Fuzz Bugs!
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Math Topic: Data and Probability

Curriculum Competency and Content:
A. Use technology to explore mathematics (calculators, virtual manipulatives, concept-based apps)
B. Probability experiments (predicting a single outcome)

Grade Levels: Grade 4 in terms of content, but questions can easily be adapted up to Grade 7. It can also be adapted to lower grades (left alone, the games are recommended for American pre-K to Grade 2 students)
- Grade 4: pulling objects out of a bag
- Grade 5: representing single outcome as a fraction
- Grade 6: listing all possible outcomes to determine theoretical probability
- Grade 7: experimental probability with two independent events (Take a bug, put it back, take another bug)

Resource: Fuzz Bugs games, with original ideas from Crystal and Riley
Fuzz Bugs - Counting, Sorting, & Comparing
http://www.abcya.com/counting_sorting_comparing.htm?fbclid=IwAR2ksU1wj3ZpcBmimOQBBodyfakjd3tjULmnx6QMReOaQqEIa7YNHM-aRSY
Fuzz Bugs Graphing
http://www.abcya.com/fuzz_bugs_graphing.htm?fbclid=IwAR1R43H4F0oCLdqRzqQ25Dmtwq286b3S-R97vc4aBceyJEgvFwnY3QiNmMg

Description/tips for teacher:
Fuzz Bugs is a quick, fun game for learning and practicing Data and Probability skills. It is suitable at all age levels, if it is supplemented with the right questions. This activity stops students at various points during the game to ask them to provide additional information about the Fuzz Bug "data." The teacher can ask the questions or provide a worksheet. If students are playing on individual devices, answers will vary, so no one will feel left out. However, if the teacher is evaluating for correctness of answers, it would be less work to have students play in pairs/groups, or draw the Fuzz Bug distribution they receive, as it is random. Alternatively, the teacher could facilitate playing this game on one device as a class, so that all the results would be the same. (This still leaves opportunities for variation using cloze form questions such as "There are ___ more of the ___ coloured Fuzz Bugs than the ___ ones.")

Example: "Before we answer [the next question on the computer], can you tell me if it is likely or unlikely to catch a red fuzz bug, if I had dumped all these jars into a black bag and only took out one bug? … How come?"

"Hi there! Can you please help us catch these Fuzz Bugs? They escaped before we could write down our research, so we are very behind in the Fuzz Bug Laboratory."
"Wow, that was fast! Do you think you can help us catch up on our research, too? Some of the questions are already programmed into the computer, but we will have to just ask you the rest."