Now that the revised curriculum has been taught, please consider the Implementation and Impact of the curriculum you taught. What changes might need to be made to the Curriculum Intent (See Curriculum Map and Overviews) in light of this year's experiences?

Year 7 Overview 2025-26 – *Physics*

<table>
<tr><th>Date</th><th>Wk</th><th>Week</th><th>Units Studied & Learning Outcomes</th><th>Key Concepts & Assessment</th></tr>
<tr><td colspan="5">8 weeks (8v Lessons) (38Days)</td></tr>
<tr><td>Tues 2-Sep
Tues Y7 only
Wednesday-whole school</td><td>A</td><td>1</td><td rowspan="9">• <u>Overview of Unit/No. lessons</u>
Forces and Motion/12 lessons

• <u>Lesson Sequence of Content</u>:
Lesson 1-Introduction to forces
Lesson 2-Measuring forces
Lesson 3-Balanced and unbalanced forces
Lesson 4-Resultant force
Lesson 5-Hooke's Law
Lesson 6-Friction
Lesson 7-Air resistance
Lesson 8-Upthrust
Lesson 9-Measuring and calculating Speed
Lesson 10-Distance-time graph
Lesson 11-Application and Quick Quiz
Lesson 12-Long answer question

• <u>Unit Learning Outcomes</u>:
GW BI EW

<table><tr><th>Prior (Y6)</th><th>Current (Y7)</th><th>Next (Y8)</th></tr><tr><td>Basic magnetism</td><td>Understand effects of forces</td><td>Year 8 – magnetism

Year 9 – contact & non-contact forces; Hooke's law

Year 10 – scalars/vectors, Newton's Laws, terminal velocity, V-T graphs

Year 11 - Momentum (H) Inertia & inertial mass (H) SUVAT Moments, levers, gears Pressure in fluids</td></tr></table></td><td rowspan="9">Foundational Concepts:
Forces & Motion

Outcomes
• State different examples of contact and non-contact forces.
• Describe the difference between mass and weight.
• Be able to describe the effect of balanced and unbalanced forces
• Know how to calculate resultant force and the effect of resultant force
• Know how to represent forces as arrows
• Know how extension and force are linked in a spring. Hooke's law Force = Spring constant x extension
• Understand friction, including air resistance, as a force and how it can be reduced
• Explain why some objects float and others sink
• Know how to calculate speed using speed = distance/time
• Represent journeys using distance-time graphs and be able to interpret them

• Skills used/learned
o Practical skills
o Method writing
o Interpretation skills
o Evaluation skills

• KW: force, contact/non-contact, static electricity, balanced/unbalanced, friction, Hooke's law, speed, air resistance, thrust, gravity.

Tier 2/3 Vocabulary
Referenced on PowerPoint slides, quick quizzes.

Links to root words- Etymology
Resistance- directly from Medieval Latin resistentia, from present-participle stem of Latin resistere "make a stand against, oppose"

Links to culture
o Everyday forces
o Friction to push bike along, friction reduced on a bike with oil
o Speed linking to everyday "miles per hour" – distance per time = speed equation

History
o Hooke's law, law of elasticity discovered by the English scientist Robert Hooke in 1660. Talk about uses. E.g. suspension, bridges, measuring the amount of wind force is needed to make a tall building bend and sway etc.</td></tr>
<tr><td>8-Sep</td><td>B</td><td>2</td></tr>
<tr><td>15-Sep
(INSET Friday)</td><td>A</td><td>3</td></tr>
<tr><td>22-Sep</td><td>B</td><td>4</td></tr>
<tr><td>29-Sep</td><td>A</td><td>5</td></tr>
<tr><td>6-Oct</td><td>B</td><td>6</td></tr>
<tr><td>13-Oct</td><td>A</td><td>7</td></tr>
<tr><td>20-Oct</td><td>B</td><td>8</td></tr>
</table>

			<table><tr><td></td><td></td><td>Year 12 - Scalars, vectors, resolving forces; Moments; Projectile motion; Momentum and impulses</td></tr></table> **Common misconceptions** • **Motion implies force** • **Force is needed to maintain motion** • **Heavy objects fall faster** • **Forces are properties of an object**	o Leonardo Da Vinci (1452-1519) was one of the first scholars to study friction systematically. He realized how important friction is for the workings of machines. He focused on all kinds of friction and drew a distinction between sliding and rolling friction. o Discuss ideas about Galileo and his experiments for air resistance. Did he do the leaning tower of Pisa experiment? Career ideas- civil engineers (buildings, bridges); automotive and mechanical engineers, including F1/Jaguar Land Rover/Bentley; sports scientists; motor/cycle mechanics. • Equality Diversity and Inclusion (EDI) links? EDI links: • Scientists from different nationalities Parent and Carers month/Black History month 3/9 World afro day 23/9 International day of sign languages 10/10 world mental health day 5/10 world teachers day 6/10 World cerebal palsy day • Assessment (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.) Highlighted lesson 9
Half-Term			**7** weeks (7 lessons) (35 Days)	
3-Nov	A	9	Overview of Unit/No. lessons Particles and Energy: 15 lessons Lesson Sequence of Content: Lesson 1-States of Matter and Particles Lesson 2-Changes of State Lesson 3-Brownian motion and diffusion in liquids and gases Lesson 4-Types of energy and conservation of energy Lesson 5-Energy transfers in different processes Lesson 6-Analysis of burning fuels HSW Lesson 7-Food as a fuel Lesson 8-Direction of energy transfer Lesson 9-Conduction Lesson 10-Convection Lesson 11-Radiation Lesson 12-Insulation Lesson 13-Heat vs Temperature Lesson 14-Application and Quick Quiz Lesson 15-Long answer question • GW: describe solids/liquids/gases using particle theory • BI: Discuss the changes to particles between states	Foundational Concepts: Particles, Energy & Circuits Outcomes • Understand the basics of particle theory, including the arrangements and movement of particles • Understand how particle theory describes changes of state, shape and density • Be able to describe Brownian motion • State examples of energy • Recognise conservation of energy • Know the different types of energy stores and how to write an energy transfer. • Identify useful and wasted energy • Know how to measure the energy in food and compare food labels • Know what is meant by a fuel • Know that food is a type of fuel • Describe thermal energy transfers by conduction, convection and radiation. • Compare the 3 methods of energy transfer • Describe the purpose of insulation • Know the difference between heat and temperature • Skills used/learned o Practical skills
10-Nov	B	10		
17-Nov	A	11		
24-Nov	B	ST1 (core only)		
1-Dec	A	ST1 (core only)		
8-Dec	B	14		
15-Dec	A	15		

Now that the revised curriculum has been taught, please consider the Implementation and Impact of the curriculum you taught. What changes might need to be made to the Curriculum Intent (See Curriculum Map and Overviews) in light of this year's experiences?

<table>
<tr>
<td></td>
<td></td>
<td></td>
<td>
• EW: Explain transfer of thermal energy using particle theory

Assessment
O HSW practical task – students should be able to explain findings using their Science knowledge and analyse results
O End of unit quiz
O Long answer extension question at the end of the unit
O Application task

<table>
<tr><th>Prior</th><th>Current (Y7)</th><th>Next</th></tr>
<tr><td>N/A</td><td>Understand particle theory and energy transfer</td><td>Year 8 – pressure in fluids

Year 9 – kinetic theory and specific heat capacity

Year 10 – kinetic theory, changes of state and latent heat.

Year 11 - Pressure in a gas linked to kinetic theory; pV = constant; Work to increase pressure/temperature of a gas (H)

Year 12 – sub-atomic theory</td></tr>
</table>

Common misconceptions

Particles get bigger when heated
Particles possess the same properties as the material they compose
Believing kinetic energy only changes when substances change state
Confusing melting with dissolving

</td>
<td>
o Method writing
o Interpretation skills
o Evaluation skills

• KW: atom, molecule, conduction, convection, radiation, energy, joule, heat, temperature, condensation, evaporation, freezing, melting, solid, liquid, gas.

Tier 2/3 Vocabulary
Referenced on PowerPoint slides, quick quizzes.

Links to root words- Etymology
o "Atomos" – old Greek meaning "indivisible"
o "kinetic" meaning moving, e.g. kinesthetics
o Thermal- from Greek therme "heat, feverish heat,"
o Conduction- from Latin conductionem (nominative conductio), noun of action from past-participle stem of conducere "to lead or bring together," from assimilated form of com "with, together"

Links to culture
o Link to particles of deodorant in a room
o Links to houses and energy efficiency

History
o The units of energy 'Joule' is named after James Prescot Joule-English physicist who established that the various forms of energy—mechanical, electrical, and heat, are basically the same and can be changed one into another. Thus, he formed the basis of the law of conservation of energy, the first law of thermodynamics.
o Brownian motion, also called Brownian movement- this motion is named after the botanist Robert Brown, who first described the phenomenon in 1827, while looking through a microscope at pollen of the plant Clarkia pulchella immersed in water. In 1905, almost eighty years later, theoretical physicist Albert Einstein published a paper where he modelled the motion of the pollen as being moved by individual water molecules, making one of his first major scientific contributions.

• Career ideas: Particle physicist (CERN); heating technician; mechanical engineer; solar (thermal or PV) energy equipment designer and/or installer

• Equality Diversity and Inclusion (EDI) links?
EDI links:
• Scientists from different nationalities
</td>
</tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td><td>• Anne Easley – developed and implemented a code used in researching energy conservation systems

Mens health awareness month/disability confident month
1/11 Diwali
12/11 Remembrance Sunday
13/11-19/11 Transgender awareness week
14/11 World Diabetes Day
1/12 World AIDS day
25/12 Christmas Day</td></tr>
<tr><td colspan="2">Christmas Holiday</td><td colspan="3">6 weeks (6 lessons) (30 Days)</td></tr>
<tr><td>5-Jan</td><td>B</td><td>16</td><td rowspan="5">Overview of Unit/No. lessons
Space: 9 lessons

Lesson Sequence of Content:
Lesson 1- Identify planets in the solar system
Lesson 2-Day & night
Lesson 3-Seasons
Lesson 4-Phases of the moon
Lesson 5-Eclipses – solar & lunar
Lesson 6-Satellites - natural & artificial
Lesson 7-Force, weight and mass on different planets
Lesson 8-Quick quiz assessment and Application
Lesson 9-Long answer question

<table><tr><th>Prior (Y6)</th><th>Current (Y7)</th><th>Next</th></tr><tr><td>Personal observation of moon, stars, sun</td><td>Understand basics of weight, space and seasons
Links to P1: non-contact forces</td><td>Year 8 – light waves and speed of light

Year 10 – solar system, orbital motion, life of a star, red shift

Year 12 – optional unit: Astrophysics.</td></tr></table>
• GW: describe the difference between mass and weight
• BI: Discuss gravity as a non-contact force, noting its different values on different planets and the resulting difference in weight.
• EW: Explain the changes in seasons depending on the earth’s tilt and position with respect to the sun.

Assessment
O HSW practical task – students should be able to explain findings using their Science knowledge and analyse results
O End of unit quiz</td><td rowspan="5">Foundational Ideas:
Space & Weight

Outcomes
• Understand the difference between weight and mass
• Understand that weight is caused by the non-contact force called gravity
• Carry out calculations to show the difference in weight on the same object on different planets.
• Know Weight = mass x gravitational field strength
• Describe our solar system as being made up of the sun and a series of different planets.
• Know about stars and galaxies.
• Understand how day and night occurs
• Understand how the different seasons occur
• Understand the phases of the moon
• Understand how a lunar and solar eclipse occur
• Understand what a satellite is
• Recall uses of artificial satellites

Skills used/learned
• Practical skills
• Method writing
• Interpretation skills
• Evaluation skills

• KW: gravity, weight, mass, solar system, galaxy, light year hemisphere, moon, lunar

Tier 2/3 Vocabulary
Referenced on PowerPoint slides, quick quizzes.

Links to root words-Etymology
• “Hemisphere” – from Greek: hēmi- "half" + sphaira "sphere"
• Loony/lunatic – from Latin “luna” – the moon

Links to culture
• “Light year” often thought of as a time, not a distance.
• Science fiction showing journeys to the stars – needing travel faster-than-light.

History
• “The space race” in the 1960s</td></tr>
<tr><td>12-Jan</td><td>A</td><td>17</td></tr>
<tr><td>19-Jan</td><td>B</td><td>18</td></tr>
<tr><td>26-Jan</td><td>A</td><td>19</td></tr>
<tr><td>2-Feb</td><td>B</td><td>20</td></tr>
<tr><td>9-Feb</td><td>A</td><td>21</td></tr>
</table>

Now that the revised curriculum has been taught, please consider the Implementation and Impact of the curriculum you taught. What changes might need to be made to the Curriculum Intent (See Curriculum Map and Overviews) in light of this year's experiences?

			O Long answer extension question at the end of the unit Application task **Common misconceptions** • Mass and weight are the same thing • The sun is yellow • There is no gravity in space • You can hear sounds in space • Mercury is the hottest planet	• Astronauts "bunny hopping" on the moon • Role of black, female, "human computers" as shown in "Hidden Figures" (2016) • 2020 SpaceX/Dragon take off – May 2020 • Galileo trying (failing) to measure speed of light. Current value decided in 1983 Career ideas: Astronaut, meteorologist, astronomers, aeronautical engineer, telecommunications engineer, robotics engineer, astrophysicist. Equality Diversity and Inclusion (EDI) links? EDI links: • Valentina Tereshkova was the first woman in space • Peggy Whitson holds the US record for the most time spent in space at 665 days. • Kitty O'Brien Joyner was NASA's first female engineer • Sally Ride- Astronaut, first American woman and 3rd woman in space. • Young scientist-Katie Bouman- led the development of an algorithm for imaging black holes, known as Continuous High-resolution Image Reconstruction using Patch priors (CHIRP), and was a member of the Event Horizon Telescope team that captured the first image of a black hole. • Katherine Johnson-Calculated flight paths of space craft • Helen Sharman – first British Astronaut LGBT+ History month 27/1 Holocaust memorial day 1/2 World Hijab Day 6/2-12/2 Children's mental health week. 7/2 Safer internet day 10/2 Chinese New Year
Half-Term			6 weeks (6 lessons) (28 Days)	
23-Feb	B	22		• Foundational Concepts • Tier 2/3 Vocabulary • Links to wider disciplinary knowledge/cultural capital: history, culture, authentic artefacts, music, art(ists), literature? • Careers links • ***Equality Diversity and Inclusion (EDI) links?*** *Women's history month* *Ramadhan begins* *World Down Syndrome day* *Transgender day of visibility* **Assessment** (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.)
2-Mar	A	23		
9-Mar	B	24		
16-Mar	A	25		
23-Mar	B	26		
30-Mar (finish Wednesday 1st April)	A	27		
Easter Holiday			5 weeks (5 lessons) (24 Days)	
20-Apr	B	28		• Foundational Concepts

27-Apr	A	29		• Tier 2/3 Vocabulary • Links to wider disciplinary knowledge/cultural capital: history, culture, authentic artefacts, music, art(ists), literature? • Careers links • ***Equality Diversity and Inclusion (EDI) links?*** *Good Friday* *Easter Sunday* *Autism and stress awareness month.* *World Malaria Day* *Lesbian visibility day* *UK national walking month.* *Deaf awareness week* **Assessment** (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.)
4-May (Bank holiday Mon)	B	30		
11-May	A	ST2		
18-May	B	ST2		
Half-Term			7 weeks (7 lessons) (35 Days)	
1-Jun	A	33		• Foundational Concepts • Tier 2/3 Vocabulary • Links to wider disciplinary knowledge/cultural capital: history, culture, authentic artefacts, music, art(ists), literature? • Careers links • ***Equality Diversity and Inclusion (EDI) links?*** *LGBTQ+ pride month.* *Gypsy, Roma and Traveller history month.* *world day against child labour* *autistic pride day* *World refugee day* **Assessment** (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.)
9-Jun	B	34		
16-Jun	A	35		
23-Jun	B	36		
30-Jun	A	37		
7-Jul	B	38		
14-Jul	A	39		
(Total: 190 Days)				

Overview of Year 7	
Based on your Flight Path	**By the end of Year 7, students will have learned**
GW:	• State different examples of contact and non-contact forces. • Be able to describe the effect of balanced and unbalanced forces • Know how to represent forces as arrows • Know how to calculate speed using speed = distance/time • Understand the basics of particle theory, including the arrangements and movement of particles • Understand how particle theory describes changes of state, shape and density • State examples of energy • Recognise conservation of energy

Now that the revised curriculum has been taught, please consider the Implementation and Impact of the curriculum you taught. What changes might need to be made to the Curriculum Intent (See Curriculum Map and Overviews) in light of this year's experiences?

	• Know the different types of energy stores and how to write an energy transfer. • Identify useful and wasted energy • Know what is meant by a fuel • Know that food is a type of fuel • Know Weight = mass x gravitational field strength • Describe our solar system as being made up of the sun and a series of different planets. • Know about stars and galaxies. • Understand how day and night occurs • Understand how the different seasons occur • Understand the phases of the moon
BI:	• Describe the difference between mass and weight. • Know how to calculate resultant force and the effect of resultant force • Understand friction, including air resistance, as a force and how it can be reduced • Know how to calculate speed using speed = distance/time • Be able to describe Brownian motion • Know how to measure the energy in food and compare food labels • Describe thermal energy transfers by conduction, convection and radiation. • Describe the purpose of insulation • Understand the difference between weight and mass • Understand that weight is caused by the non-contact force called gravity • Carry out calculations to show the difference in weight on the same object on different planets. • Understand what a satellite is • Describe uses of artificial satellites
EW:	• Know how extension and force are linked in a spring. Hooke's law Force = Spring constant x extension • Explain why some objects float and others sink • Represent journeys using distance-time graphs and be able to interpret them • Explain the difference between heat and temperature • Compare the three methods of heat transfer • Understand the difference between weight and mass • Carry out calculations to show the difference in weight on the same object on different planets. • Know Weight = mass x gravitational field strength • Explain how a lunar and solar eclipse occur

Prompt Questions

Now that the revised curriculum has been taught, please consider the Implementation and Impact of the curriculum you taught. What changes might need to be made to the Curriculum Intent (See Curriculum Map and Overviews) in light of this year's experiences?

Please revisit the prompts from last year:

- What are the Key concepts for this unit?
- How will it link to wider disciplinary knowledge/cultural capital: history, culture, authentic artefacts, music, art, literature?
- How does it build on prior knowledge and link to other units, concepts, years, GCSE?
- What is it intended students will have learned?
  - For each Unit? By the end of the Year?
    - GW: ; BI: ; EW
- Is it worth summarising in a knowledge organiser?
- **Assessment: how do you know they have learned the foundational concepts, curriculum and wider disciplinary knowledge? Does assessment look like GCSE light? Should it?**
- Skills used/learned
- Tier 2/3 vocabulary ((Etymology e.g. of Greek/Latin)

- How will you assess students understanding?
- How will written feedback be given?
- How can lessons be adapted?