Three experiments investigated the effects of two variables: selective attention during encoding and delay between study and test on implicit (picture fragment completion and object naming) and explicit (free recall and recognition) memory tests. Experiments 1 and 2 consistently indicated that (a) at all delays (immediate to 1 month), picture-fragment identification threshold was lower for the attended than the unattended pictures; (b) the attended pictures were recalled and recognized better than the unattended; and (c) attention and delay interacted in both memory tests. For implicit memory, performance decreased as delay increased for both attended and unattended pictures, but priming was more pronounced and lasted longer for the attended pictures; it was still present after a 1-month delay. For explicit memory, performance decreased as delay increased for attended pictures, but for unattended pictures performance was consistent throughout delay. By using a perceptual object naming task, Experiment 3 showed reliable implicit and explicit memory for attended but not for unattended pictures. This study indicates that picture repetition priming requires attention at the time of study and that neither delay nor attention dissociate performance in explicit and implicit memory tests; both types of memory require attention, but explicit memory does so to a larger degree.