

Achievement Chart Category	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding	Information necessary for task about reflection, refraction, mirrors, and lenses is described with little detail.	Information necessary for task about reflection, refraction, mirrors, and lenses is described with some detail.	Information necessary for task about reflection, refraction, mirrors, and lenses is described in detail.	Information necessary for task about reflection, refraction, mirrors, and lenses is accurately and thoroughly described.
Thinking and Investigation	Few materials were selected to create a model of the light tunnel.	Materials were selected and gathered to create a model of the light tunnel.	Appropriate materials were selected and gathered to create a model of the light tunnel.	Appropriate materials were quickly selected and gathered to create a model of the light tunnel.
	Materials were sometimes used effectively.	Materials were usually used safely and effectively.	Materials were used in a safe and effective way.	Materials were used in a very safe and effective way.
	Design of model meets few of the criteria listed.	Design of model meets some of the criteria listed.	Design of model meets the criteria listed.	Design of model goes beyond the criteria listed.
Communication	Little effectiveness shown in using a ruler and protractor to draw ray diagrams.	Some effectiveness shown in using a ruler and protractor to draw ray diagrams.	Ruler and protractor used to draw ray diagrams	Ruler and protractor used effectively to draw ray diagrams.
	Little scientific terminology used to communicate purpose to intended audience.	Some scientific terminology used to communicate purpose to intended audience.	Appropriate scientific terminology used to communicate purpose to intended audience.	Appropriate scientific terminology very effectively used to communicate purpose and for intended audience.

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	Design plans done with few ray diagrams and little explanation of how light will be directed through tunnel.	Design plans done with ray diagrams and some explanation of how light will be directed through tunnel.	Design plans well done with complete ray diagrams and explanation of how light will be directed through tunnel.	Design plans very well done with complete ray diagrams and explanation of how light will be directed through tunnel.
Application	Provides little description of challenges faced when designing the light tunnel.	Provides some description of challenges faced when designing the light tunnel.	Provides a description of challenges faced when designing the light tunnel.	Provides a detailed description of challenges faced when designing the light tunnel.