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**Unterrichtsmaterialien in digitaler und in gedruckter Form**

# Auszug aus:

*How to draw information from graphs, charts and tables.*
*Statistiken verstehen und interpretieren (ab Klasse 9)*

**Das komplette Material finden Sie hier:**

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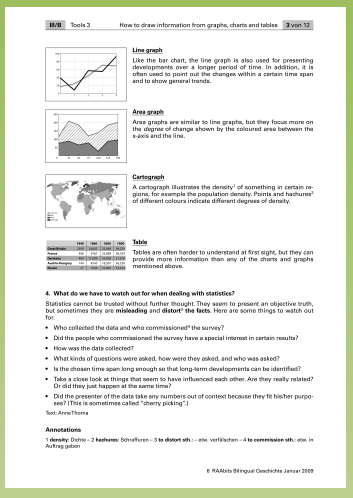

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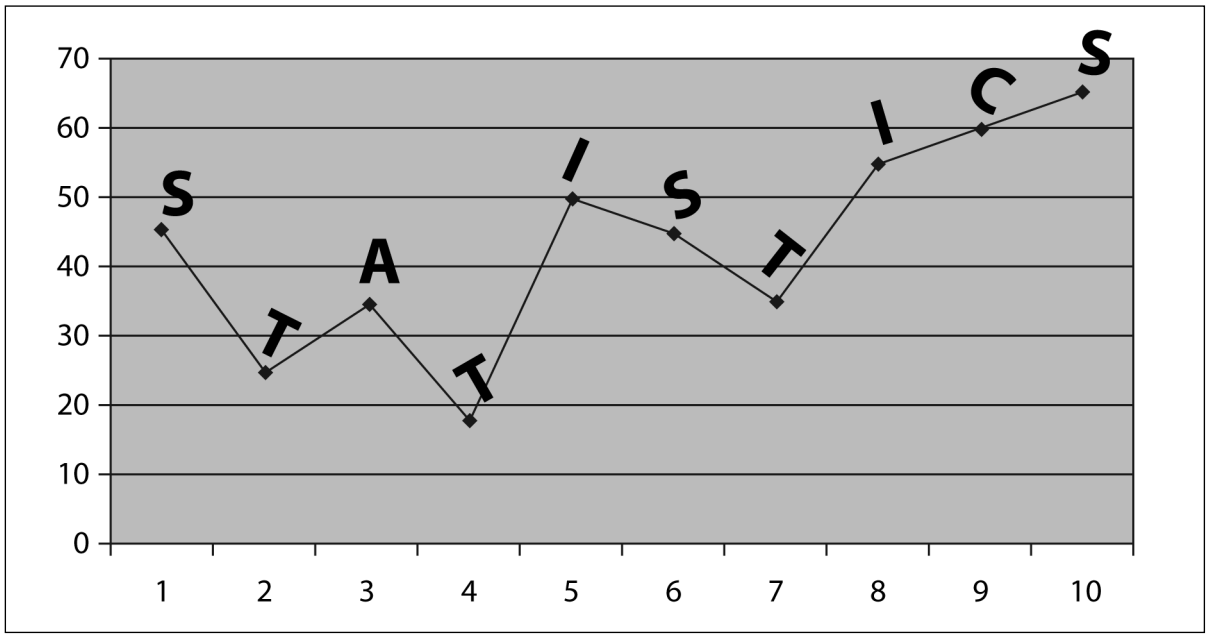
Text: AnneThoma

**Annotations**

1 **density:** Dichte – 2 **hachures:** Schraffuren – 3 **to distort sth.:** – etw. verfälschen – 4 **to commission sth.:** etw. in Auftrag geben

# **How to draw information from graphs, charts and tables.** Statistiken verstehen und interpretieren (ab Klasse 9)

Anne Thoma, Tübingen




Grafik: Dagina Burger

Line graphs are one way of presenting statistical material

„Ich glaube nur der Statistik, die ich selbst gefälscht habe", soll Winston Churchill einmal gesagt haben. Mittlerweile wird bezweifelt, dass dieses Zitat tatsächlich von dem britischen Staatsmann stammt. Trotzdem ist es noch immer im Umlauf, denn es spiegelt die Skepsis wieder, die den scheinbar objektiven Statistikdaten häufig entgegen gebracht wird. Können Zahlen lügen?

Auf welche Punkte bei der Auswertung von Statistiken zu achten ist, dass erfahren Ihre Schülerinnen und Schüler in diesen *tool sheets*. Es werden zentrale Begriffe eingeführt und erklärt (M 1) sowie Vokabelhilfen zur Verfügung gestellt (M 2). Den Lernenden wird ein dreistufiges Analyseschema an die Hand gegeben (M 3), das von der Beschreibung der Statistik über eine Interpretation zu einer Evaluation führt. Der Beitrag schließt mit zwei leichteren und einer schwierigeren Analyseaufgabe (M 4–M 6), für die jeweils eine Musterlösung zur Verfügung steht.

**Niveau:** ab Klasse 9

**Einbettung:** themenunabhängig einsetzbar

**Didaktische Schwerpunkte:** Statistiken beschreiben, analysieren und kritisch beurteilen können; einem Text Informationen entnehmen und diese in Form von Statistiken darstellen können

# M 1 Statistics: Basic questions

### 1. What are statistics?

Doing statistics means **collecting data** from various sources and **presenting it visually**. For example, if you wanted to know how many cars drive along your street on workdays between 7 a.m. and 5 p.m., you could sit down on the pavement with a pencil and a piece of paper and count them. You could even note down how many cars you saw between 7 and 8 a.m., 8 and 9 a.m., etc. This would allow you to discover the peak times[1] of the street traffic.

Of course, counting the cars on one single day would not give you a true picture of what the situation is like every day. You would have to come back and count the cars for many more days, weeks, months ... From the data collected this way, you would then determine the **average value**[2] as a kind of representative number of cars which drive along your street every day. This number can be seen as 100%. Other numbers can be expressed in relation to this 100% (or in relation to an **index** of 100).

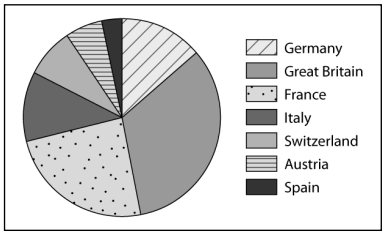
**Example:** If the average number of cars which drive down your street is 400, 400 would be 100%. 1 car would correspond to 0.25%. So if you counted 287 cars on one specific day, this number would indicate that there was 28.25% less traffic compared to the average value. On that day, the traffic went down to 71.75% of its average value.

### 2. Since when have people been interested in statistical research?

The **Industrial Revolution** played an important role in the establishment of statistical offices. In the 19th century, governments needed more and more information on how the economy was developing. They set up statistical offices to collect data on economic and social issues. It is therefore easier to do research on economic developments of the 19th and the following centuries than on developments of the time before.

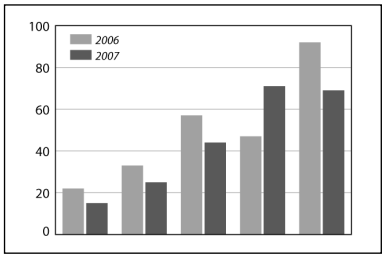
### 3. How can we present statistical data?

In order to present a set of data, you can choose from a variety of **graphs, charts and tables**. Which one fits best depends on the kind of data collected and on the point you would like to make when presenting it. Here are some examples that you have probably seen before.




**Pie chart**

A pie chart is a circle which is divided into segments. Each segment represents a certain share of the whole. The segments are often of different colours, and there is a key[3] that explains what the segments stand for.




**Bar chart**

A bar chart is used to show developments over a longer period of time. It can also be used to compare two or more elements at the same time.

### Annotations

1 **peak times:** hier: Stoßzeiten – 2 **average value:** Durchschnittswert – 3 **key:** Legende

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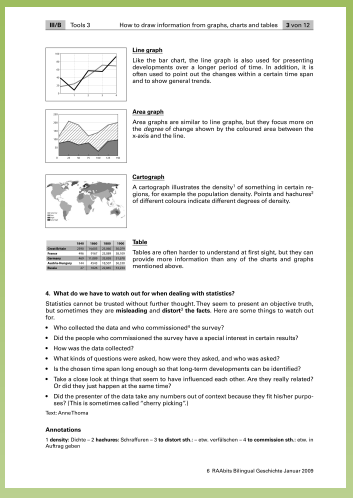

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