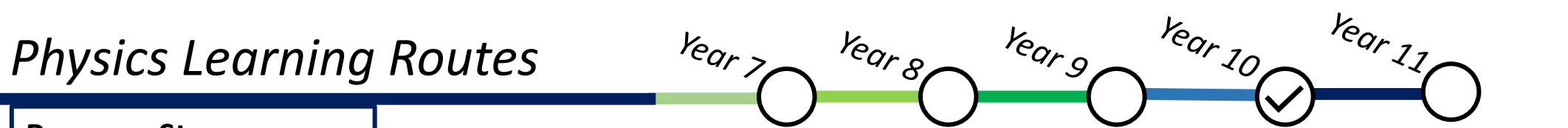
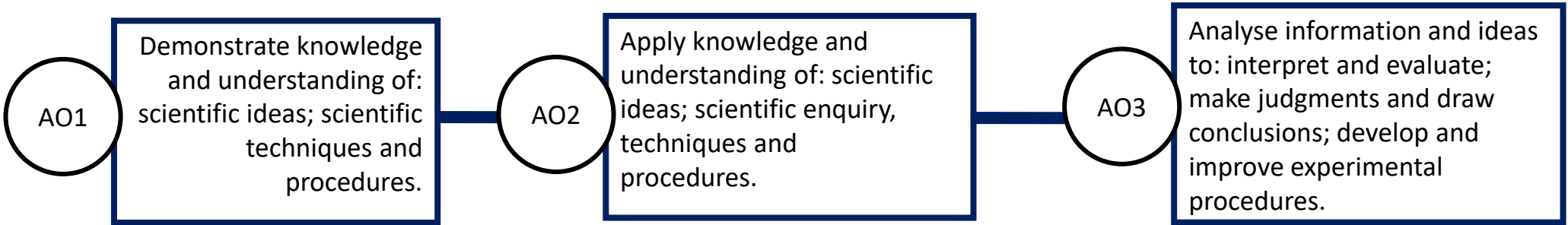
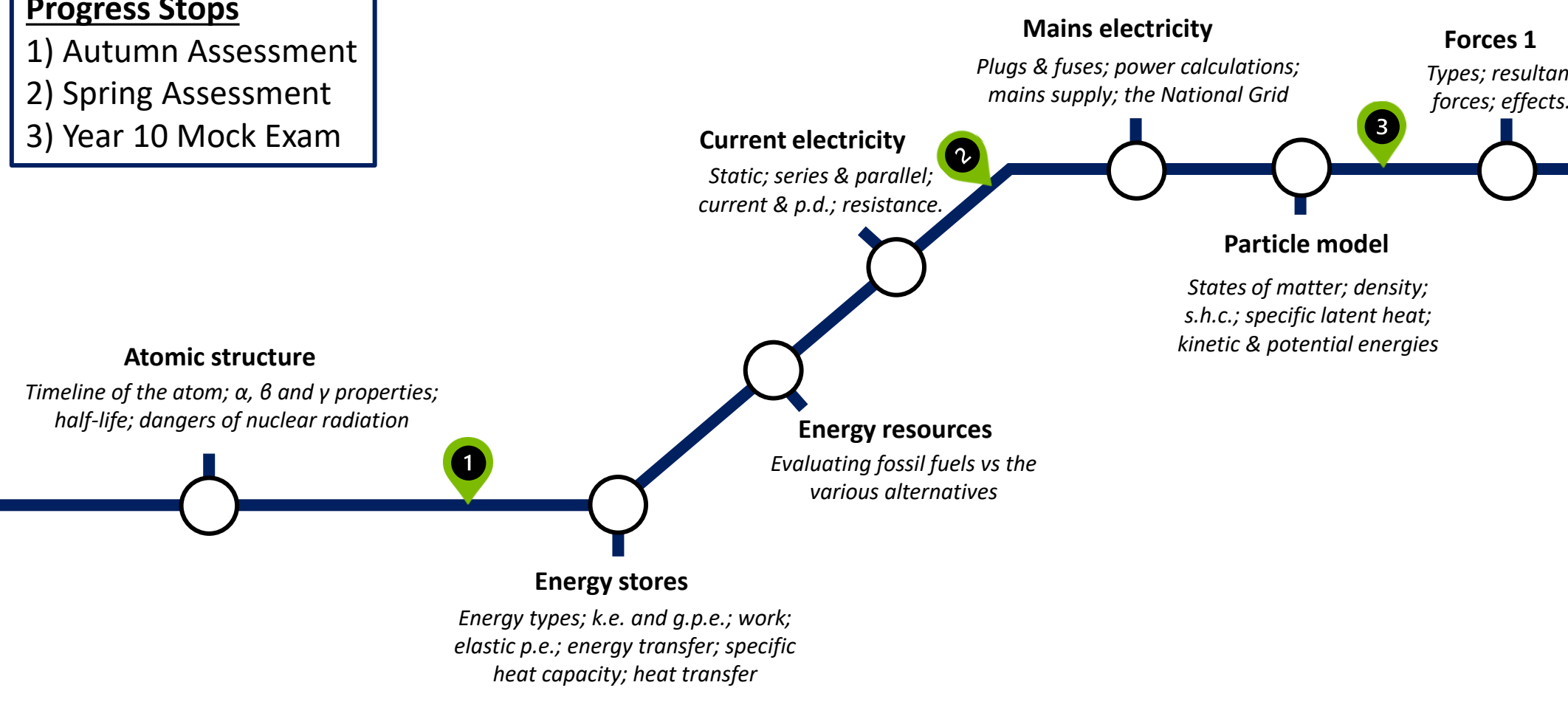


# Physics Learning Routes



- Progress Stops**
- 1) Autumn Assessment
  - 2) Spring Assessment
  - 3) Year 10 Mock Exam

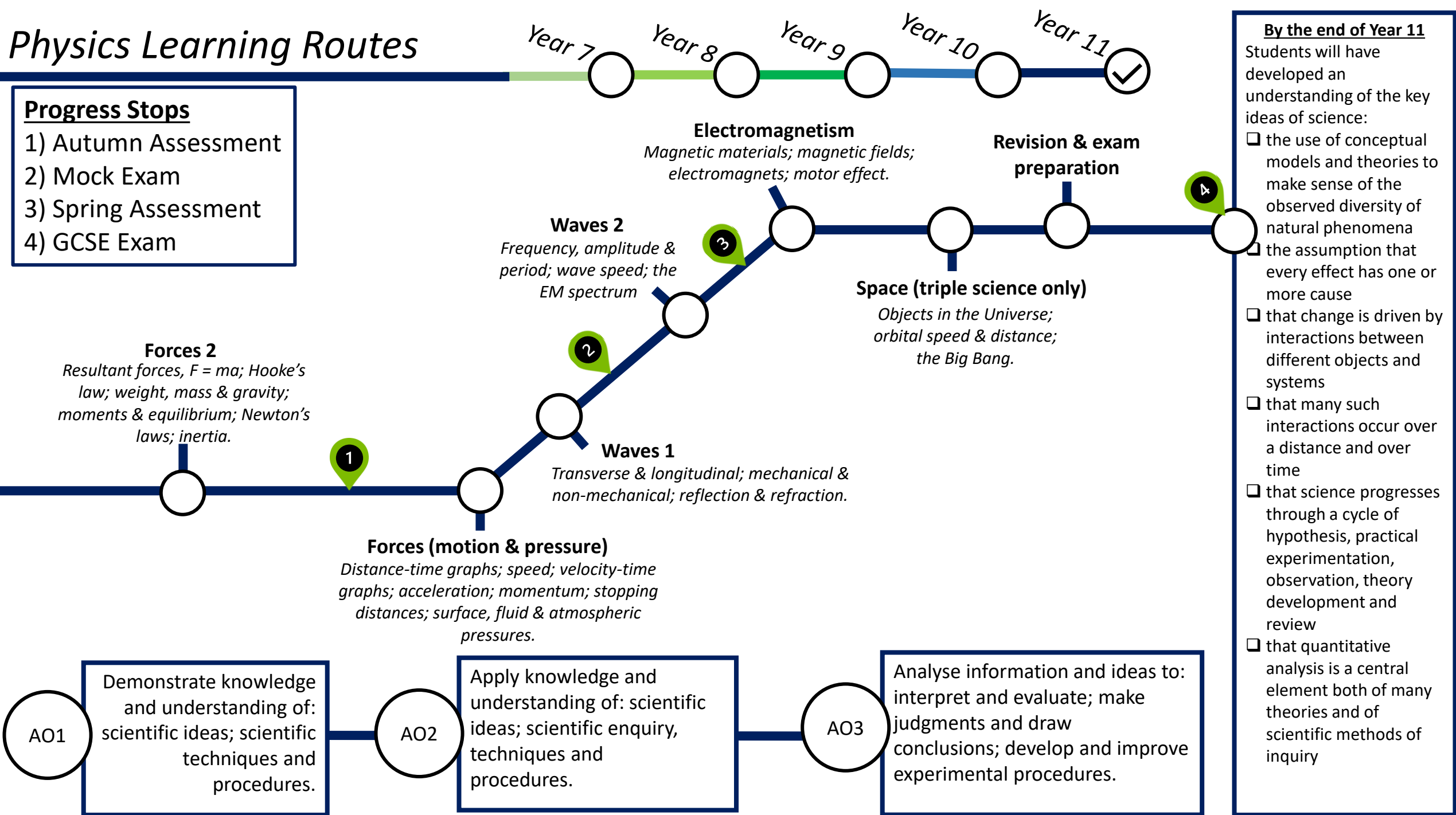


- By the end of Year 10**  
Students will be developing understanding of the key ideas of science:
- the use of conceptual models and theories to make sense of the observed diversity of natural phenomena
  - the assumption that every effect has one or more cause
  - that change is driven by interactions between different objects and systems
  - that many such interactions occur over a distance and over time
  - that science progresses through a cycle of hypothesis, practical experimentation, observation, theory development and review
  - that quantitative analysis is a central element both of many theories and of scientific methods of inquiry

# Physics Learning Routes

## Progress Stops

- 1) Autumn Assessment
- 2) Mock Exam
- 3) Spring Assessment
- 4) GCSE Exam



**Forces 2**  
Resultant forces,  $F = ma$ ; Hooke's law; weight, mass & gravity; moments & equilibrium; Newton's laws; inertia.

1

**Forces (motion & pressure)**  
Distance-time graphs; speed; velocity-time graphs; acceleration; momentum; stopping distances; surface, fluid & atmospheric pressures.

AO1

Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.

2

**Waves 1**  
Transverse & longitudinal; mechanical & non-mechanical; reflection & refraction.

AO2

Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.

3

**Waves 2**  
Frequency, amplitude & period; wave speed; the EM spectrum

AO3

Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.

**Electromagnetism**  
Magnetic materials; magnetic fields; electromagnets; motor effect.

**Space (triple science only)**  
Objects in the Universe; orbital speed & distance; the Big Bang.

**Revision & exam preparation**

4

**By the end of Year 11**  
Students will have developed an understanding of the key ideas of science:

- the use of conceptual models and theories to make sense of the observed diversity of natural phenomena
- the assumption that every effect has one or more cause
- that change is driven by interactions between different objects and systems
- that many such interactions occur over a distance and over time
- that science progresses through a cycle of hypothesis, practical experimentation, observation, theory development and review
- that quantitative analysis is a central element both of many theories and of scientific methods of inquiry