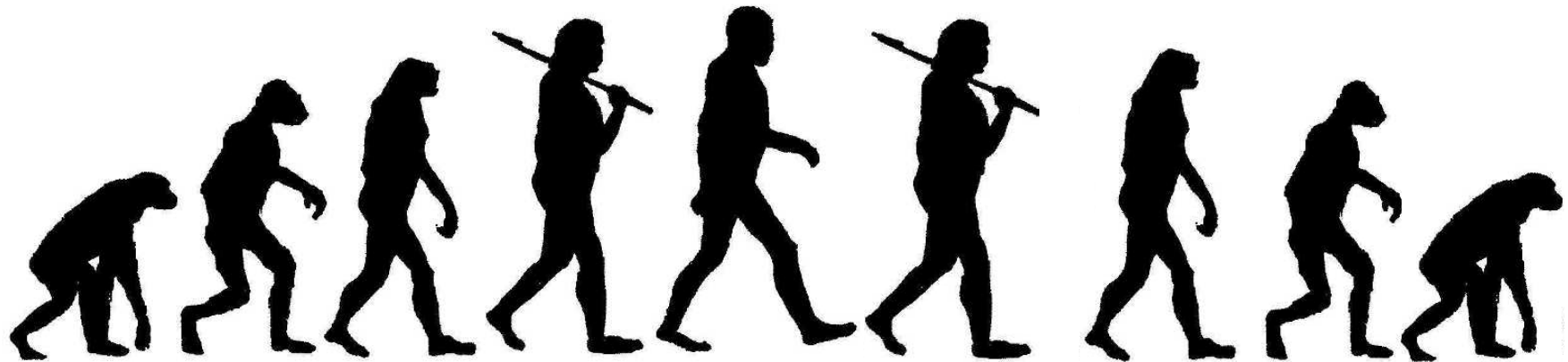


# The evolving A level programme



# Changes to GCSE

# Previous GCSE

- Most did Double Award Science
- Some did Treble Award Science (predominantly selective and independent schools) but with no external pressure to do so
- Some did only Single Award Science and would not go further in Science
- Some did Applied Science and could then progress to vocational courses or Applied Science post-16

# New GCSEs

## from September 2006

- New National Curriculum orders: everyone does **Science** (single GCSE)
- Can be complemented by **Additional Science** for prospective B/C/P A level students
- Can also be complemented by **Additional Applied Science** (not for prospective B/C/P A level students)
- Government and social pressure to make GCSE Separate Sciences more available.

# How Science Works

## At GCSE

- **data, evidence, theories and explanations**
- **practical and enquiry skills**
- **communication skills**
- **applications and implications of science**

# How Science Works

## At GCE AS/A level

- analyse and evaluate scientific knowledge when presenting arguments and ideas
- apply scientific knowledge to unfamiliar situations including those related to issues (ethical, social, economic, environmental, cultural, political and technological)
- assess the validity, reliability and credibility of scientific information

# How Science Works 1

- Use theories, models and ideas to develop and modify scientific explanations
- Use knowledge and understanding to pose scientific questions, define scientific problems, present scientific arguments and scientific ideas
- Use appropriate methodology, including ICT, to answer scientific questions and solve scientific problems
- Carry out experimental and investigative activities, including appropriate risk management, in a range of contexts
- Communicate information and ideas in appropriate ways using appropriate terminology

# How Science Works 2

- Analyse and interpret data to provide evidence, recognising correlations and causal relationships
- Evaluate methodology, evidence and data, and resolve conflicting evidence

# How Science Works 3

- Appreciate the tentative nature of scientific knowledge
- Consider applications and implications of science and appreciate their associated benefits and risks
- Consider ethical issues in the treatment of humans, other organisms and the environment
- Appreciate the role of the scientific community in validating new knowledge and ensuring integrity
- Appreciate the ways in which society uses science to inform decision-making

Changes to A  
levels

# Reasons for change

Tomlinson (December 2002)

- Simplify the structure
- Reduce the burden of assessment
- Establish/maintain standards

# New QCA subject criteria (2006)

Practical skills

- must be internally assessed

Content

- revised core content
- no multi-component units
- *How Science Works*

Grades

- A – E but.....
- Stretch and Challenge (A\*); not AS

# Development Aims

Progression

- **from** all new GCSE specifications
- **to** HE courses at University

Continuity

- for users of current specifications

Modernise

- evolutionary rather than revolutionary
- relevant and interesting

Experimental skills

- addresses issues of internal assessment

# Changes in Specifications

- Two written exams + 20% coursework (mostly) in each year
- AQA A essentially unchanged
- AQA B is new: Physics in Context
- Edexcel: only one specification, to assess both traditional and Salters Horners approaches
- OCR A essentially unchanged
- OCR B (Advancing Physics): new emphasis on measurement; also Special Relativity in A2
- CCEA & WJEC essentially unchanged.

# Stretch and Challenge

- A2 Question Papers only
  - ‘Stretch and Challenge’ embedded within papers
  - Less atomistic questions
  - Candidates make connections
  - More extended writing
  - Understanding and connectivity assessed through synoptic questions
- New A\* grade in A level



# UMS Grade Mark Thresholds

|    |     | A   | B   | C   | D   | E   | U |
|----|-----|-----|-----|-----|-----|-----|---|
| %  | 100 | 80  | 70  | 60  | 50  | 40  | 0 |
| AS | 300 | 240 | 210 | 180 | 150 | 120 | 0 |
| A  | 600 | 480 | 420 | 360 | 300 | 240 | 0 |

# Grading and the A\*

- AS and A level units are awarded A – E
- An enhanced A\* grade will be awarded to candidates who achieve
  - The A grade on A level aggregation
  - and*
  - At least 270 UMS (90%) on their A2 units.