3. The change in momentum is the difference between the final momentum and the initial momentum. The lump of clay comes to rest, so its final speed is zero. The mass and initial speed are given. This is a one-dimensional problem, so a scalar equation may be used.

$$\Delta p = m\, v_f - m\, v_i$$

$$\Delta p = (0.1\ kg)\,(0) - (0.1\ kg)\,(9\ m/s) = -0.9\ kg\ m/s$$

Note that the change in momentum is negative, because the initial momentum was positive, and the final momentum was zero. This means that a force in the direction opposite to the initial motion was required to produce this change in momentum.