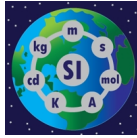


What are units?



Units are used to make measured values comparable. In order to figure out, if you or your friend has a greater distance to go to school, than you have to create a unit. The most common unit for distance in Europe is meter. Without a unit like meter, you cannot compare the two distances.

Units are not only used for distances. For every measurable effect, there is unit to describe the strength of the effect. Temperature, weight, force, energy, power, light, [humidity](#), pressure and so on. By using this units, it is possible to compare two values. In Greece it is warmer than in Germany. It is possible to come to this conclusion, because the temperature can be measured in both place by different people, who are using the same unit. They just need to call each other to compare the amount of their results.

Therefore you have to discuss about one unit, which is used by both to make the distances comparable.

Create your own unit

You can also try to use another unit, which is invented by you. Cut a rope as long as you want and define the length of this rope a new unit. Call it maybe: Matrix. The length of your rope is now 1 Matrix. Of course you can also tell somebody how many meters one Matrix is. Now you can measure every length in Matrix. Try to measure the something in Matrix, which is in your room now. How many time do you need the length of the rope to reach the door?

What are SI units?

Sometimes units are a combination of two or more units, which already exist. One example is

the speed of cars. The speed of cars is often measured in kilometer per hour (km/h). As you can see it is a combination of two units. Therefore speed is measure in a mathematical combination of one units for distance and one unit for time.

SI units are units, which are defined without using other units. They are not combinations of other units and they are the are international used units. It is like your Matrix-unit. You defined the length of the rope as one matrix. It is not a combination of already existing units.

A list of all base SI units:

| Quantity | Unit name | Unit symbol |
|---------------------------|-----------|-------------|
| length | meter | m |
| mass | kilogram | kg |
| time | second | s |
| electric current | ampere | A |
| thermodynamic temperature | kelvin | K |
| amount of substance | mole | mol |
| luminous intensity | candela | cd |