Conjecture: $\forall n \in \mathcal{Z}\,[5|n+n+1+n+2+n+3+n+4]$.

For an arbitrary n,

$n+n+1+n+2+n+3+n+4 = 5n+10 = 5(n+2)$ [basic algebra]

which is clearly divisibly by 5. Therefore, the conjecture is true.