Flooding Simulation Model

DIRECTIONS

You will create four conditions on the model and collect data on the amount of runoff for each condition.

Step 1: Collect data from the undeveloped land condition.

1. Prepare the model. Cover the model with the three pieces of green cloth and place trees on the model.

Check that the black stopper is placed in the hole in the lake. Place the plastic container under the hole.

2. Prepare for the rain. Pour water into the cup labeled #1, filling it to the line. Pour the water into the cloud bottle.

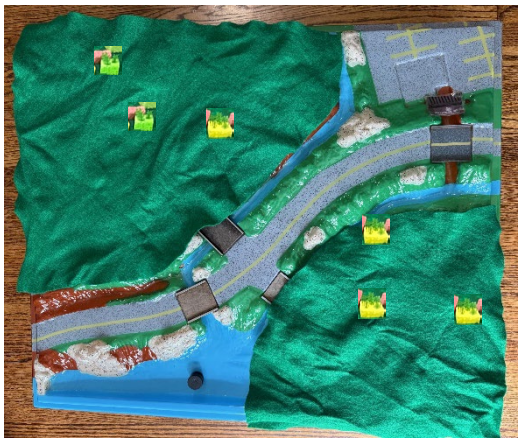
3. Rain on the model. Using the cloud bottle to pour rain evenly across the model.

4. Collect the runoff. Wait as the water collects in the lake. Remove the hole and drain the water into the plastic container under the hole. Pour the water into the cup labeled 1.

5. Record the data. Decide how to record how much water is in the cup. Leave the water in the cup.

Step 2: Collect data from the developed road condition.

1. Prepare the model. Remove the middle piece of cloth that covers the road. Add bridges to the road.



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Check that the black stopper is placed in the hole in the lake. Place the plastic container under the hole.

2. Prepare for the rain. Pour water into the cup labeled #2, filling it to the line. Pour the water into the cloud bottle.

3. Rain on the model. Using the cloud bottle to pour rain evenly across the model.

4. Collect the runoff. Wait as the water collects in the lake. Remove the hole and drain the water into the plastic container under the hole. Pour the water into the cup labeled 2.

5. Record the data. Decide how to record how much water is in the cup. Leave the water in the cup.

Step 3: Collect data from the moderate development condition.

1. Prepare the model. Remove one piece of cloth. Place some houses in the area.

Check that the black stopper is placed in the hole in the lake. Place the plastic container under the hole.

2. Prepare for the rain. Pour water into the cup labeled #3, filling it to the line. Pour the water into the cloud bottle.

3. Rain on the model. Using the cloud bottle to pour rain evenly across the model.

4. Collect the runoff. Wait as the water collects in the lake. Remove the hole and drain the water into the plastic container under the hole. Pour the water into the cup labeled 1.

5. Record the data. Decide how to record how much water is in the cup. Leave the water in the cup.

Step 4: Collect data from the heavily developed condition.

1. Prepare the model. Remove the remaining piece of cloth. Place more houses on the model.

Check that the black stopper is placed in the hole in the lake. Place the plastic container under the hole.

2. Prepare for the rain. Pour water into the cup labeled #4, filling it to the line. Pour the water into the cloud bottle.

3. Rain on the model. Using the cloud bottle to pour rain evenly across the model.

4. Collect the runoff. Wait as the water collects in the lake. Remove the hole and drain the water into the plastic container under the hole. Pour the water into the cup labeled 4.
5. Record the data. Decide how to record how much water is in the cup. Leave the water in the cup.

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Data Collection

Condition	**Runoff Water Amount**
1. Undeveloped Land	
2. Developed Roads Condition	
3. Moderate Development Condition	
4. Heavily Developed Condition	

Place the cups next to each other. What conclusions can you make about runoff and development?

Discussion

Look at an online map of the school or your neighborhood.

Based on what you learned from this activity, what are some recommendations you can make that would reduce flooding in the area?