

# Lock Downs

New Mexico  
Supercomputing Challenge  
Final Report  
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#84  
Mesa Middle School

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Throughout our lives we will spend most of our time in school. In Las Cruces, a student will spend an average of 35 hours in school per week. Students should be able to feel safe in school. Our project focuses on how to improve our lock down procedure. We wanted to make a project that can reach out to the people who are in charge of our safety in hope that they will change how a lockdown situation is handled. My partner and I would like for students and staff to reach safety without putting in danger anyone else. When there is a lock down announcement, all doors close immediately. Anybody outside the building will be locked out and only will be let in if someone opens the door through the inside for them. Using our program, we would like to know if keeping the doors open for a short amount of time after the announcement would allow more students to reach safety inside a building.

The problem that is occurring in Mesa Middle School's lockdown procedure is that there is no place for a student to go if they are locked out of the building. When we have practice lockdowns, we noticed that students are risking their lives to open the doors for others when they should be getting to a safe place. When the lockdown announcement is made the doors lock and the only way to get into a building is if someone opens it.

Students are supposed to be getting into their classrooms and arranging into a hiding area where they can't be seen through any windows.

We would like to run a simulation where we have agents try to get into the buildings within a specific amount of time. While running different simulations, we will figure out how many seconds the school should keep the doors open after the announcement so students can get into classroom. While preventing the risk of students' lives due to having to open the door for the rest of the people outside the building. Our project will have a simulation on Star Logo Nova. We are working on a simple layout of our courtyard. We have agents in the courtyard and "inside" the buildings. Once we start the lock down procedure we will have the agents go inside the buildings in a certain amount of time before the entrances are "locked". We will change the time the agents will have to reach the building before locking the doors. When time runs out the agents will not be able to go inside the building. We know that by this time we are supposed to be done with the program but Starlogo is new to us and there are a lot of glitches. Luckily our mentor Susan Gibbs has helped us a lot since the beginning.

To solve this problem we have shared our ideas with our school principals. We also have been in contact with the Chief of Police, Jaime Montoya, to answer questions about lock downs and safety. Chief Montoya

referred is to a Wikipedia page that talks about the U.S. school shootings casualties from 2000 to 2010. This information allowed us to understand that anything can happen at school and that the more prepare you are the better off you are. We also learned that it would take an average of 50 minutes for the police department to reach the school. So it is important that we try to keep everyone safe until help can reach us.

Our project will allow us to come up with a better lock down procedure that will give students a chance to reach safety and not get left locked out. Our project will allow students to feel prepared for any safety threats that can happen while at school. We would like to thank our mentor Susan Gibbs for all her help and patience on this project. Also, we would like to thank our sponsor Traci Mikesell for allowing us to compete in the Super Computing Challenge. Finally we would like to thank our Las Cruces Police Department for providing us useful information. We thank you for your time and consideration in the Super Computing Challenge competition.