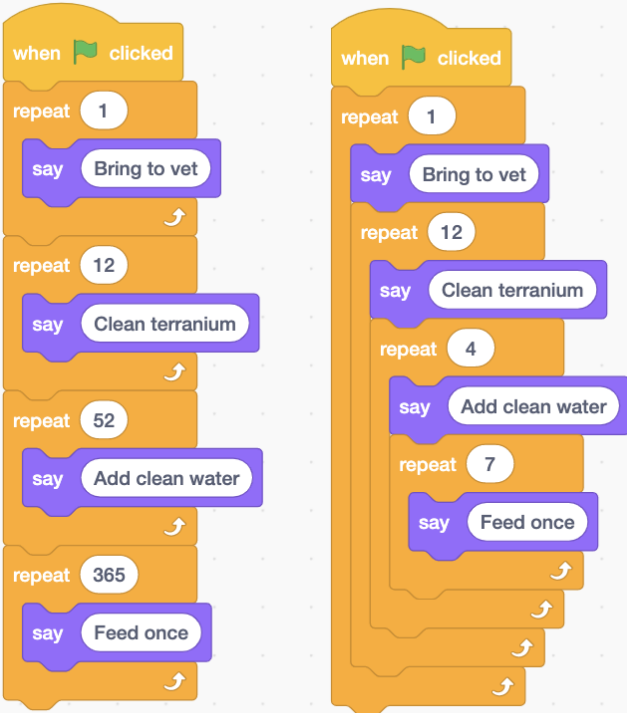| Be efficient	Grade 5 and 6
Coding Efficiency	

Coding Efficiency: Efficiency is important in coding because it makes the code much easier to understand and to debug if needed. One way we can make code more efficient is by using loops. This requires us to identify patterns in our code.

In this coding efficiency exercise we will look at writing an efficient program to take care of a pet. By making a loop for a day, a week, a month, and a year we can repeat the instructions needed to care for a pet. Nesting loops inside each other makes this much more efficient. Let's look at an example of a pet turtle:

- Feed once daily
- Add clean water weekly
- Clean terrarium monthly
- Bring to vet yearly

If you were to write a program to take care of the turtle every day for a year, you would have to write "feed once daily" 365 times, "add clean water" 52 times, "clean terrarium" 12 times and "bring to the vet" one time. That would be the same as writing 430 lines of code. Using loops makes it much easier. Here is an example of what it looks like with numbers, or if we were to write it as pseudo-code:


```
Repeat yearly
  Bring to vet

  Repeat monthly
    Clean terrarium

    Repeat weekly
      Add clean water

      Repeat daily
        Feed once
```

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Activity: Coding efficiency

Here are some activities that you need to do to take care of a dog. Nest the activities in the appropriate pseudo-code loop to make instructions for caring for a dog as efficient as possible.

Morning Walk	Give tick medication	Night Walk
2 cups for breakfast	Check-up appointment	Get groomed
Clean ears	2 cups for dinner	Get shots
Cut nails	Give bath	Lunch walk

Repeat yearly
    Get shots
    Check-up appointment

Repeat monthly
    Get groomed
    Give tick medication

Repeat weekly
    Clean ears
    Cut nails
    Give bath

Repeat daily
    Morning walk
    2 cups for breakfast
    Lunch walk
    2 cups for dinner
    Night walk

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