



# Lesson Plan

**Subject/Grade Level:** 5th Grade Science

**Lesson Title:** Concave and Convex Lenses

**Lesson Duration:** 40-50 minutes

**Performance Objective:** Upon completion of this lesson, the student will be able to differentiate between convex and concave lenses. Students will be able to describe the movement of rays through each lens.

## Preparation

**Framework Strand:** Physical Science

**Content Standard Competencies/Objectives:**

2 E: Understand relationships of the properties of objects and materials, position and motion of objects, and transfer of energy to explain the physical world  
(Concave/Convex Lenses)

**MS CCR/CCSS: SL.5.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly

**ISTE: Model Digital Age Work and Learning:** Standard 3-Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society

**Instructional Aids:** Study Island, PowerPoint Concave and Convex Lens, Science a Closer Look textbook and software

**Materials Needed:** Handouts of Venn diagram and concave and convex lenses, paper, color pencils, Science a Closer Look textbook

**Equipment Needed:** Promethean Board

**Desired Student Prerequisites:** Background knowledge of reflection and refraction.  
Students should be able to contrast the two types of lenses

## Introduction/Anticipatory Set

I will take out a magnifying glass and ask the students what is it used for? I will build the lesson around the discussion on concave and convex lenses.

### Lesson Outline/Procedures:

### Instructor Notes:

First students will pre-read short book lesson on concave and convex lenses (2pg)

A lens forms an image by REFRACTING light rays that pass through it.

Students will then read the lesson aloud and we will discuss specific vocabulary words which relate to the lesson.	The type of image formed by a lens depends on the <u>shape</u> of the lens and the <u>position</u> of the object.
Students will view a PowerPoint on concave and convex lenses for reinforcement of book lesson.	TWO TYPES OF LENSES Convex-Converging Concave-Diverging
Students will be divided into cooperative learning teams for a short activity. While in groups students will create a VENN diagram which will compare and contrast convex and concave lenses. Students will then diagram both lenses which represents the movement of light rays in each lens.	A convex lens can <u>focus</u> the light that enters it and direct it to one point.  Concave lenses make light rays move away from each other or spread out
<b>Application</b>	
<b>Guided Practice:</b> Book lesson on concave and convex lenses. PowerPoint lecture. I will support students during the cooperative activity by providing feedback as needed. I will demonstrate the VENN diagram and concave and convex lenses so the students will be clear on expectations.	
<b>Independent Practice:</b> Cooperative learning activity. Create diagram of lenses and VENN diagram (Each group will receive a VENN diagram template and a preprinted lens sheet.	
<b>Summary</b>	
<b>Lesson Closure:</b> Upon completion of the lesson, I will ask students are they clear on the differences between concave and convex lenses. We will talk about near sighted and far sighted vision to be clear.	
<b>Evaluation</b>	
<b>Informal Assessment/Review:</b> Yes and No index cards to respond to questions during lesson closure. Thumbs up/thumbs down on questions on convex and concave lenses. This will enable me to see who has a clear understanding of the content and who does not.	
<b>Formal Assessment:</b> Performance based assessment on the diagrams and the VENN comparison contrast exercise. Rubric attached	
<b>Lesson Extension</b>	
<b>Extension/Enrichment:</b> Students will receive a homework handout with specific questions from the vocabulary. (convex, concave, lens, converging, diverging, refraction, and reflection. Students will summarize the activity and lesson in their own words for homework using the vocabulary words do describe what they learned during the lesson.	
<b>Accommodations/Differentiation:</b> Visual learners will view the Promethean board lesson via PowerPoint/Books. Auditory learners will hear the lesson and will be able to discuss major components of the lesson in cooperative learning groups. Kinesthetic learners will be able to move around the room while working in cooperative learning groups. Hands on activity will be diagramming the different light rays	

**References:**

**Science a Closer Look Textbook**

**Study Island—[www.studyisland.com](http://www.studyisland.com)**

**ISTE Standards-[www.iste.org/STANDARDS](http://www.iste.org/STANDARDS)**

**Teacher Web—[teacherweb.com/GA/LKMossPrimarySchool/.../LENSES-Powerpoint.ppt](http://teacherweb.com/GA/LKMossPrimarySchool/.../LENSES-Powerpoint.ppt)**