SPRING TERM 2023

Subject: Computing

Year: 9

Topic(s) to be covered

PYTHON ADVANCED – Computer Science taster

In this unit students will learn how to use Python to program in a high-level text-based language to a more advanced level, building on the basic concepts learnt last year.

The lessons form a journey that starts with simple programs involving input and output, and gradually moves on through arithmetic operations, randomness, selection, and iteration. Emphasis is placed on tackling common misconceptions and elucidating the mechanics of program execution.

Aim of the unit

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems
- Understand several key algorithms that reflect computational thinking; use logical reasoning to compare the utility of alternative algorithms for the same problem
- Understand how instructions are stored and executed within a computer system
- Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems

A detailed breakdown of what will be covered in each lesson can be found on the class Teams page.

Assessment Procedures

Each lesson contains tasks for students to work through independently and as whole class that cover the topics for that lesson, some of which will be marked off in their Assessment Booklet.

At the end of this unit, students will be given 45 minutes to solve some problems by writing Python code. This will be done under exam conditions and will determine their final grade for this unit.

Homework guidance

Homework will be set once a fortnight. This will be marked and recorded on the student Tracking Sheet. The grades awarded will be Acceptable, Good or Excellent (credit awarded).

Details of individual homework can be found on Synergy.

How can you help?

Encourage your child to use repl.it online to practice Python at home as much as they can.