

**Wah Yan College Kowloon**  
**F.4 Physics Scheme of Work (2017-2018)**

<b>Textbook</b>	1. New Senior Secondary Physics at Work 2 - Force and Motion (for Physics, 2 <sup>nd</sup> Edition) 2. New Senior Secondary Physics at Work 3B - Wave Motion II (for Physics, 2 <sup>nd</sup> Edition)
<b>Other Resources</b>	

◆**Repertoire of Self-directed Learning Skills:**

1. reading to learn, 2. notes-taking, 3. looking up words in the dictionary, 4. pre-lesson preparation, 5. group discussion, 6. group presentation, 7. initiative to ask questions, 8. setting learning objectives and doing reflection, 9. eLearning platform with instant feedback, 10. flipped classroom, 11. peer assessment, 12. searching for information on the internet, 13. project learning, 14. training of higher-order thinking skills, etc.

**SL:** Scheduled number of lessons

**AL:** Actual number of lessons

School Term	Weeks	Topics/ Extended Parts*	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Self-directed Learning Skills◆	Values <sup>#</sup>	Basic Law Education*	Consolidation and Assessment
<b>First Term (3/9/2017- 30/12/2017, Weeks 1-17)</b>	1-2	Motion (I)					II		
		1.1 Length and time	1 Length 2 Time	1	<i>Simulation</i> 1.1 Reaction time <i>Video</i> 1.1 Expt 1a - Reducing percentage error <i>DIY corner</i> Reaction time	1 and 2			Measuring time  Checkpoint 1  Practice 1.1
		1.2 Distance and displacement	1 Describing changes in position	1	<i>Simulation</i> 1.2 Distance and displacement	1 and 2			Distance posts  Checkpoint 2

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			2 Vectors and scalars 3 Total displacement a Displacement along a straight line b Displacement on a plane						Practice 1.2
		1.3 Speed, velocity and acceleration	1 Speed a Average speed b Instantaneous speed 2 Velocity a Average velocity b Instantaneous velocity 3 Acceleration	2	<i>Simulation</i> 1.3 Average speed and instantaneous speed	1 and 2			Time of travel Checkpoint 3 Checkpoint 4 Checkpoint 5 Practice 1.3

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		1.4 Motion along a straight line	1 Expressing vectors along a straight line 2 Accelerated motion a Magnitude of acceleration b Direction of acceleration i  Direc tion of accelerat ion and direction of motion ii Motion with a change in direction	2 + 1 (for proble m solving and revision )	<i>Simulation</i> 1.4 Expressing vectors along a straight line <i>DIY corner</i> Observing motion with a change in direction	1 and 2			Which one has a higher acceleration?  Checkpoint 6  Checkpoint 7  Practice 1.4  Revision exercise 1
	3-5	Motion (II)							
		2.1 Graphs of	1	4	<i>Simulation</i>	1 and 2			Who leads?

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		straight-line motion	<p>Displacement–time graphs</p> <p>2 Velocity–time graphs</p> <p>a Slope of a velocity–time graph</p> <p>b Area under a velocity–time graph</p> <p>3 Acceleration–time graphs</p> <p>4 Relation between motion graphs</p> <p>a Uniform motion</p> <p>b Uniformly accelerated motion</p> <p>i Without a change in</p>		<p>2.1 Displacement–time graphs</p> <p>2.2 Velocity–time graphs</p> <p>2.3 Relations between motion graphs</p> <p>2.4 Motion graphs</p> <p>2.5 Draw your own <math>v-t</math> graphs</p> <p>2.6 Studying motion using a motion sensor</p> <p>2.7 Acceleration down a slope</p> <p><i>Video</i></p> <p>2.1 Expt 2a - Using a motion sensor</p> <p>2.2 Expt 2b - Acceleration along a slope</p>				<p>Checkpoint 1</p> <p>Checkpoint 2</p> <p>Checkpoint 3</p> <p>Checkpoint 4</p> <p>Practice 2.1</p>

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			<ul style="list-style-type: none"> <li>moving direction</li> <li>ii With a change in moving direction</li> <li>5 Other motion graphs</li> <li>6 Motion analyzing tools               <ul style="list-style-type: none"> <li>a Data-logging system                   <ul style="list-style-type: none"> <li>i Sensing motion</li> <li>ii Reading graphs</li> </ul> </li> <li>b Motion video analysis</li> </ul> </li> </ul>		2.3 Motion video analysis (of 50 m sprint)				
		2.2 Equations of uniformly accelerated motion	<ul style="list-style-type: none"> <li>1 Deriving the equations of motion</li> <li>2 Applying the equations of</li> </ul>	3		1 and 2			Safe gap between cars  Checkpoint 5

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			3 motion Equations of motion and motion graphs						Checkpoint 6  Practice 2.2
		2.3 Free fall motion	1 Acceleration due to gravity 2 Vertical motion under gravity	2 + 2 (for proble m solving and revision )	<i>Simulation</i> 2.8 Acceleration of free fall 2.9 Motion under gravity <i>Video</i> 2.4 Expt 2c - The 'coin' and 'feather' experiment 2.5 Expt 2d - Measuring the acceleration of free fall 2.6 Expt 2e - Vertical motion under gravity	1 and 2			Which one falls faster?  Checkpoint 7  Checkpoint 8  Practice 2.3  Revision exercise 2
	5-6	Force and Motion (I)					III		
		3.1 Introduction	1 Some basic	1	<i>Video</i>	1 and 2			Force behind

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		to forces	<p>understanding about forces</p> <p>2 Daily life examples of forces</p> <p>a Contact forces</p> <p>i Friction</p> <p>ii Tension</p> <p>iii Normal force</p> <p>b Non-contact forces</p> <p>i Weight</p> <p>ii Electric and magnetic forces</p> <p>3 Free-body diagrams</p> <p>4 Net force</p>		3.1 Floating globe				<p>the fun</p> <p>Checkpoint 1</p> <p>Practice 3.1</p>
		3.2 Inertia and Newton's first law	<p>1 Is a force needed to keep a body moving?</p> <p>2 Inertia and mass</p> <p>3 Newton's first law of motion</p>	1.5	<p><i>Video</i></p> <p>3.2 Pin-and-pendulum experiment</p> <p>3.3 Expt 3a - Motion with</p>	1 and 2			<p>In an MTR train</p> <p>Checkpoint 2</p> <p>Practice 3.2</p>

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					and without friction 3.4 Inertia and mass <i>DIY corner</i> Motion of a balloon puck Some tricks of inertia				
		3.3 Net force and motion: Newton's second law	1 Acceleration and net force 2 Acceleration and mass 3 Newton's second law of motion	1.5	<i>Simulation</i> 3.1 Acceleration and net force 3.2 Acceleration and mass <i>Video</i> 3.5 Expt 3b - Acceleration and net force 3.6 Expt 3c - Acceleration and mass	1 and 2			Which string will break first?  Checkpoint 3  Checkpoint 4  Practice 3.3
		3.4 Weight, friction and fluid resistance	1 Weight a Mass and weight b Measuring	2	<i>Simulation</i> 3.3 Apparent weight in a lift <i>Video</i>	1 and 2			Landing of Curiosity  Checkpoint 5



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			mass and weight c Feeling of weight in a lift 2 Friction 3 Fluid resistance		3.7 Gravitational force on the Moon 3.8 Apparent change in weight in a lift 3.9 Skydiving				Checkpoint 6  Practice 3.4
		3.5 Action and reaction: Newton's third law	1 Paired forces 2 Action-and-reaction pairs	1 + 2 (for problem solving and revision)	<i>Video</i> 3.10 Expt 3d - Paired force 3.11 Expt 3e - Newton's third law 3.12 The fan cart <i>DIY corner</i> Little water rocket	1 and 2			How to win in a Sumo match  Checkpoint 7  Practice 3.5  Revision exercise 3
	7	Force and Motion (II)							
		4.1 Addition and resolution of forces	1 Adding forces a Parallel forces b Forces in all directions 2 Resolving forces into components	2	<i>Simulation</i> 4.1 Addition of vectors 4.2 Addition of forces 4.3 Resolving forces	1 and 2			Rock climbing  Checkpoint 1  Checkpoint 2  Checkpoint 3

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			3 Adding forces algebraically		<i>Video</i> 4.1 Addition of forces 4.2 Expt 4a - Addition of forces				Practice 4.1
		4.2 Forces in a plane and Newton's laws of motion		2 + 1 (for problem solving and revision)	<i>Simulation</i> 4.4 Acceleration of an object	1 and 2			Helicopters Checkpoint 4 Checkpoint 5 Practice 4.2 Revision exercise 4
	8	Moment of a Force							
		5.1 The turning effect of a force	1 Moments 2 Addition of moments a Net moment b Couples	2	<i>Simulation</i> 5.1 Addition of torques <i>Video</i> 5.1 Expt 5a - Turning effect of a force	1 and 2			Opening a can Checkpoint 1 Checkpoint 2 Practice 5.1

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					5.2 Expt 5b - Addition of moments				
		5.2 Equilibrium of a rigid body	1 Conditions for equilibrium 2 Centre of gravity	2 + 1 (for proble m solving and revision )	<i>Simulation</i> 5.2 Conditions for equilibrium <i>Video</i> 5.3 Expt 5c - Locating the centre of gravity <i>DIY corner</i> Locating c.g. Centre of gravity trick	1 and 2			A pen standing on the table  Checkpoint 3  Checkpoint 4  Checkpoint 5  Practice 5.2  Revision exercise 5
	9-10	Work, Energy and Power							
		6.1 Work and energy transfer	1 Work: a way of energy transfer a Parallel cases b Work and energy change	2		1 and 2			Holding a large pumpkin  Checkpoint 1  Practice 6.1

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			c Non-parallel cases 2 Total work done						
		6.2 Kinetic energy and potential energy	1 Kinetic energy 2 Potential energy a Elastic potential energy b Gravitational potential energy	2	<i>Simulation</i> 6.1 Kinetic energy 6.2 Gravitational potential energy	1 and 2			Who gains more potential energy?  Checkpoint 2  Checkpoint 3  Practice 6.2
		6.3 Energy changes and conservation of energy	1 Conservation of energy 2 Examples: sum of KE and PE constant a Simple pendulum b Bungee jumping 3 Examples: sum of KE and PE not constant	3	<i>Simulation</i> 6.3 Energy changes in a rising/falling object 6.4 Energy changes in a simple pendulum 6.5 Energy changes in motion on an	1 and 2			Roller coasters  Checkpoint 4  Checkpoint 5  Practice 6.3

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			a Braking b Roller coasters c Diving		inclined plane <i>Video</i> 6.1 Magic can 6.2 Expt 6a - Energy changes in a simple pendulum <i>DIY corner</i> Design your own roller coaster				
		6.4 Power	1 Definition of power 2 Power and velocity	1 + 2 (for proble m solving and revision )		1 and 2			Who is more powerful?  Checkpoint 6  Practice 6.4  Revision exercise 6
	11-12	Momentum			Lab				
		7.1 Conservatio n of momentum	1 Velocity, mass and collision 2 Law of conservation of	3	<i>Simulation</i> 7.1 Collisions of trolleys (sticking	1 and 2			What quantity is conserved?  Checkpoint 1

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			<p>momentum</p> <p>3 Examples of conservation of momentum</p> <p>a Newton's cradle</p> <p>b Recoil of guns and cannons</p> <p>c Spacecraft</p> <p>4 Momentum not conserved?</p>		<p>together)</p> <p>7.2 Collisions of trolleys (elastic collision)</p> <p>7.3 'Explosion' of trolleys</p> <p>7.4 Exploring collisions</p> <p>7.5 Newton's cradle</p> <p>7.6 Adding mass while moving</p> <p>7.7 Shedding mass while moving</p> <p><i>Video</i></p> <p>7.1 Expt 7a - Trolley crash (sticking together)</p> <p>7.2 Expt 7b - Some more crashes</p> <p>7.3 Expt 7c - 'Explosion'</p> <p>7.4 Stop shot</p> <p>7.5 Expt 7d - Newton's cradle</p>				<p>Checkpoint 2</p> <p>Practice 7.1</p>

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					7.6 Conservation of momentum <i>DIY corner</i> Is momentum conserved?				
		7.2 Change in momentum	1 Newton's second law and change in momentum 2 Newton's third law and conservation of momentum 3 Impact a Force of impact b Change in momentum c Net force and time of impact	3 + 2 (for problem solving and revision)	<i>Simulation</i> 7.8 Net force and time of impact <i>Video</i> 7.7 Expt 7e - Investigating the force of impact <i>DIY corner</i> Bouncing balls	1 and 2			Egg drop competition  Checkpoint 3  Checkpoint 4  Practice 7.2  Revision exercise 7
	13	Projectile Motion							
		8.1 Horizontally projected motion	1 Vertical and horizontal	2	<i>Simulation</i> 8.1 'Smart missile'	1 and 2			Objects moving in the

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			<p>motions</p> <p>2 Horizontally projected motion</p>		<p><i>Video</i></p> <p>8.1 Expt 8a - 'Monkey and hunter' experiment</p> <p>8.2 Expt 8b - A ball projected horizontally</p>				<p>air</p> <p>Checkpoint 1</p> <p>Checkpoint 2</p> <p>Practice 8.1</p>
		8.2 General projectile motion	<p>1 Projectile launched at an angle</p> <p>2 A special case</p> <p>3 General projectile motion</p> <p>4 Energy change in projectile motion</p> <p>5 Projectile with air resistance</p>	2 + 2 (for problem solving and revision)	<p><i>Simulation</i></p> <p>8.2 Range and angle of projection</p> <p><i>Video</i></p> <p>8.3 Expt 8c - Range and angle of projection</p> <p><i>AR</i></p> <p>Motorcycle jump</p>	1 and 2			<p>Motorcycle jump</p> <p>Checkpoint 3</p> <p>Checkpoint 4</p> <p>Checkpoint 5</p> <p>Practice 8.2</p> <p>Revision exercise 8</p>
	14-16	Examination							
<b>Second Term</b>	18-19	Uniform Circular Motion			Lab				



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(31/12/2017-18/7/2018, Weeks 18-46)		9.1 Introduction to circular motion	1 Describing circular motion a Angular displacement and angular velocity b Linear speed and angular speed c Period 2 Centripetal acceleration	2		1 and 2			Merry-go-round  Checkpoint 1  Checkpoint 2  Practice 9.1
		9.2 Centripetal force	1 Centripetal force 2 Verifying equation of centripetal force 3 Centripetal force and Newton's first law of motion 4 Daily examples of uniform circular motion a Cars making turns on a	3 + 2 (for problem solving and revision)	<i>Simulation</i> 9.1 Horizontal circular motion 9.2 Making turns on banked roads <i>Video</i> 9.1 Interlocking puzzle 9.2 Expt 9a - Verifying equation of centripetal force	1 and 2			Interlocking puzzle  Checkpoint 3  Checkpoint 4  Checkpoint 5  Practice 9.2  Revision exercise 9

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			level road b Making turns on banked roads c Aeroplanes making turns d The 'rotor' in an amusement park		9.3 Centripetal force and inertia 9.4 Skidding of a car 9.5 A tilted aeroplane 9.6 Unlock the puzzle				
	19-20	Gravitation			Centripetal force				SBA trial
		10.1 Newton's law of universal gravitation	1 Newton's law of universal gravitation 2 Mass, weight and acceleration due to gravity 3 Gravitational field 4 Gravitational field strength and acceleration due to gravity	2	<i>Simulation</i> 10.1 Newton's law of universal gravitation 10.2 Vertical motion on different planets	1 and 2			Newton and universal gravitation Checkpoint 1 Checkpoint 2 Checkpoint 3 Practice 10.1

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		10.2 Circular motion under gravity		3 + 2 (for problem solving and revision)	<i>Video</i> 10.1 Weightlessness in space	1 and 2			What's wrong?  Checkpoint 4  Practice 10.2  Revision exercise 10
	21	Problem solving		4		1, 2 and 4			
	22-23	Nature of Waves					I		
		4.1 Wave motion	1 Waves and vibrations 2 Waves, energy and matter 3 Transverse and longitudinal waves	1	<i>Simulation</i> 4.1 Transverse wave 4.2 Longitudinal wave <i>Video</i> 4.1 Expt 4a - Transverse pulses and waves 4.2 Expt 4b - Longitudinal pulses and waves	1 and 2			Communication between elephants  Checkpoint 1  Practice 4.1
		4.2 Particle	1 Describing	4	<i>Simulation</i>	1 and 2			The Mexican

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		vibrations and wave motion	particle vibrations a Amplitude b Period c Frequency 2 Describing wave motion a Amplitude b Wavelength c Period d Frequency e Wave speed 3 Particle vibrations and wave motion a Linking particle vibrations to wave motion b Direction of motion of particles		4.3 Amplitude, wavelength, period and frequency of transverse waves 4.4 Particle movement and wave motion  <i>Video</i> 4.3 Expt 4c - The transverse wave model 4.4 Expt 4d - Particle speed and wave speed 4.5 Expt 4e - Factors affecting the wave speed along a spring				wave  Checkpoint 2  Checkpoint 3  Checkpoint 4  Checkpoint 5  Practice 4.2

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			c Phase i In phase ii Out of phase 4 Particle speed and wave speed						
		4.3 Graphical descriptions of transverse waves	1 Graphical description of wave motion 2 Graphical description of particle vibration	2 + 2 (for proble m solving and revision )		1 and 2			Seismographs  Checkpoint 6  Checkpoint 7  Practice 4.3  Revision exercise 4
	24-25	Lunar New Year holiday							
	26-28,3 2	Wave Phenomena and Stationary Waves							
		5.1 Studying wave phenomena using water	1 Observing water waves in a ripple tank 2 Straight waves	1	<i>Video</i> 5.1 Expt 5a - Producing waves in a	1 and 2			Bright and dark  Checkpoint 1

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		waves	and circular waves 3 Frequency, wavelength and speed 4 Wavefronts and direction of propagation		ripple tank				Practice 5.1
		5.2 Wave phenomena: reflection and refraction	1 Reflection of waves a Reflection of straight waves b Reflection of circular waves 2 Refraction of waves a Change in wavelength and wave speed b Change in wave direction	4		1 and 2	II		
		5.3 Wave phenomena:	1 Diffraction: spreading of	2	<i>Simulation</i> 5.6 Diffraction of	1 and 2			Semicircular beaches

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		diffraction	<p>waves</p> <p>2 Factors affecting the degree of diffraction</p>		<p>water waves</p> <p>5.7 Diffraction of waves</p> <p><i>Video</i></p> <p>5.4 Expt 5d - Diffraction of water waves</p>				<p>Checkpoint 4</p> <p>Practice 5.3</p>
		5.4 Wave phenomena: interference	<p>1 Interference of waves</p> <p>2 Superposition of two waves</p> <p>3 Understanding the interference pattern</p> <p>a Using phase difference</p> <p>b Using path difference</p> <p>4 Nodal lines and antinodal lines</p> <p>5 Conditions for steady interference patterns</p> <p>6 Factors affecting</p>	4	<p><i>Simulation</i></p> <p>5.8 Interference of water waves</p> <p>5.9 Adding pulses</p> <p>5.10 Constructive and destructive interference</p> <p>5.11 Interference patterns</p> <p><i>Video</i></p> <p>5.5 Expt 5e - Producing interference patterns</p> <p>5.6 Expt 5f - Adding pulses</p> <p>5.7 Expt 5g- Factors</p>	1 and 2			<p>Crossing of two waves</p> <p>Checkpoint 5</p> <p>Checkpoint 6</p> <p>Practice 5.4</p>

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			<p>the interference pattern</p> <p>7 Diffraction and interference as the tests for waves</p>		<p>affecting the interference pattern</p>				
		5.5 Stationary waves	<p>1 Stationary waves on a spring</p> <p>2 How is a stationary wave formed?</p> <p>3 Characteristics of stationary waves</p> <p>a Amplitudes of particle vibrations</p> <p>b Phase relationships of neighbouring particles</p>	3 + 2 (for problem solving and revision)	<p><i>Simulation</i></p> <p>5.12 Stationary waves</p> <p><i>Video</i></p> <p>5.8 Expt 5h - Stationary waves</p> <p>5.9 Expt 5i - The transverse stationary wave model</p> <p>5.10 Expt 5j - Transverse stationary waves on an elastic string</p> <p>5.11 Stroboscope</p>	1 and 2			<p>Is a wave formed on a guitar string?</p> <p>Checkpoint 7</p> <p>Checkpoint 8</p> <p>Practice 5.5</p> <p>Revision exercise 5</p>



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			c Transmission of energy 4 Transverse stationary waves on an elastic string						
	29	Uniform Test							
	30-31	Easter Holiday							
	33	Problem solving		4		1, 2 and 4	V		
	34-36	Wave Nature of Light and Electromagnetic Waves							
		6.1 Wave nature of light	1 Light: particles or a wave? a Diffraction of light i Diffraction pattern of light ii Effects of colour iii Effects of slit	2	<i>Simulation</i> 6.1 Diffraction pattern of light <i>Video</i> 6.1 Expt 6a - Diffraction of light 6.2 Expt 6b - Interference of light	1 and 2			What is the nature of light?  Checkpoint 1  Practice 6.1

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			width b Interference of light c Wave nature of light 2 Ray model or wave model?						
		6.2 Young's double slit experiment and the plane transmission grating	1 Young's double slit experiment a Set-up and precautions b Factors affecting the interference pattern i Slit separation ii Wavelength iii Slit-screen distance 2 Plane transmission grating	4	<i>Simulation</i> 6.2 Interference pattern of light <i>Video</i> 6.3 Expt 6c - Estimating the wavelength of light using a double slit 6.4 Expt 6d - Plane transmission grating 6.5 Expt 6e - Estimating the wavelength of light using a grating	1 and 2			Colourful wings of butterflies  Checkpoint 2  Checkpoint 3  Checkpoint 4  Checkpoint 5  Practice 6.2

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			a Interference patterns formed by a plane transmission grating b Factors affecting the interference pattern i Grating spacing ii Wavelength iii Grating-screen distance						
		6.3 Electromagnetic waves	1 'Light' outside the colour spectrum 2 Light as electromagnetic waves 3 Properties of electromagnetic	3 + 2 (for problem solving and revision)	<i>Video</i> 6.6 Expt 6f - Beyond the visible spectrum 6.7 Expt 6g - Wave phenomena	1 and 2			Variation of temperature in our body  Checkpoint 6  Checkpoint 7

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			waves 4 Different kinds of electromagnetic waves a Infra-red (IR) radiation b Ultra-violet (UV) radiation c Radio waves d Microwaves e X-rays f Gamma rays		exhibited by microwaves 6.8 Thermographs 6.9 An experiment showing the data transmission by infra-red radiation				Practice 6.3  Revision exercise 6
	36-39	Sound							
		7.1 Longitudinal waves	1 Particle vibrations and wave motion 2 Graphical description of longitudinal waves a	3	<i>Simulation</i> 7.1 Amplitude, wavelength, period and frequency of longitudinal waves  <i>Video</i>	1 and 2			Observing a longitudinal wave  Checkpoint 1  Checkpoint 2

School Term	Weeks	Topics/ Extended Parts*	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Self-directed Learning Skills♦	Values#	Basic Law Education*	Consolidation and Assessment
			<p>Displacement–distance graph</p> <p>b</p> <p>Displacement–time graph</p>		7.1 Expt 7a - The longitudinal wave model				<p>Checkpoint 3</p> <p>Practice 7.1</p>
		7.2 Wave nature of sound	<p>1 Sound is produced by vibrations</p> <p>2 Nature of sound</p> <p>a Sound as a longitudinal wave</p> <p>b Sound as a mechanical wave</p> <p>3 ‘Seeing’ sound</p> <p>4 Wave phenomena of sound</p> <p>a Reflection of sound</p>	2	<p><i>Video</i></p> <p>7.2 Chirping ruler</p> <p>7.3 Sound wave through air</p> <p>7.4 Expt 7b - Diffraction of sound</p> <p>7.5 Expt 7c - Interference of sound</p> <p>7.6 Interference of sound</p> <p><i>DIY corner</i></p> <p>Vibration and sound</p>	1 and 2			<p>Loudspeakers</p> <p>Checkpoint 4</p> <p>Practice 7.2</p>

School Term	Weeks	Topics/ Extended Parts*	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Self-directed Learning Skills♦	Values#	Basic Law Education*	Consolidation and Assessment
			b Refraction of sound c Diffraction of sound d Interference of sound						
		7.3 Properties of sound	1 Speed of sound 2 Audible sound and ultrasound a Audible frequency range b Ultrasound 3 Comparing sound and light waves	2	<i>Simulation</i> 7.2 Audible sound <i>Video</i> 7.7 Expt 7d - Speed of sound in air 7.8 Expt 7e - Audible frequency range	1 and 2			Estimate the distance to a thunderstorm  Checkpoint 5  Practice 7.3
		7.4 Musical notes and noise	1 Describing musical notes a Pitch b Loudness c Quality 2 Sound intensity level 3 Noise pollution	2 + 2 (for problem solving and revision)	<i>Simulation</i> 7.3 Quality of sound <i>Video</i> 7.9 Expt 7f - Musical notes 7.10 Bird flute <i>DIY corner</i>	1 and 2			Singing notes  Checkpoint 6  Checkpoint 7  Practice 7.4

School Term	Weeks	Topics/ Extended Parts*	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Self-directed Learning Skills <sup>♦</sup>	Values <sup>#</sup>	Basic Law Education*	Consolidation and Assessment
			a How noise affects you b Acoustic protection		Making a pipe				Revision exercise 7
	40-42	Final Exam			Music workshop		I, II, III		
	43-46	Post Exam							

\* The extended parts should be marked with asterisks. These parts should be more challenging and can be covered when the students can master the knowledge and skills covered in the conventional topics.

\* Check the appropriate box with a “√” if Basic Law Education can be promoted when covering a particular topic.

**# Core Values of Wah Yan College, Kowloon**

I. Love and care	1. Accept & feel positive about himself 2. Appreciation & Gratitude 3. Empathy & Compassion	4. Forgiveness & Reconciliation 5. Service 6. Family as a basic unit of society; marriage is the foundation of a family
II. Strive for excellence	7. Reflective 8. Commitment 9. Perseverance	10. Curiosity & willingness to learn 11. Value imagination and creativity
III. Respect and Justice	12. Life is valuable and respectable 13. Openness to good in all things 14. Respect for himself & others	15. Integrity 16. Faithfulness
IV. Responsibility	17. Freedom & Self-discipline 18. Care for the environment	19. Social Identities: citizen identity, national identity and global citizen identity

V. Faith	20. Experience of God 21. Explore & practise one's faith	22. Appreciate religious liturgies
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