

Curriculum Map

Subject: IPC	Grade Level: 9	Sixth Week: 3 rd	Week: 1
Instructional Focus Summary	<p>Chapter 11 Waves</p> <p>Students will recognize that waves carry energy but not matter, define mechanical waves, and distinguish between transverse waves and compressional waves. Students will compare and contrast transverse and compressional waves, describe the relationship between frequency and wavelength, and calculate wave speed. Students will identify the law of reflection, recognize what makes waves bend, and explain how waves combine.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p>(Power TEKS/Student Expectations are Underlined)</p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>IPC.1 Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.</u></p> <p><u>(A) demonstrate safe practices during field and laboratory investigations</u></p> <p><u>IPC.2 Scientific processes. The student uses scientific methods during field and laboratory investigations.</u></p> <p><u>(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology</u></p> <p><u>(B) collect data and make measurements with precision</u></p> <p><u>(C) organize, analyze, evaluate, make inferences, and predict trends from data</u></p> <p><u>(D) communicate valid conclusions</u></p> <p><u>IPC.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u></p> <p>(E) research and describe the history of physics, chemistry, and contributions of scientists</p> <p><u>IPC.5 Science concepts. The student knows the effects of waves on everyday life.</u></p> <p><u>(A) demonstrate wave types and their characteristics through a variety of activities such as modeling with ropes and coils, activating tuning forks, and interpreting data on seismic waves</u></p> <p><u>(B) demonstrate wave interactions including interference, polarization, reflection, refraction, and resonance within various materials</u></p> <p><u>(D) demonstrate the application of acoustic principles such as in echolocation, musical instruments, noise pollution, and sonograms</u></p>		
Concepts/ Vocabulary	<p>Amplitude Compressional wave Crest Diffraction Frequency Interference Medium Rarefaction Refraction Resonance Standing wave Transverse wave Trough Wave wavelength</p>		
Resources	TWE – Teacher Wraparound Edition		

	CRB – Chapter Resources Booklet TCR – Teacher Classroom Resources
Instructional Activities	Mini lab: Experimenting With Resonance p. 347 Activity: Measuring Wave Properties pp.348 - 349
Assessment	Chapter Assessment, pp. 354 - 355 Chapter Test, pp. 39 - 42
Integration	
Intervention	
Extension	

Subject: IPC	Grade Level: 9	Sixth Week: 3 rd	Week: 2
<p>Instructional Focus Summary</p>	<p><u>Chapter 12 Sound</u></p> <p>Students will explain how sound travels through different mediums, identify what influences the speed of sound, and describe how the ear enables you to hear. Students will recognize how amplitude, intensity, and loudness are related, describe how sound intensity is measured and what levels can damage hearing, explain the relationship between frequency and pitch, and discuss the Doppler effect. Students will distinguish between noise and music, describe why different instruments have different sound qualities, explain how string, wind, and percussion instruments produce music, and describe the formation of beats. Students will recognize some of the factors that determine how a concert hall or theater is designed, describe the uses of sonar, and explain how ultrasound is useful in medicine.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p><u>(Power TEKS/Student Expectations are Underlined)</u></p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>IPC.1 Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.</u></p> <p><u>(A) demonstrate safe practices during field and laboratory investigations</u></p> <p><u>IPC.2 Scientific processes. The student uses scientific methods during field and laboratory investigations.</u></p> <p><u>(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology</u></p> <p><u>(B) collect data and make measurements with precision</u></p> <p><u>(C) organize, analyze, evaluate, make inferences, and predict trends from data</u></p> <p><u>(D) communicate valid conclusions</u></p> <p><u>IPC.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u></p> <p><u>(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information</u></p> <p><u>(C) evaluate the impact of research on scientific thought, society, and the environment</u></p> <p><u>IPC.5 Science concepts. The student knows the effects of waves on everyday life.</u></p> <p><u>(A) demonstrate wave types and their characteristics through a variety of activities such as modeling with ropes and coils, activating tuning forks, and interpreting data on seismic waves</u></p> <p><u>(B) demonstrate wave interactions including interference, polarization, reflection, refraction, and resonance within various materials</u></p> <p><u>(D) demonstrate the application of acoustic principles such as in echolocation, musical instruments, noise pollution, and sonograms</u></p>		
<p>Concepts/ Vocabulary</p>	<p>Acoustics Cochlea Decibel Doppler effect Eardrum Echolocation Intensity Loudness Music Overtone Pitch</p>		

	Quality Resonator Sonar Ultrasonic
Resources	TWE – Teacher Wraparound Edition CRB – Chapter Resources Booklet TCR – Teacher Classroom Resources
Instructional Activities	Activity: Blocking Noise Pollution pp. 390-381
Assessment	Chapter Assessment, pp. 386 - 387 Chapter Test, pp. 39 - 42
Integration	
Intervention	
Extension	

Subject: IPC	Grade Level: 9	Sixth Week: 3 rd	Week: 3
Instructional Focus Summary	<p><u>Chapter 13 Electromagnetic Waves</u></p> <p>Students will explain how vibrating charges produce electromagnetic waves, and describe properties of electromagnetic waves. Students will compare the various types of electromagnetic waves, and identify some useful and some harmful properties of electromagnetic waves. Students will explain how modulating carrier waves makes radio transmissions, distinguish between AM and FM radio, and identify various ways of communicating using radio waves.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p><u>(Power TEKS/Student Expectations are Underlined)</u></p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>IPC.1 Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.</u></p> <p><u>(A) demonstrate safe practices during field and laboratory investigations</u></p> <p><u>IPC.2 Scientific processes. The student uses scientific methods during field and laboratory investigations.</u></p> <p><u>(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology</u></p> <p><u>(B) collect data and make measurements with precision</u></p> <p><u>(C) organize, analyze, evaluate, make inferences, and predict trends from data</u></p> <p><u>(D) communicate valid conclusions</u></p> <p><u>IPC.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u></p> <p>(E) research and describe the history of physics, chemistry, and contributions of scientists</p> <p><u>IPC.5 Science concepts. The student knows the effects of waves on everyday life.</u></p> <p>(C) identify uses of electromagnetic waves in various technological applications such as fiber optics, optical scanners, and microwaves</p>		
Concepts/ Vocabulary	<p>Carrier wave Cathode – ray tube Electromagnetic wave Frequency Gamma ray Infrared wave Microwave Photon Radiant energy Radio wave Transceiver Ultraviolet wave Visible light X ray</p>		
Resources	<p>TWE – Teacher Wraparound Edition CRB – Chapter Resources Booklet TCR – Teacher Classroom Resources</p>		
Instructional	<p>Activity: Radio Frequencies pp. 410 - 411</p>		

Activities	
Assessment	Chapter Assessment, pp. 416 - 417 Chapter Test, pp. 39 - 42
Integration	
Intervention	
Extension	

Subject: IPC	Grade Level: 9	Sixth Week: 3 rd	Week: 4
Instructional Focus Summary	<p><u>Chapter 14 Light</u></p> <p>Students will describe the differences among opaque, transparent, and translucent materials, explain how light is reflected, and discuss how refraction separates white light. Students will explain how you see color, describe the differences between light color and pigment color, and predict what happens when different colors are mixed. Students will explain how incandescent and fluorescent light bulbs work, analyze the advantages and disadvantages of different lighting devices, explain how a laser produces coherent light, and describe various uses of lasers.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p><u>(Power TEKS/Student Expectations are Underlined)</u></p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>IPC.1 Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.</u> <u>(A) demonstrate safe practices during field and laboratory investigations</u></p> <p><u>IPC.2 Scientific processes. The student uses scientific methods during field and laboratory investigations.</u> <u>(B) collect data and make measurements with precision</u> <u>(C) organize, analyze, evaluate, make inferences, and predict trends from data</u> <u>(D) communicate valid conclusions</u></p> <p><u>IPC.5 Science concepts. The student knows the effects of waves on everyday life.</u> <u>(A) demonstrate wave types and their characteristics through a variety of activities such as modeling with ropes and coils, activating tuning forks, and interpreting data on seismic waves</u> <u>(B) demonstrate wave interactions including interference, polarization, reflection, refraction, and resonance within various materials</u></p> <p><u>IPC.7 Science concepts. The student knows relationships exist between properties of matter and its components.</u> <u>(D) relate the chemical behavior of an element including bonding, to its placement on the periodic table</u></p>		
Concepts/ Vocabulary	<p>Coherent light Fluorescent light Holography Incandescent light Incoherent light Index of refraction Mirage Opaque Pigment Polarized light Total internal reflection Translucent Transparent</p>		
Resources	<p>TWE – Teacher Wraparound Edition CRB – Chapter Resources Booklet TCR – Teacher Classroom Resources</p>		

Instructional Activities	Mini lab: Discovering Energy Waste in Light Bulbs, p. 431 Activity: Make a light bender pp. 441
Assessment	Chapter Assessment, pp. 448 - 449 Chapter Test, pp. 41 - 42
Integration	
Intervention	
Extension	

Subject: IPC	Grade Level: 9	Sixth Week: 3 rd	Week: 5
<p>Instructional Focus Summary</p>	<p><u>Chapter 15 Mirrors</u></p> <p>Students will describe how an image is formed in three types of mirrors, explain the differences between real and virtual images, and identify examples and uses of plane, concave, and convex mirrors. Students will describe the shapes of convex and concave lenses, explain how convex and concave lenses refract light to form images, and explain how lenses are used to correct vision. Students will compare refracting and reflecting telescopes, explain why a telescope in space would be useful, describe how a microscope uses lenses to magnify small objects, and explain how a camera creates and image.</p>		
<p>TEKS/SE</p> <p>(Bolded TEKS/SE are assessed with TAKS)</p> <p><u>(Power TEKS/Student Expectations are Underlined)</u></p> <p>(TEKS below 80% passing on the last TAKS test)</p>	<p><u>IPC.1 Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.</u> <u>(A) demonstrate safe practices during field and laboratory investigations</u></p> <p><u>IPC.2 Scientific processes. The student uses scientific methods during field and laboratory investigations.</u> <u>(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology</u> <u>(B) collect data and make measurements with precision</u> <u>(C) organize, analyze, evaluate, make inferences, and predict trends from data</u> <u>(D) communicate valid conclusions</u></p> <p><u>IPC.3 Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.</u> <u>(B) draw inferences based on data related to promotional materials for products and services</u> <u>(C) evaluate the impact of research on scientific thought, society, and the environment</u> <u>(E) research and describe the history of physics, chemistry, and contributions of scientists</u></p> <p><u>IPC.6 Science concepts. The student knows the impact of energy transformations in everyday life.</u> <u>(B) investigate and demonstrate the movement of heat through solids, liquids, and gases by convection, conduction, and radiation</u></p> <p><u>IPC.7 Science concepts. The student knows relationships exist between properties of matter and its components.</u> <u>(C) identify constituents of various materials or objects such as metal salts, light sources, fireworks displays, and stars using spectral-analysis techniques</u></p>		
<p>Concepts/ Vocabulary</p>	<p>Concave lens Concave mirror Convex lens Convex mirror Cornea Focal length Focal point Microscope Optical axis Plane mirror Real image</p>		

	Reflecting telescope Refracting telescope Retina Virtual image
Resources	TWE – Teacher Wraparound Edition CRB – Chapter Resources Booklet TCR – Teacher Classroom Resources
Instructional Activities	Mini lab: Observing Images, p. 455 Activity: Reflections of Reflections pp. 459 Activity: Up Close and Personal pp. 474 – 475 Mini lab: Experimenting with focal lengths p. 471
Assessment	Chapter Assessment, pp. 480 - 481 Chapter Test, pp. 39 - 42
Integration	
Intervention	
Extension	

Subject: IPC	Grade Level: 9	Sixth Week: 3rd	Week: 6
Instructional Focus Summary	Students will review all objectives for the 3rd 6 Weeks		
TEKS/SE (Bolded TEKS/SE are assessed with TAKS) <u>(Power TEKS/Student Expectations are Underlined)</u> (TEKS below 80% passing on the last TAKS test)	Students will review all TEKS/TAKS objectives covered in the 3rd 6 Weeks		
Concepts/ Vocabulary	Students will review all vocabulary for the 3rd 6 Weeks		
Resources	TWE – Teacher Wraparound Edition CRB – Chapter Resources Booklet TCR – Teacher Classroom Resources		
Instructional Activities			
Assessment	Benchmark Assessment for the 3rd 6 Weeks		
Integration			
Intervention			
Extension			