$$2 + 4 + 8 + 16 + \ldots + 124$$

$$1024 = ar^{n-1} = (2)\left(2^{n-1}\right)$$

$$512 = 2^{n-1}$$

$$2^9 = 2^{n-1}$$

$$9 = n - 1$$

$$n = 10$$

$$\sum_{k=0}^{9} \left(2\left(2^k\right)\right) = 2\left(\frac{(2)^{10} - 1}{2 - 1}\right) = 2046$$