Lesson: 4-1  Unit: Light and Sound  Topic: Introduction

Lesson
- Explain to students that today we are starting our new unit. The title of the unit is "Light and Sound".
- Explain today's task to students:
  → Look at pictures
  → Record things that give us light and things that make sound on worksheet
  → Discuss with peers to add more
  → Make title page for unit on other side of worksheet
- Remind students to treat picture pages appropriately so they may be used multiple times.
- Hand out work.

Reminders

Supplies Needed
- Picture page
- Worksheets

Homework

Notes
Grade 4 Science

Lesson: 4-2  Unit: Light and Sound  Topic: Properties of Light

**Lesson**

- Start class by reading the definition of light from worksheet.
  \[ \text{it is meant to be confusing} \]
- Discuss with class the meaning of what was read, having them provide input towards a grade 4 level definition.
- Hand out worksheets.
- Have student volunteers read the properties of light.
- Inform students that they are to answer the questions on the back by using those properties.
- Students use remaining time to work.
- At the end of class, ask students to bring a flashlight to store in their desks for the unit.

**Reminders**

**Supplies Needed**

- Worksheets

**Homework**

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

**Lesson:** 4-3  **Unit:** Light and Sound  **Topic:** Properties of Sand

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| - Explain that today we will be doing a very similar lesson to last class, only this time we are looking at sand.  
- Read definition of sand from worksheet  
- Discuss with class to come up with a Grade 4 definition  
- Hand out worksheet  
- Have students volunteer to read the properties of sand  
- Students then answer the questions on the back, based on these properties  
- Remind students to bring a flashlight |

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Lesson

- Explain today’s activity to students
  - Draw bull’s eye on an index card
  - Punch hole in middle of 3 other cards
  - Try to shine light through cards to hit bull’s eye
- Hand out worksheets
- Tell students they may get supplies (with pen) only after they have read entire sheet.
- Students perform experiment
- Once successful, allow students to try with laser pointer
- Leave time for cleanup
- Ask students to keep index cards in their folders

Reminders

Supplies Needed

- Index cards
- Flash lights
- Play doh
- Worksheets
- Laser pointer

Homework

Notes
Lesson:

- Inform students that today we will be doing an experiment with sound.
- Show students a tuning fork and discuss its use:
  - Hit on shoe only, not hard surface
  - Do not put right next to ear
- Explain activity:
  - Plastic wrap over container, stretch tight, elastic to hold
  - Salt on top
  - Hit fork once and hold close (show)
  - Hit lots and hold close
  - Hit once gently
  - Repeat with water
- Students must read entire sheet before getting supplies

Reminders:

- Clean up time for salt and water

Supplies Needed:

- Tuning fork
- Plastic wrap
- Elastic
- Container or substitute
- Salt
- Worksheets

Homework:

Notes:
Grade 4 Science

Lesson: 4-6  Unit: Light and Sound  Topic: Reflecting light

Lesson

- Set up mirror and white cue card at 90°
  → Show reflection off mirror to cue card
  → Show how to compare reflection by lowering and raising another surface in front of the mirror
  → Point out the distance in intensity of reflection

- Discuss how to rank surfaces from 1→7 (guess first)

- Hand out worksheet, when students have predicted the rank and read entire sheet, they may begin

- Remind students to be careful with the breakable mirrors

- Leave tidy up time at end.

Reminders

Supplies Needed

- Mirrors  - Coloured Paper  - Play dough
- White Paper  - Aluminum foil  - Other surfaces
- Black Paper  - Flashlights  - Wash hands

Homework

Notes
Lesson: 4-7  Unit: Light and Sound  Topic: Sound Vibrations

Lesson
- Today's lesson is to be an independent lesson.
- Hand out worksheets.
- Students read through information on front of page and then answer questions on back.
- Encourage students to discuss/ask questions when stumped.

Reminders

Supplies Needed
- Worksheets

Homework

Notes
Lesson:
- Today's period is to be used to finish up any incomplete work.
- Lay out equipment from all previous experiments.
- Inform students that their goal for today is to complete all of their worksheets.
  - Today's work needs to be focused on the task.
  - Safety rules must be followed.
  - Clean-up as you work.
- Leave extra cleaning time at end of class.

Reminders

Supplies Needed

- Supplies for all previous experiments:
  - Paint containers
  - Clear bottles
  - Tuning forks
  - Colored paper
  - Flashlight
  - Black paper
  - Aluminum foil
  - Ruler
  - Blue paper
  - Playdough

Homework

Notes
**Lesson**

- Have students pull out their worksheets.
- One sheet at a time.
  - Take student input of answers.
  - Discuss.
  - Come to conclusion of the proper, detailed answer.
  - Check understanding.
  - Allow time for students to update.

**Reminders**


**Supplies Needed**

- Answer keys to 4-2 - 4-7.

**Homework**


**Notes**


### Lesson

- Review the idea of catching a fish with a spear requires throwing the spear in front of where the fish is seen.
  - Ask why? - Light bends as it enters water.
- Explain that water is not the only thing that bends light; light bends whenever it changes from one thing to another. This is called refraction.
- Draw diagram to show refraction through flat vs curved surface.
  - Light leaves at same angle.
- Discuss how this relates to glasses and magnifying lenses.
- Have student read, then perform activity.

### Reminders

### Supplies Needed

- Project containers
- Plastic wrap
- A variety of small objects
- Newspaper
- Elastics
- Water
- Pipettes
- Worksheet
- Quiz work

### Homework

### Notes