

Materials Science: Form and Function

Introduction

“Today is the day!” Angelina told her friends as they entered the classroom.

“What day?” asked Mylo.

“The day we get to plant the wildflowers!” Angelina replied.

“That’s right!” said Suzi, “Now that the rain has stopped, we can plant seeds for the wildflower garden in the dirt lot behind the school.”

“It was so nice for the high school students to come over and get the field ready for us to plant,” said Mylo as they walked with their class outside.

“I know,” said Suzi. “They worked very hard at turning over the soil.”

“Oh no!” exclaimed Angelina as the field came into sight. “There are already plants growing in the field where our wildflowers are supposed to go.”

“How did they get there?” asked Mylo. “We haven’t planted anything yet.”

“I don’t know,” said Angelina sadly. “I guess this means we need to do some work before we can plant.”

“And speaking of planting,” said Suzi, “look how big the field is! I don’t know how we are ever going to grow flowers over this entire area.”

“Well,” said Mylo, “plants are already starting to grow all over the area. They got there somehow.”

Their teacher explained that the high school students would come back later in the day to clear the field again. Only this meant they would have less time to plant the field before school let out for the spring break.

“How will we manage to plant the field so quickly?” asked Mylo.

“By using the design process, of course!” exclaimed Suzi.

“Let’s come up with a plan,” Suzi said. “Once we have a plan, we can design and build a model to spread seeds around the entire field. I guess the evaluate step will come when we see how well we can disperse the seeds.”

“Okay,” said Angelina. “Let’s figure out how to spread seeds over this entire area.”

“How do you think those plants got into our field?” Angelina asked. “Something or someone had to bring the seeds to the field.”

“I don’t know how they got here,” replied Suzi. “I am wondering how seeds even become plants.”

“Where do seeds come from?” asked Mylo.

“I don’t really know,” said Angelina. “I guess we have to explore answers to those questions before we can design a model to disperse seeds in our field.”

Mylo responded, “I think you’re right, Angelina. We need to learn some things about seeds before we can design a good solution.”

Can you help the three friends follow the engineering design process to solve the problem of spreading seeds over the large area? Can you answer their questions about seeds and plants?