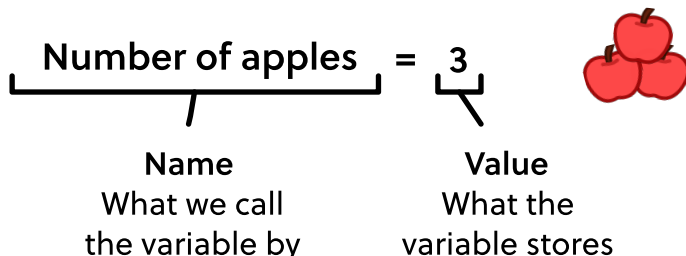# Vivid Variables

Welcome to Decomposphere!

Ready, set, learn! Dive into the bright green grasses of Decomposphere with Dot and learn how to break down problems into smaller parts. Today, we'll be starting our journey on Decomposphere with variables!

What are variables?

In computer science, we use **variables** to **store information**. Variables have a **name** that we call it by and a **value** it stores. Let's take a look at how Dot's favorite fruit, apples, can be represented by a variable!

This morning...

Dot has 3 red apples, freshly bought from the Decomposphere Market.

Number of apples = 3

Name
What we call
the variable by

Value
What the
variable stores

1 hour later...

Time for a snack!

After eating an apple, Dot has 2 apples left...

By definition, **all variables can be changed**! Since Dot ate an apple for snack and now has one apple less, we can update our "Number of apples" variable to reflect the change.

Number of apples = 2

More Variables!

In addition to numbers, variables can also store words, names, etc!
Here are several variables used to describe Dot:

All About Dot!

Dot's Variables

Name = Dot

Home = Decomposphere

Favorite color = Green

Favorite fruit = Apples

Number of siblings = 2

Lucky number = 35

In our next example, we'll explore how these variables can be split into different categories.

Trash Sort

In computer science, variables are split into categories based on their value. To explain this, let's take a look at how we separate waste into three bins: Trash, Compost, and Recycle.

All of our waste either belongs in the Trash, Compost, or Recycle bin.
Below each bin are a couple examples of what belongs where!

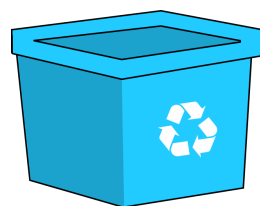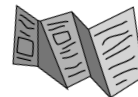| Trash	Compost	Recycle
Straws Plastic bags	Apple core Banana peel	Paper Newspaper

Similar to how we sorted waste into the Trash, Compost, and Recycle bins in our trash sort example, we also sort variables into different categories.

Vast Variety of Variables

There are many different variables used in computer science, from words to numbers to everything in between! To sort these numbers and words, we can categorize them into the word or number variable category.

Variables in the **word category** store words and sentences: "Cheetahs run very fast.", "What's up?"

Variables in the **number category** store any kind of number: 1, 3, 100

Below, each bucket represents the **word** and **number** categories. Inside each bucket are variable values to describe Dot's 2 apples from our previous example.

To store the color of apples, we use a variable with the value of the word "Red". To store the price of two apples, we use a variable with the number $1.50.

Fresh Red Apples
Word

2 $1.50
Number

Snowball Fight!

Using your knowledge of variables and variable types, you will be filling in your own silly paragraph!

Setup

- On your 'Silly Paragraph Variables' page, you will find ten rectangles. **Each rectangle will represent a variable** from the Variable Names List below (You will have ten variables in total).

- Assign each variable a **name** from the Variable Names List, a **value**, and a **category** (word or number) based on its value. The order of the 'Variables Names List' should match with the numbers on each rectangle found on the next page. (Ex. The sport variable belongs on the 2nd rectangle.) When finished, carefully cut out the rectangles along dotted lines.
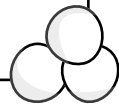
Variable Names List

(Assign each variable a **name** from this list)

1. Weather
2. Sport
3. Outdoor place
4. Plural animal
5. Favorite number

6. Past-tense action verb
7. Price
8. Adverb
9. Plural animal 2
10. Adjective

Category

(Assign each variable a category)

Word

Number

How to Play

- Sit in a circle with a group of 4-10 people.

- Crumple and ball up the first variable from your stack to form a "snowball". (Check the number on your snowball—This should be the same for everyone!) When everyone has their snowballs ready, throw them into the center of your circle.

- Take one snowball from the center of your circle. (Don't open it up yet!)

- Repeat the process of throwing and taking snowballs with your other nine pieces of paper. After this, everyone should have ten snowballs each.

- It's finally time to open all of your snowballs! On the 'Silly Paragraph' page, use your snowballs to fill in the missing variables in the paragraph. When you finish, read aloud your silly paragraph to your group!

1

_____ _____ =
Category   Name

_____
                        Value

2

_____ _____ =
Category   Name

_____
                        Value

3

_____ _____ =
Category   Name

_____
                        Value

4

_____ _____ =
Category   Name

_____
                        Value

5

_____ _____ =
Category   Name

_____
                        Value

6

_____ _____ =
Category   Name

_____
                        Value

7

_____ _____ =
Category   Name

_____
                        Value

8

_____ _____ =
Category   Name

_____
                        Value

9

_____ _____ =
Category   Name

_____
                        Value

10

_____ _____ =
Category   Name

_____
                        Value

Silly Paragraph: A Day in Decomposphere

To complete your silly paragraph, use your snowballs to write in the value of each variable (the variable names are below the missing blanks)!

It was a nice, _____ day in Decomposphere—the perfect weather
Weather

for outdoor sports! I quickly gathered my friends to play some

_____ and enjoy the summer breeze. But when we finally arrived at
Sport

the _____ to play, it started to rain _____. It
Outdoor Place   Plural Animal

was crazy, to say the least, not even a minute has passed and I had already seen

_____ of them! Since it was raining so heavily, I
Favorite Number

_____ to the nearest store to buy a sturdy umbrella for a striking
Past-tense Action Verb

price of _____ . With my new umbrella, I
Price

_____ returned home, only to find that it was now raining
Adverb

_____. What a(n) _____ day!
Plural Animal 2   Adjective