Year 7 Physics Learning Journey

Energy stores and transfers

Autumn Term

Core knowledge
1. State the units of measurement for temperature and energy.
2. Recall the different ways in which energy can be stored.
3. Describe the different ways in which energy is transferred and identify situations in which an energy transfer is taking place.
4. Recall the law of conservation of energy.
5. Identify examples of 'useful' and 'wasted' energy.
6. Describe what efficiency means and calculate energy efficiency.
7. State what is meant by a non-renewable energy resource.
8. Describe what fossil fuels are and how they formed.
9. Describe the advantages and disadvantages of using fossil fuels.
10. Describe how nuclear fuels are used to generate electricity in nuclear power stations and discuss its advantages and disadvantages.
11. State what is meant by a renewable energy resource.
12. Describe how different renewable energy resources are used to generate electricity (hydroelectricity, geothermal, solar, wind, tidal, biofuels).
13. Describe the advantages and disadvantages of different renewable energy sources.

Learning Checkpoints

Learning Checkpoint Title	Attempt 1		Attempt 2/ Extend	
	Mark	RAG	Mark	RAG

Key Vocabulary
Tier 2 – State, Recall, efficiency, advantages, disadvantages
Tier 3 – joule, renewable resource, non-renewable resource, thermal, kinetic, gravitational

Year 7 Physics Learning Journey

Forces

Spring Term

Core knowledge
1. Name the three states of matter and give examples of each state.
2. Name forces and classify them as contact or non-contact forces.
3. Represent the size and direction of forces using arrows.
4. Identify balanced and unbalanced forces and describe the effects balanced and unbalanced forces on stationary and moving objects.
5. Work out the resultant of two forces acting along the same line.
6. Describe how mass and weight are measured and state their units.
7. State what 'extension' and 'compression' means.
8. Describe how the extension of a spring depends on the force applied.
9. Investigate how the extension of a spring depends on the force applied and plot a graph to show force vs. extension and draw a line of best fit.
10. State what is meant by friction.
11. Explain some ways in which friction can be changed.
12. State what is meant by pressure and how it depends on force and area.
13. Calculate pressure and recall its units.

Learning Checkpoints

Learning Checkpoint Title	Attempt 1		Attempt 2/ Extend	
	Mark	RAG	Mark	RAG

Key Vocabulary
Tier 2 – Name, classify, represent, extend, compress
Tier 3 – Force, Weight, Mass, Balanced forces, Unbalanced forces, Pressure

Year 7 Physics Learning Journey

Motion

Summer Term

Core knowledge
1. Describe the meaning of speed.
2. Explain how the distance travelled and the time taken affects the speed.
3. Use the formula relating speed, distance and time.
4. Represent simple journeys on a distance-time graph.
5. Describe changes of speed shown on a distance-time graph.
6. Calculate speeds from the gradient of a distance-time graph.
7. Explain why the maximum speed on a journey is usually greater than the mean speed.
8. Explain what relative speed means.
9. Calculate the relative speed between two objects moving along the same line.
10. Change the subject of a simple mathematical formula.
11. Calculate the gradient of a line on a graph.

Learning Checkpoints

Learning Checkpoint Title	Attempt 1		Attempt 2/ Extend	
	Mark	RAG	Mark	RAG

Key Vocabulary
Tier 2 – gradient, formula, calculate, change, represent
Tier 3 - speed, distance, time, gradient, journey, axis