COMMUNITY WATERS SCIENCE UNIT

4TH GRADE

MODELING THE SITE

Community Waters Science Unit: Lesson 6

MODELING THE SITE

Focus Question: How do we best model our stormwater runoff problem at our site?

Learning Target: We will use our understanding of surfaces to build a working model of our site.

MODELING THE SITE

- Today we will begin constructing physical models to represent what's happening to stormwater at our selected site.

- Remember: models do not (and cannot) represent the real world perfectly. Our models need to represent the surfaces and where the water goes in a general way.

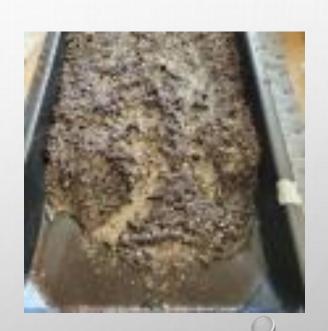What do you think should be represented in a physical model of our site?

NOW IT'S YOUR TURN!
BUILD A MODEL LIKE
THE TEACHER EXAMPLE.

❑ **Put down the absorbent pad under the black tray.**

❑ **Make sure the plug is in the hole.**

❑ **Use your tools or your hands to shape the soil like the example.**

TEST HOW THE WATER FLOW IN MODELS

- Materials needed: rain jar with **100 ml** of water and the model

- Shake the water over your model.

- Keep the hole in your model plugged - we will drain it at the end if needed.

- Observe where the water is flowing. Is it flowing in the right directions? Are parts of the model working correctly?

FAIR TEST PROCEDURES

Engineers use <u>repeatable</u> **fair test** procedures to test, compare and optimize various solutions.

- A <u>fair test</u> means that only one thing (variable) is changed, and everything else should be the same between trials.

Investigation Question: How much does the amount of runoff change after we add our solution to the model?

We want to compare the amount of water that drains out of our original site model to the amount that drains out AFTER we add and optimize our solution.

VARIABLES

Measured Variable the thing we're measuring with our test

- amount of water that drains out of the hole.

Changed Variable the thing we change in our model

the changes we make to the model to represent a solution.

Controlled Variable the thing that stays the same before and after our solution is added

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What variables do we need to control, or keep the same?

RECORD OUR RESULTS AND OBSERVATIONS FROM THE TEACHER TEST

Trial	Amount Runoff Collected	Observations
Teacher Site Model without solution 500 mL	____ ml	
Our Site Model with solution Our solution is:	____ ml	

Later, each group will test their own models with their solutions!