



## SOIL AND PLANT SCIENCE DIVISION

# Technical Soil Services

## Southwest Soil Survey Region

### **Tucson, Arizona, Major Land Resource Area (MLRA) MLRA Soil Survey Office (SSO)**

### **Rainfall Simulator for Abbie School Visit: Pima County, Arizona**

#### **Purpose**

The Tucson SSO staff provided a presentation on soil science at Abbie School in Tucson, Arizona. Abbie School is unique because it resides on a large plot of land in which the school creates and runs greenhouses, takes care of farm animals, and gives students the opportunity to grow produce and participate in greenhouse construction as a part of an urban farming course. The Tucson SSO staff gave students the opportunity to ask questions about soil as it pertains to an urban environment as well as observe and interact with a rain simulator to discuss how different substrates effect crop production and retention of water.

#### **Background**

During the initial presentation, Tucson SSO staff discussed why soil is important, what it provides for us, what it interacts with, and how understanding soils can help us make better educated land use decisions. Students asked questions about pore space of soil particle size classes, importance of soil texture in farming, and what a soil scientist does on a typical day. At the end of the presentation, students went outside to observe the rain simulator. The rain simulator contained separate substrates of bare sand, bare soil, bare soil with rock cover, bare soil with straw cover, and soil with grass clods growing out of it (figure 1). The Tucson SSO staff explained that the rain simulator would show the students how crop cover year-round positively impacts water infiltration and thus helps with soil health. After watching the rain simulation, the students asked questions about water infiltration and soil health.



Figure 1.—Demonstration of different substrate cover types and how they impact soil runoff or erosion and water infiltration.

## Key Outcomes

Using the rain simulator, the Tucson SSO staff elevated students' knowledge of soil science through a visual demonstration of the soils information discussed in the initial presentation. In addition to elevating students' knowledge of soils, the presentation helped develop a new relationship between the NRCS and Abbie School. In the future, Tucson SSO staff hope to come back and present more on the importance of soil in our urban landscape.