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Testing the “five second rule” – a potential microbiology lab exercise.

The “5-second rule” states that it is safe to consume a piece of food that has been dropped on the floor, provided one picks it up within five seconds. Most students have heard of this rule which provides a hook for learning how we might test the rule. The goal of this project was to develop a simple and inexpensive method for evaluating the five second rule that could be incorporated into a beginning microbiology lab. Ideally the procedure would inspire students to ask new questions, propose hypotheses and test them. Overnight cultures of *Escherichia coli* were placed on a glass slides and allowed to dry. When the cultures were dry various objects (plastic beads, wood chips, sponges) were placed on the glass surface for various lengths of time. To detect transfer of bacteria from the slide to the object, the objects were put into nutrient broth or placed on an agar plate, and incubated overnight to detect growth of *E. coli*. As expected damp and more porous objects were more consistently contaminated compared to dry and less porous objects. Detection of contamination using a broth culture was easier to interpret. Additional objects were tried, but sterilization of those proved difficult. Overall the protocol developed is easy to carry out and was reproducible, both important aspects of a course lab exercise.