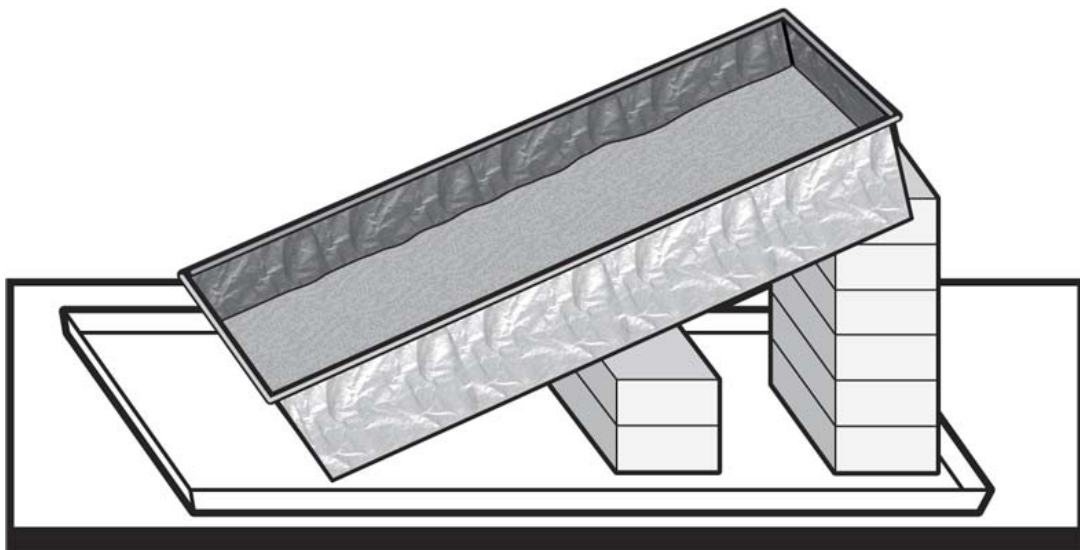


Identify Variables

Name _____ Date _____

Key Vocabulary				
controlled	dependent	identify	independent	variable

Directions: Read the summary of each science project. Then identify the **independent variable**, the **dependent variable**, and the **controlled variables**. *Note: In science projects, there are often two or more controlled variables.*



- Students wanted to know how much the slope (or tilt) of land affects erosion. So they set up four identical pans and filled each pan halfway with the same kind of soil. They raised one end of each pan to a different height. Then they poured 300 mL of water into the top-center part of each pan and observed the erosion in each pan after the water had flowed through the soil for one minute.

Independent variable: _____

Dependent variable: _____

Controlled variable(s): _____

Name _____ Date _____

2. Students were wondering whether magnets worked through liquids and solids. So they selected a metal nail and a magnet and made sure the magnet attracted the nail. First, they placed the nail in water and tried picking it up. Next, they placed the nail in soda and tried again. Then, to test the magnet with solids, they placed different items between the nail and the magnet: a sheet of paper, a piece of cardboard, a T-shirt, and a book. Each time, they pointed the magnet at the nail in the same direction. For each test, they judged how well the magnet picked up the nail.



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Independent variable: _____
Dependent variable: _____
Controlled variable(s): _____

3. Students wanted to find out how much water different plants give off through their leaves. So they placed identical bags over a single leaf on three different types of live plants and then sealed each bag with tape. They only chose plants found in a sunny part of their school’s playground. The students kept the bags sealed for one week and only opened the bags after the last day so they could measure the water volume from each bag.



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Independent variable: _____
Dependent variable: _____
Controlled variable(s): _____

Identify Variables Answer Sheet

- Independent variable: *slope of the pan (four heights)*

Dependent variable: *amount and pattern of erosion observed*

Controlled variable(s): *type of pan; type and amount of soil; amount of water; location where water was poured; amount of time before observing erosion*
- Independent variable: *material used for testing magnet (water, soda, paper, cardboard, T-shirt, book)*

Dependent variable: *how well the magnet picked up the nail*

Controlled variable(s): *type of nail; type of magnet; direction to point the magnet at the nail*
- Independent variable: *type of plant*

Dependent variable: *volume of water in bag*

Controlled variable(s): *sunny location of plants; type of bag; number of leaves in each bag; how to seal bag; amount of time to keep bags sealed*