

Jay Curriculum: Unit Cover Page

Unit title: Reflections **Grade Level:** 4
Content Area(s): Science **Date Created:**
Designed By: Jay Fourth Grade Teachers

Year 1 Map & Template Development

- Map/Matrix Completed
- Material & Resources Listed
- Draft Design Template Completed
- Initial Draft Template Document

Year 2 Piloting

- Develop:
- Performance Tasks
- Other Assessments
- Scoring Rubrics
- Piloted

Year 3 Review & Complete Assessment

- Performance Tasks Development
- Other Assessments Completed
- Scoring Rubrics Completed
- Reviewed/Revised Templates

Year 4

- Full Implementation
- Benchmarks Established

Standard(s)/Performance Indicators:

- L1 Record results of experiments or activities (e.g. interviews, discussions, field work) and summarize and communicate what they have learned.
- L2 Ask clarifying and extending questions
- L3 Reflect on work in science and technology using such activities as discussions, journals, and self-assessment
- L4 Make and/or use sketches, tables, graphs, physical representations, and manipulatives to explain procedures and ideas
- J2 Conduct scientific investigations: make observations, collect and analyze data and do experiments.

Unit: Reflections

Brief Summary of Unit/Topic

Summary:

Reflections are likenesses that appear in mirrors or on shiny surfaces. Some reflections are not true likenesses because the surface is not flat. All surfaces not completely black reflect light evenly to produce a mirror image. Transparent materials let light go through them. Convex lenses are thicker in the middle. When rays of light going through a convex lens are brought together, or focuses, the picture is upside down. The human eye is a living convex lens.

Stage #1: Identify Desired Results

Essential Question/s:

General understanding/s (What is worth being familiar with?)

- Reflections are likenesses that appear in mirrors or shiny surfaces
- Transparent materials let light go through them
- Know the differences between concave and convex lenses

Students will know:

- Reflections are likenesses that appear in mirrors or shiny surfaces
- A surface has to be smooth and shiny to reflect light evenly
- All surfaces not completely black reflect light
- The difference between transparent, translucent, and opaque
- The difference between convex and concave lenses
- A lens produces an image that varies according to the curve of its surface
- The eye is a living convex lens
- People use lenses in many ways

Students will be able to:

- Use the scientific method to conduct an experiment
- Complete a lab report after conducting an experiment
- Summarize and communicate what they have learned
- Ask clarifying and extending questions
- Participate in discussions
- Make or use sketches, tables, graphs, models, or manipulatives to explain procedures and ideas
- Function effectively in groups

Enduring Understanding/s:

Stage #2: Evidence

What evidence will students have to provide in order to demonstrate that they have developed the skills, knowledge and understanding to successfully complete this unit?

Performance Tasks/Products/other assessments Performance tasks should have a <u>scoring guide</u> .	<i>Performance Indicators</i> for this task.* Example: ELA: C- 1,2,3 Science: B- 3,5,7 SS His: H- 2	<u>Modalities</u> K =Kinesthetic O =oral V =visual W =written	Are <u>examples</u> available to students? ? Y, N, or N/A	Component of Local Assessment System? Y or N (See aligned scoring guide .)
Conduct experiments, record information and evaluate results: compare different kinds of reflections; classify objects into 3 categories: transparent, translucent, and opaque; observe a demonstration showing an image through a lens	J2			
Complete lab sheets following scientific method procedures	L1, L3			
With a partner or teammate, share experiment results and ask extending questions	L2			
Observe, record and explain reflections in spoons and mirrors	L4			
Students will perform assigned tasks while doing their experiments	L7			
QUIZZES, TESTS, PROMPTS				
Review quizzes				
End of unit test				
OTHER				
Lab reports and summaries				
Rubric guidelines				
Class charts				
Sketches, tables, graphs				
Collection and analysis of data				
Discussions				
STUDENT SELF ASSESSMENT				
Participation in experiments				

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Record observations				
Rubric checklists				
Reflection journal				
Group participation				

*Abbreviate: English Language Arts= ELA, Career Preparation=CP, Modern and Classical Languages=MCL, Social Studies=SS, Visual and Performing Arts=VPA

Stage #3: Plan learning experiences & instruction

What teaching & learning experiences may equip students to develop & demonstrate the targeted understanding(s)? (activities/plans):

*Resources: Reflection Kits, Science Manual

1. Experiment with mirror and shiny spoon (p. 291, science book)
2. Compare materials like aluminum foil, black paper, regular paper, etc. Write observations of which ones reflect the most light.
3. Compare different kinds of materials that are opaque, translucent, transparent (classify them on a chart)
4. Observe an experiment with a candle, convex lens, and white paper. Discuss and record results. (p.294, 295 science book)
5. Explore different kinds of lenses. Fill in a chart on How People Use Lenses (p. 296 science book)
6. Diagram the living eye lens and explain how it works (p. 297 science book)
7. Show videos and filmstrips on reflection topics. Take notes and listening logs.
8. Conduct experiments using water in transparent glass. Insert pencil – what happens? Why?
9. Use different items in water – explain changes.
10. Use mirror cards and activities
11. Use items in kit (kaleidoscopes, etc., to show properties of light).

REFERENCES: