Raspberry Pi Foundation

Learning graph 2
KS4 - Programming
Selection

Lesson 6   Lesson 7   Lesson 8   Lesson 9   Lesson 10   Lesson 11

Conceptual background and design processes

- Explain the purpose of pre-built libraries and functions
- Describe what is meant by true random
- Describe what is meant by pseudorandom
- Determine the differences between true random and pseudorandom
- Define a condition as an expression that can be evaluated as True or False
- Interpret a flow chart that includes conditions
- Describe how Boolean operators can be used in expressions
- Define nested selection

Programming skills

General and Python-specific programming skills

- Use Python documentation to inform correct use of syntax
- Use commenting appropriately within a program
- Use random in a program
- Import modules into programs
- Evaluate arithmetic expressions using rules of operator precedence
- Use arithmetic expressions
- Evaluate logical expressions
- Perform code walkthroughs of selection statements
- Evaluate logical expressions that contain Boolean operators
- Perform code walkthroughs of nested selection statements

Control structures

- Use binary selection to control the flow of program execution
- Use selection to control the flow of program execution
- Identify when to use selection statements
- Use nested selection to control the flow of execution in programs

Language features

Programming constructs in Python

- **commenting**
  `#, """ """`
- **Randomness and using modules**
  `randint`
  `randrange`
- **Arithmetic operators and expressions**
  `//, **, %`
- **Selection (binary)**
  `if, else`
- **Selection**
  `if, elif, else`
- **String methods**
  `.lower, .upper`
- **Comparison operators in logical expressions**
  `==, <, >`
- **Comparison operators in logical expressions**
  `!=, <=, >=`
- **Boolean operators and expressions**
  `and, or`
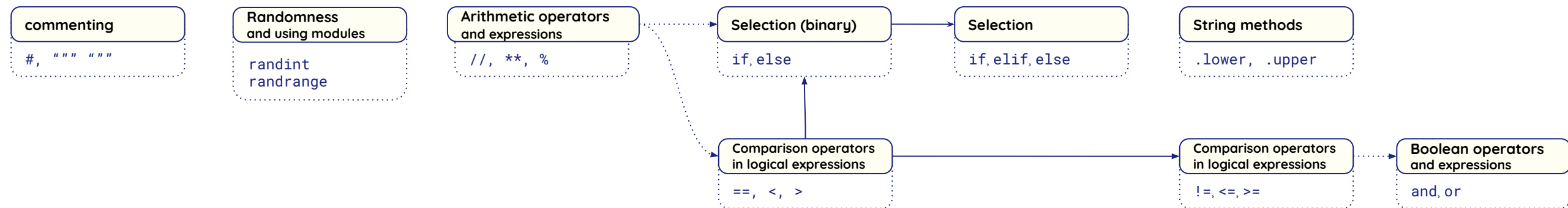
Key:

- Concept
- Skill

Links:
- Direct prerequisite
- Scaffolding not direct prerequisite