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Randomizing roaches: exploring the ‘bugs’ of randomization in experimental design.

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Summary: Understanding the roles of random selection and random assignment in experimental design is a central learning objective in most introductory statistics courses. This article describes an activity, appropriate for a high school or introductory statistics course, designed to teach the concepts, values and pitfalls of random selection and assignment using the not-easily-forgotten Madagascar hissing cockroach. Evidence is summarized demonstrating conceptual gains for students performing the randomizing roaches activity, and follow-up activities are suggested.

Classification: M60 K40 K50

Keywords: experimental design; hands-on activity; introductory statistics; cockroach

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