

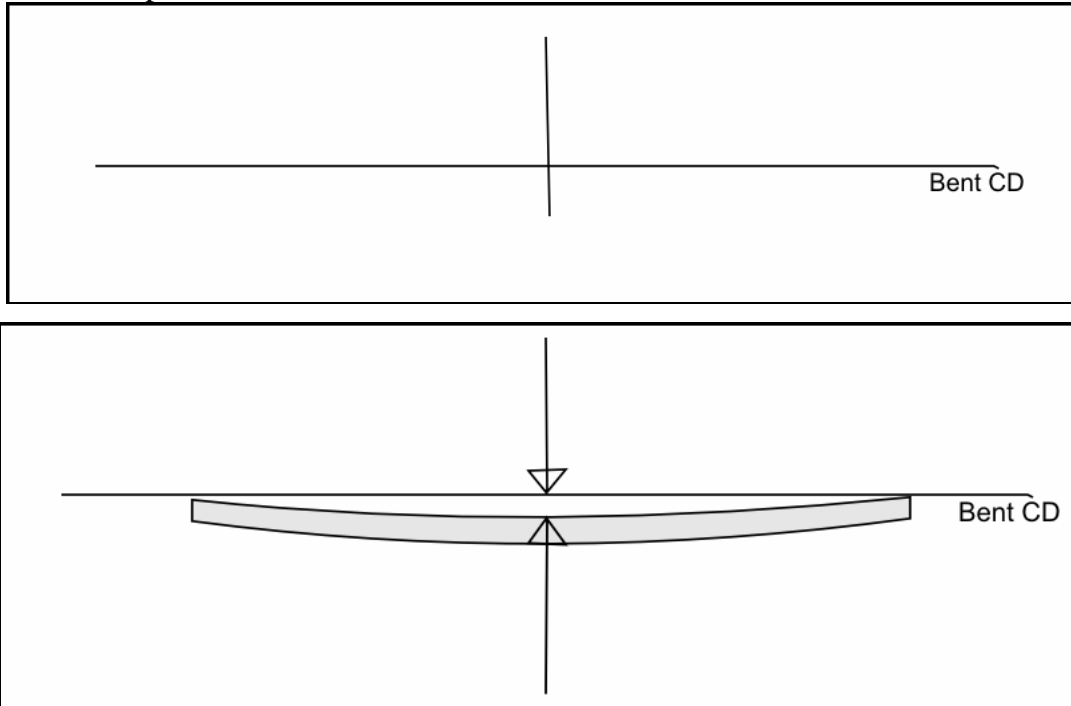


Drexel-SDP GK-12 LESSON

- Lesson Title and Identifier:
Title: Astronomy and Me: Convex and Concave
Identifier: 3.3
- Module: Astronomy
- Subject Area (Unit): Astronomy
- Concept: Vocabulary
Convex
Concave
- Objectives:
Introduce the concept of enlarging and reducing an object.
- Keywords: Convex, Concave
- PA Academic Standards:
Science 3.1.7 Unifying Themes
3.2.7 Inquiry and Design
Math 2.3 Measurement and Estimation
2.9 Geometry
- Grade Level: 6th
- Setting/Group Size: 30 students
- Duration/Time Required: 1 class period
- Materials List (include safety equipment if applicable)
Old CD's
Pencil
Paper
Ruler
Tape
- Methods and Procedure:
Step 1: Review the types of telescopes astronomers use. (Refracting and reflecting) Take a poll of the class.

Step 2: Have the students break up into groups of at least four people. Give the students at least one object. Have the students measure and record the outer dimensions of the object.

Step 3: Tape a sheet of paper to the table. Draw a straight line on the paper. Find the midpoint of the line. Draw a second line perpendicular (a right angle) to the first line. We will line up the CD to this line.



Step 4: Look into the CD. Bend the CD in and out. Which direction causes your face to become thinner? Which direction causes your face to become wider?

Step 5: Line up the CD to the first line. Place the object in front of the CD. Measure the distance between the center of the CD and the line, as in the above figure. Fill in the chart below.

	Measurement 1	Measurement 2	Measurement 3	Average
Object 1				
Object 2				
Object 3				

	Team 1	Team 2	Team 3	Team 4	Team 5	Team 6
Object 1						
Object 2						
Object 3						

Step 6: Find the average of your observations. Gather the information from the other teams.

Step 7: Graph the results of your observation. (Each team is free to decide which type of graph they want to use.) Based on the results, discuss whether the teams were consistent or if there were any differences. Try to explain any differences.

- Assessment

Students will be evaluated on a scale from 0 to 4 on:

_____	_____	_____	_____
Participation	Task Completion	Presentation	Quality of Analysis

- Authors

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