Denote the force exerted on block 2 by the block 1 to be $F_{21}$.

If the acceleration is $a$, the equation of motion for block $m_2$ is given by

A) $F - \mu_1 m_1 g - \mu_2 m_2 g = m_2 a$.
B) $F_{21} - \mu_2 m_2 g = m_2 a$.
C) $F + F_{21} - \mu_2 m_2 g = m_2 a$.
D) $F - F_{21} - \mu_2 m_2 g = m_2 a$.
E) $F_{21} - \mu - 1 m_1 g - \mu_2 m_2 g = m_2 a$.

The net force $F_{\text{net}}$ on block 2 is $F_{21} - \mu_2 m_2 g$.
Since $F_{\text{net}} = ma$, we have $F_{21} - \mu_2 m_2 g = m_2 a$.
Answer B.

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