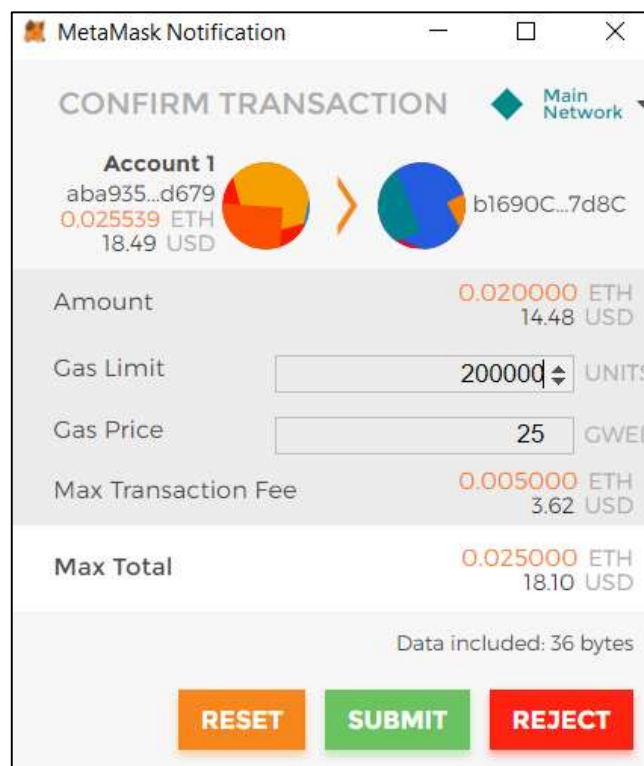# CryptoKitties –
Gas Price and Gas Limit

Note: CryptoKitties is a separate entity from the ethereum blockchain. They do not receive any of the transaction (gas) fees.

When you initiate a CryptoKitty transaction, that request goes to the ethereum blockchain where miners execute the transaction. The price you pay for their services is the "Tx fee" (transaction fee). It is made up of two parts: Gas Price and Gas Limit.

Gas Price (GWEI) is what you are offering to pay the miners for *each* operation they do to execute the smart contract.

Gas Limit is *how many* operations you allow them to use before they "run out of gas" and drop the transaction.

- Gas Price (GWEI) is a very small amount of ether. You convert it by moving the decimal 9 places to the left. For example, 25 GWEI = 0.000000025 ETH.
- Gas Limit is how much gas you will allow the miners to use. For CryptoKitties, a good amount is between 200,000 – 250,000.
- Gas Limit * GWEI = Maximum Tx Fee
  Ex. 200,000 * 25 GWEI = (200000*0.000000025) = 0.005 ETH

During times of high use, you have to pay a higher gas price to entice miners to prioritize your transaction. You can gauge approximately how much you need to pay by visiting https://ethgasstation.info/.

Your tx will take approx. this many minutes

if you pay this amount.

Note: Your actual transaction fee will be lower than what you set as your max. (But if you set your limits too low, your transaction will fail and you'll still have to pay the fee for the operations completed.)

I told them they could use up to 200,000 but they only needed 69,283.

They only charged me $0.34.

In Metamask, you can set your own Gas Limit and Gas Price. I usually use **250,000** for my Gas Limit, and check ethgasstation for my Gas Price.

If I want to buy a kitty and I'm afraid someone else might snatch it up, I pay a slightly higher gas *price* to get the transaction completed quickly. If I'm just breeding a few of my cats, I can set the gas price a little lower to save some money. (Don't set it too low or your transaction might get stuck in "pending".)

Happy CryptoKittying!