loops-prep

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Basic for loops in R

```
#for(item in list_of_items){
  #do_something(item)
#}
```

```
volumes <- c (1.6, 3, 8)
for (volume in volumes){
  mass <- 2.65 * volume^0.9
  mass_lb <- mass *2.2
  print(mass)
  print(mass_lb )
}
```

```
## [1] 4.045329
## [1] 8.899724
## [1] 7.12287
## [1] 15.67031
## [1] 17.21975
## [1] 37.88345
```

looping by index

```
volumes <- c (1.6, 3, 8)
masses <- vector(length = length(volumes), mode = "numeric")
for(i in 1:length(volumes)){
  mass <- 2.65 * volumes[i]^0.9
  masses[i] <- mass
}
```

#loop over multiple objects

```
volumes <- c (1.6, 3, 8)
b0 <- c(2.65, 1.28, 3.29)
b1 <- c(0.9, 1.1, 1.2)
masses <- vector(length = length(volumes), mode = "numeric")
```

```
for(i in 1:length(volumes)){
  mass <- b0[i] * volumes[i]^b1[i]
  masses[i] <- mass
}
```

looping using functions

```
estmass <- function(volume){
  if (volume > 5){
    mass <- 2.65 * volume ^0.9
  } else {
    mass <- NA
  }
  return(mass)
}
volumes <- c (1.6, 3, 8)
masses <- vector(mode = "numeric", length = length(volumes))
for (i in 1:length(volumes)){
  mass <- estmass(volumes[i])
}
masses_apply <- sapply(volumes, estmass)
```

looping over files

```
#download.file("https://www.datacarpentry.org/semester-niology/data/locations.zip", "locations.zip")
#unzip("locations.zip")
#data_files <- list.files(pattern = "locations-")
#results <- vector(mode = "intenger", length = length(data_files))
# for (i in 1:length(data_files)){
#data <- read.csv(data_files[i])
#count <- nrow(data)
#restults[i] <- count
#}
```