Come explore with us! Soil erosion washes pollutants into streams and rivers and causes farmland loss Soil erosion can lead to landslides, like this one on a beach in England. Bloomberg Creative/Bloomberg Creative Photos/Getty Images Plus By Science Buddies April 5, 2024 at 6:30 am Objective: Find out if plants can reduce the amount of soil that is eroded from a hill due to rainfall Areas of science: Environmental engineering, geology, plant biology, environmental science Difficulty: Medium intermediate Time required: 2–4 weeks Prerequisites: None Material availability: Readily available Cost: $20–$50 Safety: No issues Credits: Ben Finio, PhD, Science Buddies (this project is an adaptation of a 2015 science project submitted by Riya Chaudhry) You are surrounded by soil every time you step outside. It seems like the world has plenty of it, so why would we need to worry about conserving it? It turns out that soil erosion, or the washing away of soil by forces like wind and water, is actually a big problem. It can cause loss of farmland as soil in fields washes away, as seen in Figure 1. It can pollute waterways by washing pesticides and fertilizers into them. It can even cause damage to human life and property by contributing to mudslides and landslides. So, soil erosion is definitely a problem. How can you help solve it? Soil erosion is partially caused by runoff, or water that flows over the surface of the ground after the soil is saturated, or unable to absorb any more water. One way to help combat soil erosion is through the use of plants. Plants have extensive root systems that can help “grab on” to soil and keep the soil clumped together. You can see this if you have ever pulled a plant out of the ground, like the clump of grass in Figure 2. Plants also absorb some of the water in the soil. These effects make it harder for water to wash away the soil. (Note that plants can also help block wind and therefore prevent wind erosion, but this project will test water erosion only.) In this project, you will set up a controlled experiment with “hillsides” made from small trays filled with dirt. Some of the trays will have seeds planted in them, and some will not. Once the plants are grown, you will simulate rain with a watering can. Do you think plants will help stop or reduce soil erosion? If so, by how much? Try this project to find out! Preparing Your Plants 1. Fill each of the six bread pans with soil, as shown in Figure 3. Leave a little bit of space at the top, so the soil is not flowing over the edges.