options → Y Axis** (the last block of the tab): tick **Truncate Axis** and set **Axis Bounds** to min `65`, max `80`. Screenshot. Then hover **Truncate Axis** and the ⓘ that appears next to it. | Superset says: _____ _____ |
| 3 | Measure on the screen, with a ruler or by counting grid lines: `Hit` bar against `Niche` bar. (3 times taller is 200 % taller.) | _____ times taller<br>= _____ % taller |
| 4 | The fix: untick **Truncate Axis**, clear the bounds. Tick **Show Value**. | `Hit` _____ `Mid` _____ `Niche` _____<br>`Hit` is _____ % above `Niche` |
| 5 | Lie factor: the per cent of step 3 ÷ the per cent of step 4. | _____ ÷ _____ = _____ |
| 6 | Title: a finding the data supports. **Save** → `UT3 · Average Metascore by owners tier`. | Your honest title: _____ _____ |

## Case B · “Game prices in free fall” (11 min)

| Step | Do this | You should see / write |
|---|---|---|
| 1 | Open `UT3 · Games released per year`. Change the metric to `AVG(price)` (**Simple** → `price`, `AVG`). **Update chart**. | A line of average prices. |
| 2 | The lie: **Filters** → `release_year` → **Greater or equal (>=)** → `2013`. **Update chart**. Screenshot. | First point _____ Last _____<br>Fall: _____ % Trick: _____ |
| 3 | The fix: remove that filter. **Y Axis Format** `$,.2f`, axis titles. | 2004 _____ 2018 _____<br>Change: _____ % Peak year _____ |
| 4 | Honest title. **Save → Save as...** → `UT3 · Average price per year`. Do not overwrite your chart of games per year. | Your honest title: _____<br>_____ |

## Case C · “The Steam catalogue by year” (7 min)

| Step | Do this | You should see / write |
|---|---|---|
| 1 | New chart, chart type **Pie Chart**. **Dimensions**: `release_year`. **Metric**: `COUNT(*)`. **Create chart**. | How many slices have a label? _____ |
| 2 | Without hovering: what share of the catalogue was released in 2012? And in 2009? Then hover the two slices. | Guess: 2012 _____ % 2009 _____ %<br>Real: 2012 _____ % 2009 _____ % |
| 3 | The fix: build nothing. Which of your saved “UT3 · “ charts shows the same numbers honestly? | Chart: _____<br>Its job: _____ |

Why was a pie the wrong tool? _____

## Two questions on paper

1 A line chart of body temperature has a Y axis from 35 to 42 degrees. A lie or not? Why is a cut axis different in a line and in a bar?

_____

2 Which of the five tricks could you do **by accident** in Superset, and how would you notice?

_____

**Done when** Two honest charts saved as “UT3 · ...” · every blank is filled. **Fast pair?** One more honest sentence for Case A: how many `Niche` games have a Metascore at all?

**Stuck?**

- **Case A: the bars do not move**: **Truncate Axis** is not ticked, or you did not leave the bounds box with Tab or Enter.
- **Case A: the three bars are the same or the chart is empty**: the metric must be `AVG(metascore)`.
- **Case B: no “>=” operator**: **Filters → Custom SQL** → `release_year >= 2013`.
- **Case C: the legend has an entry `<NULL>`**: the one game with no release date. It is real; leave it.

**At home** Monday is the assessed practical. Reread the decision table (13/01) and the six knobs (18/01), and make sure you can build each of the five chart types from memory.