MATH TREK:
Variables and Change

Math Trek is a scavenger hunt game.

Grow your math eyes.

Make connections.

Notice new math ideas in your familiar places.

Seek a favorite math idea everywhere you go: parks, neighborhoods, around the town...

Try: Search for Trek Prompts by yourself. Ask friends and family what they see. Browse online Image Search results. Take photos, vids, or tell a story about your finds!

Interesting choices: Look for physical objects around you OR use your imagination. Discover math out there OR invent and make your own.
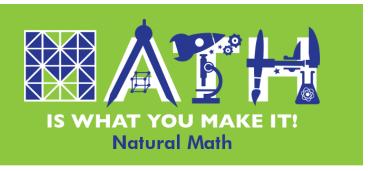
Terms for Variables and Change

Actions   change, transform, conserve, depend, measure, count, evaluate

Things   similarities and differences, placeholder, quantity, quality

Concepts   variable, constant, co-vary, symbol, parameter, number, range

Find examples, **Pose** problems,
Design puzzles, **Ask** questions,
Construct proofs, **Write** stories,
Build models, **Create** art

Make mathematics

MATH IS WHAT YOU MAKE IT!
Natural Math

MATH TREK: Variables and Change - Prompts

1 One variable, different values

Variable: **color**
Find something in color **green**.
Find something in color **brown**.
Find something in color _____ (your value).
Find something in color _____ (your value).

Variable: **shape**
Find something **rectangle**-shaped.
Find something **round**-shaped.
Find something _____-shaped (your value).
Find something _____-shaped (your value)

Variable: _____ (your variable)
Find something with _____ (your value).

Are the values of your variable qualities or quantities?

2 One object, many variables

Find something you like.
What values, and of what variables, do you see in your object?
What values you could have seen? Find ranges of your variables.

Example photo by Sharon Mammoser
Values: This is a small, heart-shaped, dark-red leaf. Variables: Size, shape, and color.

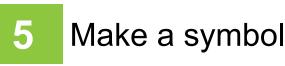## 3 Variables vs. constants

Find a value that doesn't change.
Note: This hunt may spark philosophical debates.

4 Variables that change together

Find two or more variables that co-vary: when one changes, the other does too.
Does one of your variables cause the other (dependent) variable to change?
        For example, the number of cars in the parking lot and the number of wheels change together.

5 Make a symbol

Invent and make symbols for some of the variables you found. You can also hunt for symbols others made.