

# Data Types - Floating Point Numbers

## Floating Point numbers

Floating point numbers (often called floats) are numbers with a decimal. They can be positive or negative.

```
double fraction = 0.5;  
System.out.print(fraction);
```

### ▼ Why is float called double?

In Java, there is a data type called **float** but as it only uses 4 bytes it is insufficient for most math. Instead, we use **double** which uses 8 bytes or double the space of a float

TRY IT

0.5

### What happens if you:

- Change the variable to `50.`?
- Change the variable to `.001`?

TRY IT

0.001

### Variables - int vs double

Fill in the following with the appropriate vocabulary to explain the difference between a double and an int.

A `double` is a `floating point number` meaning it has a `decimal`, where an `int` is a `whole number` meaning it does not have a decimal.

A `double` is a floating point number or a rational number meaning it has a decimal or represents a fraction, where an `int` (short for integer) is a whole number meaning it does not have a decimal.

Both can be positive or negative!

