

Achievement Chart Category	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding	Summarizes information about refraction, mirrors, and lenses as it relates to this task with limited effectiveness.	Summarizes information about refraction, mirrors, and lenses as it relates to this task with some effectiveness.	Summarizes information about refraction, mirrors, and lenses as it relates to this task with considerable effectiveness.	Summarizes information about refraction, mirrors, and lenses as it relates to this task with a high degree of effectiveness.
Thinking and Investigation	<p>Formulates a hypothesis with limited accuracy.</p> <p>Creates a model of a light tunnel using appropriate materials safely and accurately, with limited effectiveness.</p> <p>Model designed meets the criteria with limited accuracy.</p>	<p>Formulates a hypothesis with some accuracy.</p> <p>Creates a model of a light tunnel using appropriate materials safely and accurately, with some effectiveness.</p> <p>Model designed meets the criteria with some accuracy.</p>	<p>Formulates a hypothesis with considerable accuracy.</p> <p>Creates a model of a light tunnel using appropriate materials safely and accurately, with considerable effectiveness.</p> <p>Model designed meets the criteria with considerable accuracy.</p>	<p>Formulates a hypothesis with a high degree of accuracy.</p> <p>Creates a model of a light tunnel using appropriate materials safely and accurately, with a high degree of effectiveness.</p> <p>Model designed meets the criteria with a high degree of accuracy.</p>
Application	<p>Challenges during the design of the light tunnel are described in limited detail.</p> <p>Identifies the most useful optics components in the light tunnel design with limited accuracy.</p>	<p>Challenges during the design of the light tunnel are described in some detail.</p> <p>Identifies the most useful optics components in the light tunnel design with some accuracy.</p>	<p>Challenges during the design of the light tunnel are described in considerable detail.</p> <p>Identifies the most useful optics components in the light tunnel design with considerable accuracy.</p>	<p>Challenges during the design of the light tunnel are described in thorough detail.</p> <p>Identifies the most useful optics components in the light tunnel design with a high degree of accuracy.</p>
Communication	<p>Ray diagrams for the design brief are drawn using proper scientific conventions with limited effectiveness.</p> <p>Communicates an explanation for the design brief using appropriate scientific terminology and for an intended audience and purpose with limited effectiveness.</p>	<p>Ray diagrams for the design brief are drawn using proper scientific conventions with some effectiveness.</p> <p>Communicates an explanation for the design brief using appropriate scientific terminology and for an intended audience and purpose with some effectiveness.</p>	<p>Ray diagrams for the design brief are drawn using proper scientific conventions with considerable effectiveness.</p> <p>Communicates an explanation for the design brief using appropriate scientific terminology and for an intended audience and purpose with considerable effectiveness.</p>	<p>Ray diagrams for the design brief are drawn using proper scientific conventions with a high degree of effectiveness.</p> <p>Communicates an explanation for the design brief using appropriate scientific terminology and for an intended audience and purpose with a high degree of effectiveness.</p>

