

Light: Transparent, Translucent, and Opaque

Liberal Studies Teacher Preparation LS 1001.1 **Science Lesson Plan**

I. Next Generation Science Standards for CA Public Schools

1-PS2-3: First grade: Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.

II. Unit of Study

Six week unit study on light and sound.

Students will understand the difference between transparent, translucent, and opaque objects when light passes through.

III. Prior Learning

Students have been learning about differentiating light and sound.

Students have been assessing the different lights and sounds in their classroom.

IV. Student Learning Outcomes

1. TSW learn vocabulary and know the difference between transparent, translucent, and opaque.
2. TSW understand the cause and effect when light passes through an object.
3. TSW conduct an investigation to differentiate objects that are transparent, translucent, and opaque.

V. Assessment

1. TTW informally assesses students' understanding of vocabulary by having group and individual repetition and asking for "thumbs up, thumbs down" when asking if a word means this or that.
2. TTW assesses the students' overall understanding of the concepts, including cause and effect by reviewing worksheets

VI. Materials and Resources

1. "Translucent, Transparent, and Opaque" poster
2. Box with transparent, translucent, and opaque objects

3. Flashlights
4. Worksheets for investigation of objects
5. Mentor Poster: “Light and Sound Around the Classroom” poster by Ms. Nuñez

VII. Implementation

A. Introduction to Lesson

1. I will start by getting all excited and explaining how I love light and why it is useful for me and them.
2. I will pose a guiding question: “Can light be seen all the time? ... Hmmm, let’s see.”
3. I will ask them to cover their eyes and ask “Can you see light?” then to spread their fingers “Can you see light?” then to remove their hand “Can you see light?” and then seem perplexed about how they are seeing light differently.

B. Sequence of Activities

1. TTW say “before we get into the science part... can anyone tell me if they notice a color pattern?” while walking back and forth between the poster and the mentor poster: green
2. TTW say that the vocabulary words are another pattern and to see if anyone can identify them — open ended and address as each word and color is introduced
3. TTW ask if they know about a device that gives light: flashlight
4. TTW introduce that there are three different ways in how light passes through objects and put the words on the poster
5. TTW start with transparent — put flashlight on the poster, turn the flashlight on, hold up a piece of transparent paper and verbally explain how light passes through it and how we can still see the written object
6. TTW explain cause and effect (“when we turn our flashlight on, the rays of light try to pass through the ____ object causing ____ light to pass)
7. TTW repeat 4 and 5 for translucent and opaque

8. TTW ask if the light or the objects are transparent, translucent, or opaque for overall understanding of terms
9. TTW informally assess understanding by asking what each concept is and look for those that do not answer
10. TTW review poster: vocabulary, cause and effect
11. TSW verbally answer informal assessing questions in order for the teacher to see what has to be reviewed a bit extra
12. TTW excitedly announce that the students will conduct an investigation to figure out if the mystery objects are transparent, translucent, or opaque
13. TTW explain that they will go into small groups, have a flashlight(s), receive a worksheet in which they will draw or write the object they group has under the right column, and that number ones of the group will go first and retrieve one object at a time
14. TSW conduct an investigation
15. TTW go around and informally assess where each student is at with understanding of the concepts and help accordingly

C. Closure

1. TTW ask the students to put all the objects back
2. TTW pick up an object and ask the students to raise a quiet hand and identify how the light is passing through and why they think that
3. TTW state that they will go over this material again with Ms. Nuñez

VIII. Grouping Strategies

1. Whole group poster learning
 - a) Group assessment by teacher
2. Small group worksheet investigations
 - a) Individual assessment by teacher

IX. Differentiated Instruction

1. Repetition and pointing for English Language Learners
2. Clearly emphasized speech for those with hearing disabilities

3. Visual, auditory, and kinesthetic material for all learning types
4. One on one help for students who need extra explaining or guide for the worksheet during small groups