

Content Area: Vision Care

Unit: Lensometry

Unit overview: This unit focuses on the skill of Lensometry, teaching scholars how to use this essential tool, with the unit culminating with Scholars determining the powers and axis of premade glasses and extrapolating patients vision problems from the prescription.

Stage 1 Desired Results

<p>Mission/Vision alignment</p> <ul style="list-style-type: none"> • Tenacious: Learns from mistakes; picks up and keeps going • Think Purposeful: Produces work that meets college and work place standards • Advocate: Speaks confidently and is willing to respectfully voice opinions to advocate for self or others 	<p style="text-align: center;">Transfer</p> <p><i>Scholars will be able to independently use their learning to...</i></p> <p>Understand that people wear glasses to correct vision imperfection and when these are neutralized they will tell about the person’s vision imperfections so that they can tell patients about their vision needs</p> <p>Correctly read the spherical and cylindrical powers of lenses using the lensometer in order to find the patients prescription to make them new glasses</p> <p>Recognize that the tools of opticians are the same across all regions and areas so they will be able to use these tools any place they find a job in optics</p> <p>Analyze, synthesize and integrate technical knowledge, skills and understandings in a constantly evolving world so they can use skills to obtain and keep a job in the visual optics field</p>			
<p>CDOS Standards (Career Development and Occupational Studies): 1, 2, 3a, and 3b</p> <p>CCTC Standards (Common Career Technical Core) 1, 2, 4, 8, 9, 11</p> <p>ESTABLISHED GOALS</p> <p>1. Demonstrate and explain proper use of the lensometer</p> <p>Neutralize spherical and sphero-cylindrical lenses</p>	<p style="text-align: center;">Meaning</p> <p>UNDERSTANDINGS</p> <p><i>Scholars will understand that...</i></p> <ol style="list-style-type: none"> 1. <i>Spherical lenses don’t correct astigmatism, but correct refractive imperfections of the eye</i> 2. <i>Lensometers read the “power” of a lens and allow opticians to either make or neutralize patient prescriptions</i> 3. <i>Astigmatic lenses have 2 powers, which are obtained by turning the power drum and cylinder axis wheel</i> 4. <i>The axis of an astigmatic lens is determined by turning an axis wheel and this corresponds to an axis in a patients eye</i> 	<p>ESSENTIAL QUESTIONS</p> <ol style="list-style-type: none"> 1. What tools help me to make glasses to help people see? 2. Why do I need to calibrate my tools? 3. How does turning the power drum help to determine the power of a lens? 		
	<p style="text-align: center;">Acquisition</p> <table border="1" style="width: 100%;"> <tr> <td data-bbox="667 1284 1314 1479"> <p><i>Scholars will know...</i></p> <ol style="list-style-type: none"> 1. <i>How to read the power drum of a lensometer</i> 2. <i>The difference between spherical and astigmatic lenses</i> </td> <td data-bbox="1314 1284 2003 1479"> <p><i>Scholars will be skilled at...</i></p> <ol style="list-style-type: none"> 1. <i>Using a lensometer to neutralize a prescription</i> 2. <i>Reading the lensometer to determine astigmatic lens power</i> 3. <i>Reading the lensometer to determine spherical lens power</i> </td> </tr> </table>		<p><i>Scholars will know...</i></p> <ol style="list-style-type: none"> 1. <i>How to read the power drum of a lensometer</i> 2. <i>The difference between spherical and astigmatic lenses</i> 	<p><i>Scholars will be skilled at...</i></p> <ol style="list-style-type: none"> 1. <i>Using a lensometer to neutralize a prescription</i> 2. <i>Reading the lensometer to determine astigmatic lens power</i> 3. <i>Reading the lensometer to determine spherical lens power</i>
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	<ol style="list-style-type: none"> 3. <i>That thin lines in the reticle of the lensometer indicate the spherical power of the lens, and the thick lines indicate the cylindrical portion of the lens</i> 4. <i>Power drums are always turned in a minus direction, and the difference between the powers where the spherical lines come in, compared to when the cylindrical lines come in, shows the cylindrical power of a lens</i> 5. <i>How to determine the prescription of finished pairs of glasses</i> 	<ol style="list-style-type: none"> 4. <i>Reading the lensometer to determine the power of a finished pair of glasses</i>
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Stage 2 - Evidence

Evaluative Criteria	Assessment Evidence
<p>Ability to use a lensometer</p> <p>They must read the prescription within ANSI standards (+/- .125 diopters of power and cylindrical axis) of finished glasses</p> <p>Correctly identify the vision imperfections of 6 specified prescriptions</p> <p>Correctly identify the prescriptions of 22 astigmatic lenses and 16 spherical lenses</p>	<p>PERFORMANCE TASK(S): Scholars will neutralize 5 finished pairs of glasses, finding both the powers and the axis, and extrapolate the vision imperfection based on the prescription of the glasses</p> <hr/> <p>OTHER EVIDENCE: Neutralize spherical lenses Neutralize astigmatic lenses Quizzes Questioning Reflections completed by student</p>

Stage 3 – Learning Plan

<p><i>Summary of Key Learning Events and Instruction</i></p> <ol style="list-style-type: none"> 1. Identify the parts and components of the lensometer (<i>Exhibit, Rehearse, Organized, Tailored</i>) 2. How to read the power drum and calibrate the lensometer for the scholars eye (<i>Exhibit, Rehearse, Organized, Tailored</i>) 3. Learn to neutralize lenses and determine the power of spherical lenses. (<i>Exhibit, Rehearse, Organized, Tailored</i>) 4. Demonstrate mastery of spherical lens neutralization 5. Learn to neutralize astigmatic lenses (<i>Exhibit, Rehearse, Organized, Tailored</i>) 6. Demonstrate mastery of Astigmatic lens neutralization 7. Learn to neutralize finished glasses to check for accuracy of manufacture 8. When offered lenses of various powers, Scholars will be able to determine the power of the lens and be able to say what ocular imperfection the patient is suffering from (<i>Exhibit, Rehearse, Organized, Tailored</i>) 9. Reflections on learning – scholars will self-reflect using prepared questions on the practices and techniques learned and used during the assessment
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