56. (a) Choosing upward as the positive direction, the momentum change of the foot is

$$\Delta \vec{p} = 0 - m_{\text{foot}} \, \vec{v}_i = -(0.003 \, \text{kg})(-1.5 \text{m/s})$$

which yields an impulse of 4.50×10^{-3} N·s.

(b) Using Eq. 10-8 and now treating *downward* as the positive direction, we have

$$\vec{J} = \vec{F}_{\text{avg}} \Delta t = m_{\text{lizard}} \, g \, \Delta t = (0.090)(9.8)(0.6)$$

which yields $\vec{J} = 0.529$ N·s.

(c) Considering the large difference between the answers for part (a) and part (b), we see that the slap cannot account for the support; we infer, then, that the push does the job.