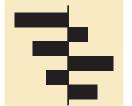
### Deviation

Emphasise variations (+/-) from a fixed reference point. Typically the reference point is zero but it can also be a target or a long-term average. Can also be used to show sentiment (positive/neutral/negative).

**Example FT uses** Trade surplus/deficit, climate change

### Diverging bar



A simple standard bar chart that can handle both negative and positive magnitude

# Diverging stacked bar



Splits a single value into two contrasting

components (eg male/female).



The shaded area of these charts allows a balance to be shown either against a baseline or between two series.

Visual

money with the Financial Times.

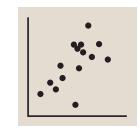
a login by scanning here.

# Correlation

Show the relationship between two or more variables. Be mindful that, unless you tell them otherwise, many readers will assume the relationships you show them to be causal (i.e. one causes the

Example FT uses Inflation and unemployment, income and life expectancy

### Scatterplot



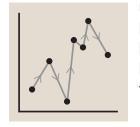
The standard way to show the relationship between two continuous variables, each of which

### Column + line timeline

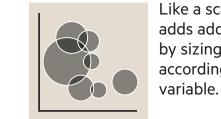


and a rate (line).

### **Connected scatterplot**

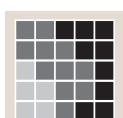


Usually used to show how the relationship between 2 variables has changed over time.



Like a scatterplot, but adds additional detail by sizing the circles according to a third

### XY heatmap



A good way of showing the patterns between 2 categories of data, less effective at showing fine differences in amounts.

Use where an item's position in an ordered list is more important than its absolute or relative value. Don't be afraid to highlight the points of interest.

Ranking

Example FT uses Wealth, deprivation, league tables constituency election results

### Ordered bar



Standard bar charts display the ranks of values much more easily when sorted into order.

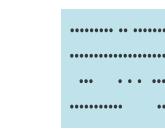
### **Ordered column**

See above.

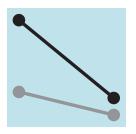


Use when there are big variations between values and/or seeing fine differences between data is not so

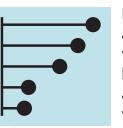
### Dot strip plot



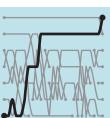
Dots placed in order on a strip are a space-efficient ... method of laying out ranks across multiple categories.



Perfect for showing how ranks have changed over time or vary between categories.



Lollipops draw more attention to the data value than standard bar/column and can also show rank and value effectively.



Effective for showing changing rankings across multiple dates. For large datasets, consider grouping lines using colour.

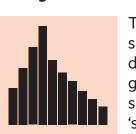
# Distribution

Show values in a dataset and how often they occur. The shape (or 'skew') of a distribution can be a memorable way of highlighting the lack of uniformity or equality in the data.

**Example FT uses** Income distribution, population (age/sex) distribution, revealing

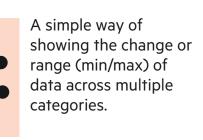
### Histogram

inequality

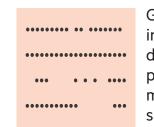


The standard way to show a statistical distribution - keep the gaps between columns small to highlight the shape' of the data.

### Dot plot



### Dot strip plot



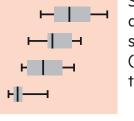
Good for showing individual values in a distribution, can be a problem when too many dots have the same value.

### **Barcode plot**



Like dot strip plots, good for displaying all the data in a table, they work best when highlighting individual

### **Boxplot**



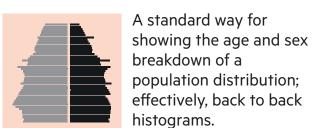
Summarise multiple distributions by showing the median (centre) and range of the data

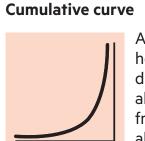
# Violin plot



Similar to a box plot but more effective with complex distributions (data that cannot be summarised with simple average).

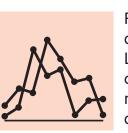
# Population pyramid





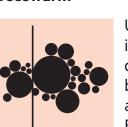
A good way of showing how unequal a distribution is: y axis is always cumulative frequency, x axis is always a measure.

# Frequency polygons



For displaying multiple distributions of data. Like a regular .... chart, best limited to a maximum of 3 or 4 datasets.

# Beeswarm

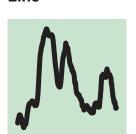


Use to emphasise individual points in a distribution. Points can be sized to an additional variable. Best with mediumsized datasets

# Change over Time

Give emphasis to changing trends These can be short (intra-day) movements or extended series traversing decades or centuries: Choosing the correct time period is important to provide suitable context for the reader.

### **Example FT uses** Share price movements, economic time series, sectoral changes in a market



The standard way to show a changing time series. If data are irregular, consider markers to represent

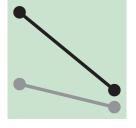
# Column

Columns work well for showing change over time - but usually best with only one series of

### Column + line timeline



A good way of showing the relationship over time between an amount (columns) and a rate



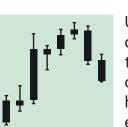
Good for showing changing data as long as the data can be simplified into 2 or 3 points without missing a key part of story.

### Area chart



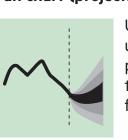
Use with care – these are good at showing changes to total, but seeing change in components can be very difficult.

# Candlestick



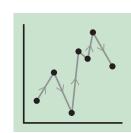
Usually focused on day-to-day activity, these charts show opening/closing and high/low points of each day.

# Fan chart (projections)



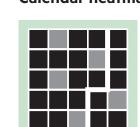
Use to show the uncertainty in future projections - usually this grows the further forward to projection.

# **Connected scatterplot**



A good way of showing changing data for two variables whenever there is a relatively clear pattern of \_\_\_\_\_ progression.

# Calendar heatmap



A great way of showing temporal patterns (daily, weekly, monthly) – at the expense of showing precision in

Great when date and

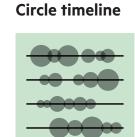
elements of the story

duration are key

# Priestley timeline



# in the data.



Good for showing discrete values of varying size across multiple categories (eg earthquakes by

Presents time on the Y

axis. Good for

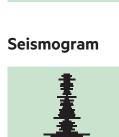
displaying detailed

time series that work

especially well when

scrolling on mobile.

# Vertical timeline



Another alternative to the circle timeline for showing series where there are big variations in the data.

A type of area chart;

# Streamgraph

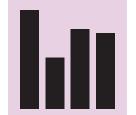


use when seeing over time is more important than individual values

# Magnitude

Show size comparisons. These can be relative (just being able to see larger/bigger) or absolute (need to see fine differences). Usually these show a 'counted' number (for example, barrels dollars or people) rather than a

Example FT uses Commodity production, market capitalisation, volumes in general



things. Must always start at 0 on the axis.



As per standard column but allows for multiple series. Can become tricky to read with more than 2

### Paired bar



# Marimekko

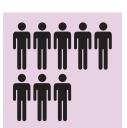


the same time – as long as the data are not too complicated

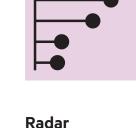
### Proportional symbol



Use when there are big variations between values and/or seeing fine differences between data is not so important.



Excellent solution in some instances – use only with whole numbers (do not slice off an arm to represent a decimal).



does not have to start a zero (but preferable). A space-efficient way of

make sure they are

organised in a way that

# makes sense to reader.



An alternative to radar charts – again, the arrangement of the variables is importan arrangement of the variables is important. Usually benefits from



or performance range

An alternative to

being able to count

data or highlight

bar/column charts when

Good for showing a

measurement against

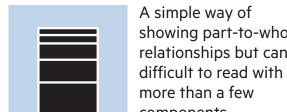
the context of a targe

# Part-to-whole

Show how a single entity can be broken down into its component elements. If the reader's interest is solely in the size of the components, consider a magnitude-type chart instead.

### **Example FT uses** Fiscal budgets, company structures, national election results

### Stacked column/bar



components. Marimekko A good way of showing the size and

proportion of data at

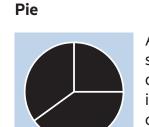
the same time – as

ong as the data are not too complicated

more than a few

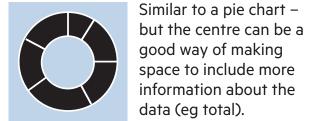
showing part-to-whole

relationships but can be



A common way of showing part-to-whole data – but be aware that it's difficult to accurately compare the size of the

### **Donut**



data (eg total). Use for hierarchical part-to-whole

relationships; can be

difficult to read when

there are many small

good way of making

Treemap



A way of turning points into areas – any point within each area is closer to the central point than any other

A hemicycle, often

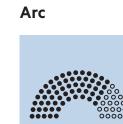
parliamentary

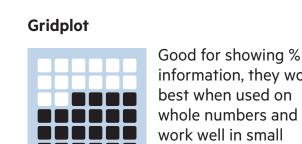
composition by

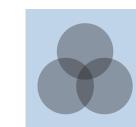
number of seats.

information, they work

used for visualising







Waterfall

for schematic representation.

Can be useful for

some of the

negative.

components are

showing part-to-whole

relationships where

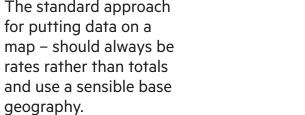
Generally only used

multiple layout form.

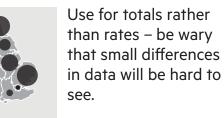
# Spatial

Aside from locator maps only used when precise locations or geographical patterns in data are more important to the reader than anything else.

### Example FT uses Population density, natural resource locations, natural disaster risk/impact, catchment areas, variation in election



# Proportional symbol (count/magnitude)



## Flow map



Contour map

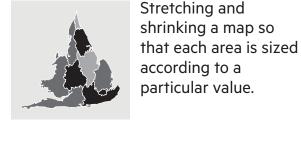


Converting each unit on a map to a regular and equally-sized shape – good for representing voting regions with equal value.

For showing areas of

equal value on a map.

## Scaled cartogram (value)



**Dot density** Used to show the location of individual events/locations make sure to annotate

any patterns the

reader should see.

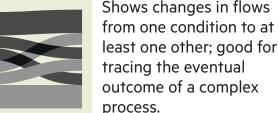


Grid-based data values mapped with an intensity colour scale. As choropleth map but not snapped to an

admin/political unit.

# Sankey

graphs.



Flow

Show the reader volumes or intensity of

movement between two or more states

or conditions. These might be logical

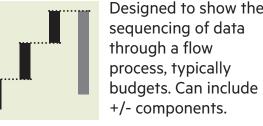
sequences or geographical locations.

Movement of funds, trade, migrants,

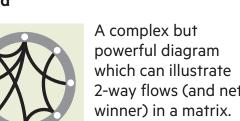
lawsuits, information; relationship

**Example FT uses** 

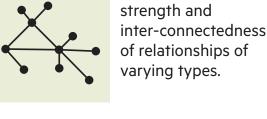
### Waterfall



### Chord



### Network



Used for showing the

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Geographical Society with IBG

Royal

Advancing geography and geographical learning

Inspired by the Graphic Continuum by Jon Schwabish and Severino Ribecca

FT graphic: Alan Smith; Chris Campbell; Ian Bott; Liz Faunce; Graham Parrish; Billy Ehrenberg-Shannon; Paul McCallum; Martin Stabe

ft.com/schoolsarefree

Vocabulary

Read the FT for free

Add fresh examples and insights to your work, make more

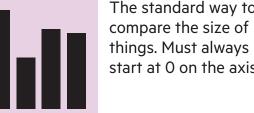
informed career choices, and feel more confident managing

Teachers can register your school and students can create

changes in proportions

calculated rate or per cent.

# Column



See above. Good when the data are not time series and labels have



See above.



# Isotype (pictogram)

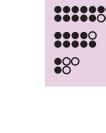


Lollipop charts draw more attention to the data value than standard bar/column -

### showing value of multiple variables – but



highlighting values.



individual elements is useful.

## Basic choropleth (rate/ratio)

