# FORMULA GUIDE

Want to REALLY dig into the formulas? You have come to the right place! This document will provide the most current information about the workings of the formulas.

## TTPS

TTPS = (RX-R2)/((R1-R2)/MX)

TTPS translates to Traditional TerraCaching Point System and is designed to mathematically calculate how much effort is really required to hunt and find the cache. TTPS includes all of the traditional cache styles such as classic, virtual, puzzle, waypointers, event, offset, and other.

**RX** = The Raw Score of the cache we're computing TTPS points for. The Raw Score is the number of hours since the cache was posted divided by the number of finders the cache has had, plus 1. So, if a cache has been out for 6 Months, with 23 finders, the Raw Score would be 191.

**R1 =** The benchmark High Raw Score of the 100 nearest caches.

**R2 =** The benchmark low Raw Score of the 100 nearest caches. We use these benchmarks to soften the volatility of TPS swing.

**MX** = The maximum possible TPS points allowed. With the update in TC3.0 to include the 100 nearest caches, MX = 200.

Benchmarks are caches whose raw scores are near the highest or lowest scores of the 100 nearest caches. An offset is calculated by taking “F”, the number of caches with at least one finder and computing (F*.02) + 1. "F" is currently set at a constant of 3; we may adjust this later. All of the raw scores are then sorted, and the raw scores that are 3 positions away from either end of the list are used as the high and low benchmarks.

## TTPS Notes

**Note #1:** The Raw Score is NOT the same as the TTPS points. The Raw Score is a variable that's used later to compute the true TTPS points.

**Note #2:** If a "Missing?" or “Repair Needed” log has been posted to a cache more recently than the most recent "Found It" log, the cache is treated by the system as "possibly missing" and the raw score is frozen. It becomes unfrozen when one of the following occurs: the log is changed to a "Note" by it's owner, the log is deleted by the cache owner or sponsor, or a new "Found It!" log is posted to the cache after the "Missing?" log. The raw score is recomputed as if the "Missing?" log had never been posted in the first place once it is no longer frozen.

# FORMULA GUIDE

## LTPS

$$LTPS = (RX-R2)/((R1-R2)/MX)$$

LTPS translates to Locationless TerraCaching Point System and is generally meant to mathematically calculate how much effort is really required to hunt, and find, the cache. LTPS refers to Locationless TerraCaches and would include all of the sub types such as classic, puzzle, and other.

The good news is that Locationless TPS uses the same principals as TTPS. The biggest difference is how Benchmarks are calculated. An offset benchmark is calculated by taking "F", the number of caches with at least one finder and computing (F*.02) + 1. Currently the system uses all Locationless caches in the calculation.

## CTPS

$$CTPS = (RX-R2)/((R1-R2)/MX)$$

CTPS translates to Cyber TerraCaching Point System and is generally meant to mathematically calculate how much effort is really required to hunt, and find, the cache. CTPS refers to Cyber TerraCaches and would include all of the sub types such as, classic, puzzle, and other.

The good news is that Cyber uses the same principals as TTPS. The biggest difference is how Benchmarks are calculated. An offset benchmark is calculated by taking "F", the number of caches with at least one finder and computing (F*.02) + 1. Currently the system uses all Cyber caches in the calculation but future enhancements may become more specific to each communities home country.

## MCE (Measure of Cache Excellence)

The Measure of Cache Excellence is the collective rating of all of the finders of the cache. The system uses logic to completely keep your vote anonymous- even the cache owner or their sponsors cannot tell how you voted. The site depends on you being completely honest and speaking up with your honest first impression of the cache that you just found. A good cache is between 4 and 6, a really good cache is greater than 6 and an excellent cache is greater than 7. Caches that need improvement will fall below 3. Caches that are rated less than 2 suggest that the system should archive the cache. The mission of TerraCaching is to place unique quality caches; MCE is how the community of finders helps with that distinction.

# FORMULA GUIDE

On TC3.0, MCE is a nonlinear equation- it requires that a member has found the cache and it also takes into account that member's UCR. It strives to keep the impact of the initial finder's votes a secret. If there are less than 4 finders, the system utilizes logic that allows the initial finders to not worry about how they grade the cache. This creates an environment where each finder can give his or her honest opinion. So don't be surprised if the first finder causes your MCE to drop slightly when this finder actually might have graded the cache "Superb". Likewise if you are the finder don't be surprised if you grade the cache as Poor and then see the MCE go up. This is all part of the logic to protect the first finder's honest rating.

The site utilizes the grading history of each finder and it attempts to find people that are not real (sock accounts). It works the same for all cache types but does take into account the cache types.

The formulas are what make the site dynamic and engaging. The dependency of MCE on UCR is an attempt to recognize that as members place caches they are gaining experience, so this is taken into account on the MCE calculation. An important milestone in our Community is the "Certified TerraCacher Badge". The CTB is awarded to members who have found at least 9 TerraCaches and own 3 active TerraCaches with an MCE of at least 3.5 that have been found at least once each. CTBs are also expected to have a better appreciation of what a quality cache might include with their effort.

MCE is not the simple average of the ratings of the cache finders. One of the cool things about TerraCaching is that we try to separate the below average caches from the really good caches. A major goal is to have quality caches that are easily distinguished. However, quality is in the eyes of the beholder. Part of the MCE equation attempts to compensate for how each member grades caches compared to her or his history. So if you have a member that has only graded his/her found caches between Very Bad and Poor, then this will be accounted for in that finder's impact on MCE. Similarly if you have a member that only grades caches as Superb, then this will also be considered in the overall impact of the cache's MCE. These historical ratings become the member's "baseline" rating, and are adjusted back to average accordingly.

## UCR (User Contribution Ratio)

While the site counts on quality caches (the MCE rating), it also is very dependent on members of the Community placing unique caches that are not cross-listed on other geo game sites. By placing a TerraCache, you begin to build your UCR. Your UCR will grow significantly if you can place caches that members of the community believe are really good (greater than an MCE of 6).

# FORMULA GUIDE

What generally makes a quality cache is outlined in the Resource section of the Community Page. However, each local TerraCaching Community is unique, so quality is determined from location to location. So if you place caches that the local Community believes needs considerable improvement (resulting in MCE<4), your UCR will start to become negative. You have two options at this point: 1. Take the feedback as constructive and archive the cache, which will then neutralize this negative impact or 2. Make modifications to the cache and explain this as a note so that future finders will grade the cache more favorably.

10% of each of your sponsored user's UCR will also be added to your UCR. This means that 1% of the UCR of each person sponsored by your sponsorees will be added and so on. The idea behind this is to sponsor active members in your downline to build UCR. However, a measure of past activity does not necessary guarantee future performance. So a member that is not active today may become very active in the future. Don't drop people in your downline just because they might be taking a break.

UCR is calculated for each Cache Type- Traditional, Locationless, and Cyber. This is then summed and combined with your downline UCR to calculate a Total UCR. The system will only use your UCR and not your downline when determining your impact on MCE. It also segregates this impact for each Cache Type listed above. In other words if you have a very high UCR for cyber caches this will not impact the vote on traditional MCE.

We are still tweaking parts of the equations but they should stay relatively similar. Thanks for joining us! To read more about our Future Formula Plans, look in the resource section, or post an idea to us. We are looking forward to making this the most interactive caching community and value your feedback.