

Mezo Mats Calc

Standardized Formula for Total Mats Calculation

Variables:

M_{daily} = Daily mats earned from tBTC lock

D = Total number of days (e.g., 120 days)

M_{stBTC} = Amount of stBTC minted

T_{tBTC} = Amount of tBTC required to mint 1 stBTC (1.11 tBTC)

B_{stBTC} = Mats bonus per 1 stBTC minted (30,000 mats)

N_{stBTC} = Number of times stBTC is minted during the period (assumed to be 1 if minted once)

C_{BTC} = Amount of BTC worth of Curve LP tokens

S_{Curve} = Base score for Curve LP tokens per 1 BTC worth (1,100 mats/day)

$L_{\text{multiplier}}$ = Lock multiplier based on the lock duration: 16x, 9x, 3x

Formula:

1. Total Mats from tBTC Lock:

$$M_{\text{tBTC}} = M_{\text{daily}} \times D$$

2. Total Mats from stBTC Minting:

$$M_{\text{stBTC}} = \left(\frac{M_{\text{stBTC}}}{T_{\text{tBTC}}} \right) \times B_{\text{stBTC}} \times N_{\text{stBTC}}$$

3. Total Mats from Curve LP Tokens (with Lock Multiplier):

$$M_{\text{Curve}} = C_{\text{BTC}} \times S_{\text{Curve}} \times D \times L_{\text{multiplier}}$$

4. Final Total Mats:

$$M_{\text{total}} = M_{\text{tBTC}} + M_{\text{stBTC}} + M_{\text{Curve}}$$

Example Calculation

Using the example of 1.11 tBTC locked for 120 days, minting 1 stBTC, and holding 1 BTC worth of Curve LP tokens locked for 9 months (using the 16x multiplier):

Given:

$$M_{\text{daily}} = 16,000 \text{ mats/day}$$

$$D = 120 \text{ days}$$

$$M_{\text{stBTC}} = 1 \text{ stBTC}$$

$$T_{\text{tBTC}} = 1.11 \text{ tBTC}$$

$$B_{\text{stBTC}} = 30,000 \text{ mats/stBTC}$$

$$C_{\text{BTC}} = 1 \text{ BTC}$$

$$S_{\text{Curve}} = 1,100 \text{ mats/day per 1 BTC}$$

$$L_{\text{multiplier}} = 16 \text{ (for 9 months lock)}$$

1. Total Mats from tBTC Lock:

$$M_{\text{tBTC}} = 16,000 \times 120 = 1,920,000 \text{ mats}$$

2. Total Mats from stBTC Minting:

$$M_{\text{stBTC}} = \left(\frac{1}{1.11} \right) \times 30,000 \times 1 = 27,027 \text{ mats}$$

3. Total Mats from Curve LP Tokens (with Lock Multiplier):

$$M_{\text{Curve}} = 1 \times 1,100 \times 120 \times 16 = 2,112,000 \text{ mats}$$

4. Final Total Mats:

$$M_{\text{total}} = 1,920,000 + 27,027 + 2,112,000 = 4,059,027 \text{ mats}$$