The banana peel is a byproduct with high nutritional value which is not used in the processing of fruit. It contains considerable amounts of fiber, protein and mineral that can be used in food manufacturing in order to enrich them. This study aimed to measure the impact of the partial substitution of banana peels flour (BPF) in a biscuit type cookie. The addition of BPF can result in changes in physical characteristics of the cookie as texture and colors, besides nutrition alterations. It can influence the sensory quality of the food and acceptability by the consumer. Cookies produced with 0, 10, 20 and 30% of the BPF were evaluated in the texture and colors. The texture was accomplished through the force required to break the cookie, indirectly measured by a texturometer. The resistance values were 77.6, 90.3, 99.7 and 109.0 N for the standard, 10, 20 and 30% of BPF respectively. The colorimeter was used to measure ΔE value that is the difference between white color and sample color. The ΔE was 44.4, 52.6, 56.4 and 58.7 for increasing amounts of BPF. The addition of BPF causes differences in the texture and color. The results showed that the increase resistance of breaking cookie and color intensity is proportional to the amount of banana peels flour addition.