Intermediate Python Reference Sheet

CS IN SCHOOLS

```python
keep_going = True       # this is True
name_match = False      # this is False
print(1 + 1 == 2)       # will print True
print(2 + 2 == 3)       # will print False
```

Integers and Strings

```python
number = 4        # This is an integer
name = "Alice"  # This is a string
```

Maths Operations in Python

```python
a = 7 + 3        # Addition
b = 5 - 1        # Subtraction
c = 4 * 6        # Multiplication
d = 8 / 2        # Division
```

Converting between Strings and Integers

```python
a = int("1")     # String to integer
b = str(2)       # Integer to string
```

Modifying the Contents of a Variable

```python
likes = likes + 1 # Increase `likes` by 1
likes = likes - 1 # Decrease `likes` by 1
```

if, elif and else

```python
if name == "Alice":
  print("Have you been to Wonderland?")
elif name == "Bob":
  print("Can we fix it? Yes we can!")
elif name == "Charlie":
  print("I love chocolate!")
else:
  print("Nice to meet you, " + name)


# only ONE of these options will run
# if more than one are True, the first
# one that is true will be run
```

Boolean Variables and Expressions

Repeating Code (while Loops)

```python
keep_going = True          # flag variable

while keep_going == True:
  password = input("Enter your PIN:")

  if password == "1234":  # nested IF
    keep_going = False     # update flag


print("Welcome inside!")  # exited loop
```

Comparison Operators

```python
a < b    # a is less than b
c > d    # c is greater than d
e <= f   # e is less than OR equal to f
g >= h   # g is greater than OR equal to h
```

Generating Random Numbers

```python
from random import randint # required


number = randint(1,10) # generates a
                       # random number
                       # between 1 and 10
```

String Functions

```python
name.isupper() # True if name contains
               # all upper case letters


name.islower() # True if name contains
               # all lower case letters
```

in and or Operators

```python
"Alice" in name # True if "Alice" is
                # contained in `name`


"Alice" in name or "Bob" in name


# True if "Alice" is contained in `name`

# OR if "Bob" is contained in `name`
```

```python
"Alice" in name # True if "Alice" is
                # contained in `name`
```