Grade 4 Science

Lesson: 4-11        Unit: Light and Sound        Topic: Echoes

Lesson
- Hand out worksheets
- Have students read through front of paper
- Discuss that experiment will need to be done in one big group (2 if enough supplies)
- Explain difficulties → Need silence → Different hearing levels → limited resources
- Set up experiment with student help
- Allow each student to hear ticking through tube before setting up echo
  * Explain that this is a 10 on the volume scale and no sound is 0.
- Set up echoing surfaces, one at a time, allowing each student to listen
- If time at end, have students go outside and try clapping to make echo

Reminders

Supplies Needed
- Ticking clock (small)
- Fabric
- 2 cardboard tubes
- Cookie sheet
- Cotton balls
- Tape

Homework

Notes
* Glue cotton balls to paper → "fluff" them first
* Had to do experiment as a class → with big class, try to set up 2 stations at least
Grade 4 Science

Lesson: 4-12  Unit: Light and Sound  Topic: Ears

<table>
<thead>
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<th>Lesson</th>
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| - Inform class that today is to be a student led lesson, they are given the information and the work, and are to try to complete it through:
  - independent work
  - peer conferencing
- Explain that this does not mean I won't help, just that I am encouraging them to practice using other resources
- Hand out sheet
- Students work
- If finished they can answer echo questions from last class. |

<table>
<thead>
<tr>
<th>Reminders</th>
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<table>
<thead>
<tr>
<th>Supplies Needed</th>
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<tbody>
<tr>
<td>- Worksheet</td>
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Lesson: 4-13  Unit: Light and Sound  Topic: Quiz

**Lesson**

- Reviewed Quiz expectations
  - eyes on own paper
  - no talking
  - hand up to ask clarification questions

- Hand out quizzes
  - point out options
  - choose experiment
  - choose what to write for part d

- IF done: students do Finish up work

**Reminders**

**Supplies Needed**

- Quizzes

**Homework**

**Notes**
**Grade 4 Science**

**Lesson:** 4-14  
**Unit:** Light and Sound  
**Topic:** Light Sources

### Lesson

- Ask students: "Which is brighter, the sun or the moon?" → The sun.
  - "Why do you think that is?" → Sun emits light, moon reflects light.
  - "Can you think of other things that only reflect light?" → mirror, reflectors on bicycle.

- "What does the word 'natural' mean?" → Occurs without human.

- "What would 'natural light source' mean?" → A light source that could exist without human.

- "What would 'artificial light source' mean?" → Man-made light.

- Hand out worksheet and read through intro.
- Discuss organization of light.
- Explain activity.
- Students work through activity.

### Reminders

- 

### Supplies Needed

- Worksheets

### Homework

- 

### Notes

- 

Grade 4 Science

Lesson: 4-15
Unit: Light and Sound
Topic: Use of Reflected Light

Lesson

- "What am I wearing?" → dirty vest
- "What is it used for?" → so you can be noticed
- Talk about how it is made to help people get noticed → bright colors
- → shiny surfaces (reflectors)

- Explain today's task → read into online
- → look at pictures
- → watch videos
- → write a paragraph about how reflectors keep us safe
- → develop an advertisement for something that uses reflected light

- Complete: students come to think of other ways we use reflected light

*Could provide this question as extra work: How can we use reflected light to keep animals off the road?

Reminders

- Put webpage online prior to class
- Wear dirty vest to class

Supplies Needed

- Computers
- Dirty Vest
- Worksheets

Homework

Notes
Lesson: 4-16  Unit: Light and Sound  Topic: Work Period

Lesson

- Review light source vs reflected light
- Natural vs artificial light
- Hot vs cool light

- Explain that today will be used to finish up work from previous cycle's lessons
- Students are to work mainly independently, but may confer when stuck

Reminders

Supplies Needed

Homework

Notes
**Grade 4 Science**

**Lesson:** 4-17  
**Unit:** Light and Sound  
**Topic:** Heat vs No Heat (Light)

### Lesson

- Review: Light source vs reflected light, natural vs artificial light, hot vs cool light.
- Explain experiment: in small groups, given light source, measure temp of source.

### Reminders

- [Blank]

### Supplies Needed

- Workbooks
- Flares/cut light bulbs
- Thermometers
- Lamps
- Incandescent xmas lights
- Incandescent light bulb
- LED xmas lights

### Homework

- [Blank]

### Notes

- [Blank]
**Grade 4 Science**

**Lesson**: 4-18  
**Unit**: Light and Sound  
**Topic**: Prisms

### Lesson

- Explain procedure for today:
  - Read information page
  - Finish questions from previous experiment
  - With a partner, play with prisms to try to separate light
  - Complete any other finish up work
  - Read quietly or do finish up for other subjects.

- Hand out information pages

- Post colour picture page so students can reference.

- Ask students to bring in yogurt or sour cream type container.

### Reminders

- *Could add in most experiment if supplies*:
  - Stand with back to sun
  - Wet spray bottle to fix mist
  - Spritz away from sun
  - Look for rainbow

### Supplies Needed

- Info page
- Colour picture page
- Prisms

### Homework

- Bring in container

### Notes
**Lesson:** 4-19  |  **Unit:** Light and Sound  |  **Topic:** Use of Sound

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Review: &quot;What is sound?&quot; → vibrations that our ears can hear</td>
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<tr>
<td>&quot;How do the vibrations get to our ears?&quot; → sound travels in waves</td>
</tr>
<tr>
<td>&quot;What are some properties of sound?&quot; → travels, caused by vibrations, can reflect, can absorb</td>
</tr>
<tr>
<td>&quot;How do our ears work (to hear sound)?&quot; → sound travels down ear canal, hits eardrum, ear drum vibrates, bones in ear, bones send signal to brain through nerves</td>
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</tbody>
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- Hand out worksheet |
- Students are to read with a partner |
- Students then find a different partner to answer questions on their own |
- When done, students conference to add more to answers |
- **Reminders:** |
  - **Supplies Needed:** |
    - Worksheet |
  - **Homework:** |
    - Bring in container |

**Notes**
**Grade 4 Science**

**Lesson:** 4-20  
**Unit:** Light and Sound  
**Topic:** Use of Light

### Lesson

- **Review:**  
  - "What is light?" → A type of energy we can see  
  - "How does light travel?" → In waves  
  - "What are some properties of light?" → Travels in waves, travels in straight lines, can be absorbed, can reflect, changes substances.

- Hand out worksheet  
- Read intro  
- Have students get in groups of 5 (we can split students who don't want to read)  
- Each student reads a section  
- Students then do questions individually  
- When done, students conference to add more to answers  
- Remind students to bring yogurt container next class  
- Game: all stand, in sequence they say something that uses/provides light, when they have 5 seconds or they sit and are out, if they repeat a answer they have 3 seconds to come up with new answer

### Reminders

### Supplies Needed

- Worksheets

### Homework

- Bring container

### Notes

- Type → light = light #1  
  - Changes changed phone  
  - Missing play - more