Gas and Units:

Gas, Ether, and GWei

Gas is a unit of cost for a particular operation a computer needs to execute, and it executes this instruction when we broadcast a transaction which contains an Ethereum program in order to run a dapp. For example, summing two numbers costs 3 gas. Multiplying them costs 5 gas. Storing a 256bit word into the blockchain costs 20000 gas, which means storing 1kb of data costs 640000 gas.

Just like the USD has cents, so too does ether have its own basic unit: wei. If we take wei as the basic unit of ether, we get the following table of definitions:

unit wei
wei 1
kwei / ada / femtotether 1.000
mwei / babbage / picoether 1.000.000”

gwei / shannon / nanoether / nano 1.000.000.000
szabo / microether / micro 1.000.000.000.000
finney / milliether / milli 1.000.000.000.000.000
ether 1.000.000.000.000.000.000
Tip: use this converter to convert between Ether units.

According to this informative site, the current average price of gas is 5 GWei (10 gigawei). Seeing as 1 GWei is one billionth of an ether, the aforementioned cost of storing a 1kb word is 640000 * 10, which is 6.4 million GWei. That amounts to 0.0064 eth which, at a price of $450 per ether, amounts to around $2.88.

Limit/Cost vs Price

Gas limit is the maximum amount of gas we’re willing to spend on a transaction. Most software we use to broadcast Ethereum transactions has the ability to auto-estimate the amount of gas that’ll be necessary to execute a function. It’ll usually suggest a figure right off the bat. For example, simple monetary A->B transactions usually need only 21000 gas. More complex ones which call specific smart contract functions might run into hundreds of thousands or even millions of gas. The spent amount of gas is called gas cost.

We, as a user, can modify the amount of gas we want to spend on a transaction and reduce it, but if the transaction runs out of gas during execution, we lose the gas we sent in. It’s been spent and the transaction is rejected. On the other hand, if we provide more gas than is needed, the rest is refunded to us. Hence, it’s always better to send more gas than you might need to execute a transaction.

Gas cost is the GWei price per unit of gas.

Thus, the total cost of an Ethereum transaction is actually the amount of necessary gas multiplied by the price in GWei per gas unit. This is the maximum transaction fee we’ll pay; any extra gas is refunded, so fees are often vastly overestimated.

Explained:

Gas limit is the maximum amount of gas we're willing to spend on executing the transaction. The amount of gas actually required (known only once the transaction has been executed) is called gas cost. Gas price is the price per unit of gas, expressed in GWei (or billionths of ether). The total cost of a transaction will be the product of gas cost and gas price, while the maximum transaction fee will be the product of gas "

"limit and gas price. The difference is refunded to the transaction's sender to keep the system fair and usable."

More on Gas and trans cost:

https://www.sitepoint.com/ethereum-transaction-costs/