

Daily For Loops (Teacher Version)

Corresponding Material

Intro to Programming with Tracy, Lesson 4: For Loops

Discussion

For loops are used to repeat commands a specific number of times. When we write a for loop, we use the following syntax:

```
for i in range(times_to_repeat):  
    Commands to repeat indented here
```

Further Discussion

This activity will give students more practice writing for loops. The questions increase in difficulty as they progress, where students may need to first determine which parts of the code need to repeat and when. It would be very useful to go through the answers as a class to dispel any misconceptions about for loop syntax.

Class Exercise

We use for loops all the time in our daily lives. Answer the following questions using your knowledge of writing for loops in Python. Don't forget to use proper indentation and syntax!

1. On a normal week, school is in session for 5 out of 7 days. If you could only use the following two commands, write a code to describe your morning schedule during a 7-day week in the shortest possible way, starting on Monday.

```
wakeUpForSchool()  
sleepIn()  
  
for i in range(5):  
    wakeUpForSchool()  
for i in range(2):  
    sleepIn()
```

2. Your school is a mile away. That means it takes you (roughly) 5,280 total steps to get there. Write a code using the following commands to describe your walk to school.

```
stepWithRightFoot()  
stepWithLeftFoot()  
  
for i in range(2640):  
    stepWithRightFoot()  
    stepWithLeftFoot()
```

3. When your mom makes you a peanut butter and jelly for lunch, you have to chew at least 5 times before you can swallow each bite. It takes you 25 bites to eat your sandwich. Write a code that describes eating your lunch using the following commands.

```
takeBite()
chew()

for i in range(25):
    takebite()
    for i in range(5):
        chew()
```

4. Your math teacher gives you a worksheet with 30 problems to solve. You start out with a newly sharpened pencil, but everytime you solve 6 problems, you need to sharpen it. Write a code using the following commands to describe the process of completing your math homework.

```
solveProblem()
sharpenPencil()

for i in range(5):
    for i in range(6):
        solveProblem()
    sharpenPencil()
```

5. You have basketball practice every Wednesday and your coach always makes you run the same drill where you have to wait in line, dribble 10 times, shoot a layup, catch your rebound, bounce the ball to your teammate, and get back in line. You have to run this whole drill 15 times. Write a code to describe this basketball drill using the following commands.

```
waitInLine()
dribble()
shootLayup()
catchRebound()
ballToTeammate()

for i in range(15):
    waitInLine()
    for i in range(10):
        dribble()
    shootLayup()
    catchRebound()
    ballToTeammate()
```