

We Skoolhouse

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# Ready-Made Curriculum: Exploring Light, Shadow, & Reflection



# Introduction: Exploring Light, Shadow, & Reflection

This investigation invites children to explore the phenomena of light—how it shines, bends, bounces, and disappears. Through observation, manipulation, and creative expression, children begin to uncover how light interacts with objects, surfaces, and space.

This guide can be followed week by week or adapted to your classroom's pace and children's evolving interests. Let curiosity, engagement, and discovery guide the rhythm. The goal is not coverage, but connection. Going slow and allowing children to return to familiar ideas with new insights and to make sense of the world through hands-on experience. Children require significant time to revisit concepts and hands-on experiences to strengthen neural pathways and engage in deep and meaningful learning.

The activities here are invitations, not expectations. Each one offers an opportunity to meet children where they are developmentally, while opening possibilities for deeper exploration and meaningful play. If children do not want to engage with the prompts or explore them in the way we invite them to, that is completely fine and developmentally appropriate. This age and stage is all about play and keeping experiences intrinsically motivating.

## Books Used Throughout the Unit:

- "The Black Rabbit" by Philippa Leathers
- "Oscar and the Moth: A Book About Light and Dark" by Geoff Waring
- "Flashlight" by Lizi Boyd
- "All About Light" by Lisa Trumbauer
- "Shadows and Reflections" by Tana Hoban

## Vocabulary

Light, shadow, reflect, transparent, translucent, opaque, bounce, angle, block, dark, bright, dim, flashlight, mirror, silhouette, beam, shine, see-through, surface, source, glow, bend, filter, ray

# Week 1: What Is Light?

**Focus Concept:** Light sources and basic light properties

**Weekly Objective:** Children begin noticing light in their environment and identifying different sources. They experiment with flashlights and natural light, start simple journals, and begin understanding that light travels and interacts with materials.

## Monday – Let's Look For Light!

### Morning Meeting

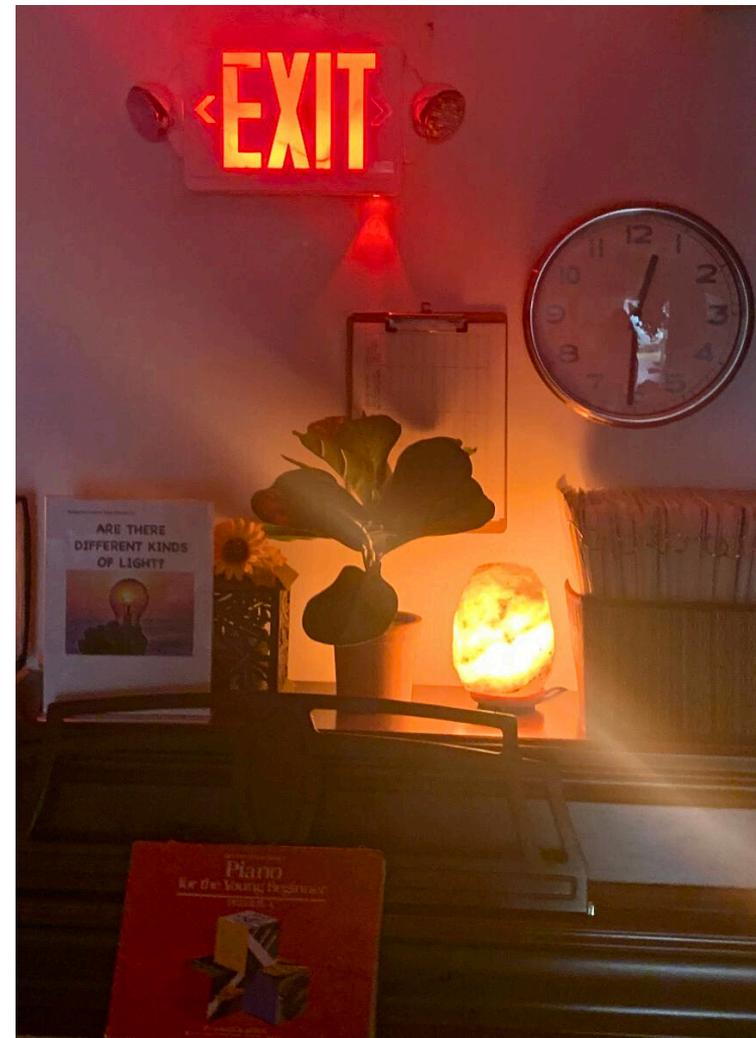
- Book: Oscar and the Moth
- Prompt: "Where does light come from?"
- Start a Light Log—a dedicated space where children's questions, predictions, and discoveries are collected and revisited throughout the investigation. Discussion questions:
  - "Where do you see light?"
  - "Do you think light can move?"

### Follow-up Investigation:

- Light hunt inside and outside: children find natural and artificial light sources.
- Add drawings or photos to the Light Log.
- Begin Light Journals: draw and label two light sources (e.g. sun, lamp).

### Closing Circle:

- Reflect: "Where did you notice light today?" Add any new questions to the Wonder Wall.



## Tuesday – Exploring Bright & Dim

### Morning Meeting

- Book: Oscar and the Moth
- Focus on brightness and types of light.
- Discussion questions:
  - “What makes light bright or dim?”
  - “Can we change how bright the light is?”

### Follow-Up Investigation

- Offer flashlights and a dim space. Let children explore shining light through tissue, fabric, plastic, paper.
- Begin sorting objects: lets light through vs. blocks light. Journals: draw something that blocked light and something that didn't.

### Closing Circle

- Share what surprised them. Incorporate new vocabulary (transparent, opaque, dim).



## Wednesday – What Happens in the Dark

### Morning Meeting

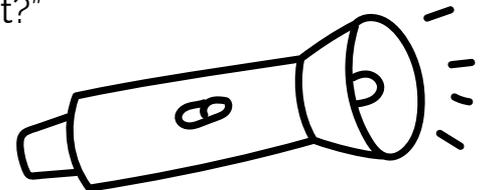
- Book: The Black Rabbit by Philippa Leathers
- Focus on how light and dark affect visibility and feelings.
- Discussion questions:
  - “What changes when it's dark?”
  - “How do you feel in the dark?”

### Follow-Up Investigation

- Cover parts of a window with different fabrics and observe changes in light.
- Use dark cloths and flashlights to compare brightness.
- Welcome small groups of children to place the different fabrics in front of light, while also holding and experimenting with the flashlights.
- Optional prompt: In journals, welcome children to draw how light changes in different materials.

### Closing Circle

- Reflect: “What did you notice when we changed the light?”



## Thursday – Can We Build a Light Lab

### Morning Meeting

- Book: Flashlight by Lizi Boyd
  - Wordless storytelling: What do you think is happening?
- Discussion questions:
  - “What would you need to make your own light lab?”

### Follow-Up Investigation

- Children help set up a light lab: flashlights, mirrors, colored plastic, shiny paper, transparent blocks.
- Journals: draw the light lab and what they want to try.

### Closing Circle

- Share ideas for how to explore light tomorrow.



## Friday – Free Exploration & Reflection

### Morning Meeting

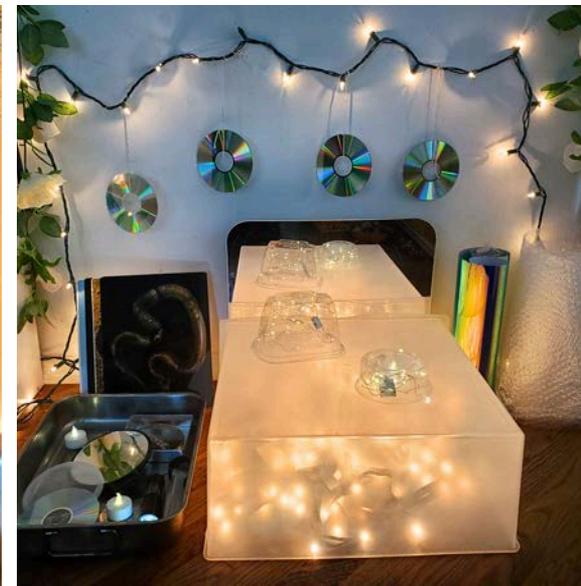
- Book: Flashlight by Lizi Boyd
- Review light sources, brightness, and materials.
- Discussion questions:
  - “What did we learn about light this week?”
  - “What else do we want to know?”

### Follow-Up Investigation

- Return to light lab and explore favorite materials.
- Offer mirrors and transparent paper.
- Optional prompt: Welcome children to draw favorite material and what it did with the light.

### Closing Circle

- Add reflections and new questions to the Wonder Wall.
- Prepare for shadow exploration next week.



# Week 2: What Is a Shadow?

**Focus Concept:** Shadows and how they are made

**Weekly Objective:** Children observe shadows, investigate what causes them, and explore how light and objects interact to create changing shapes. They begin experimenting with body shadows, object shadows, and puppet play.

## Monday – Shadow Explorers

### Morning Meeting

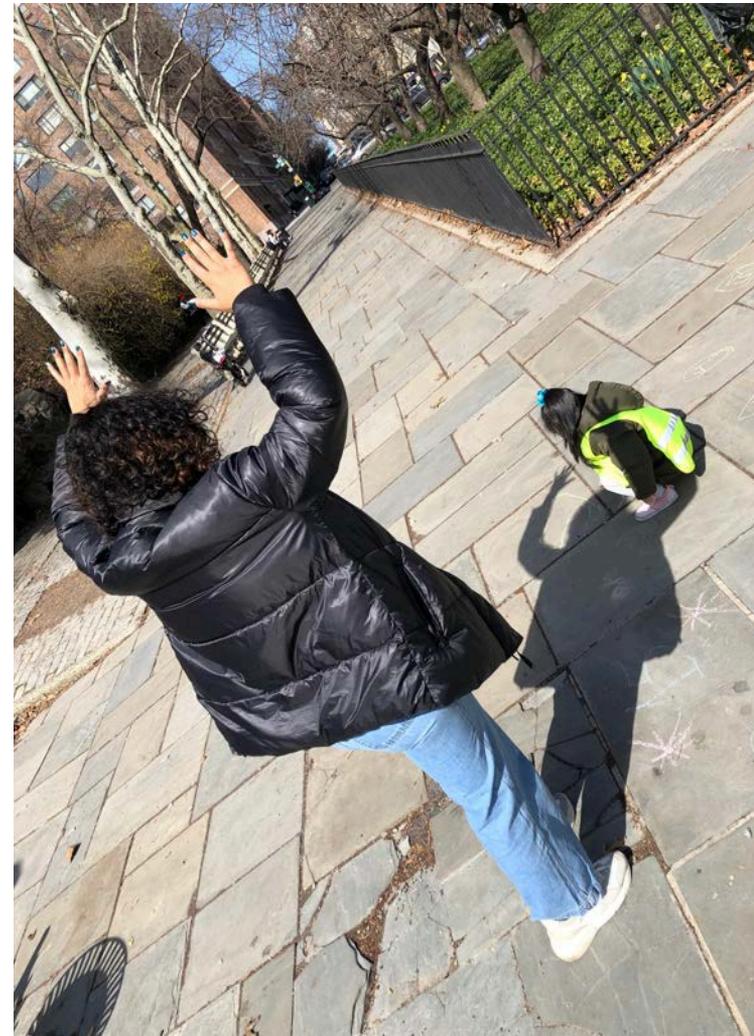
- Book: *Shadows and Reflections* by Tana Hoban
- Prompt: “What is a shadow?”
- Discussion questions:
  - “What makes a shadow?”
  - “Do shadows always look the same?”

### Follow-Up Investigation

- Go outside and use chalk to trace shadows on the ground. Compare sizes, poses, and shapes.
- Alternative if it's a cloudy day:
  - Set up a flashlight or lamp indoors to cast shadows on a wall or large paper.
- Optional: use journals or clipboards for children to draw their traced shape or other observations

### Closing Circle

- Reflect: “What did your shadow look like? Did it match your body?” Add observations to Wonder Wall.



## Tuesday – Moving Shadows

### Morning Meeting

- Book: Flashlight by Lizi Boyd (revisited)
- Focus on how light changes shadow size and shape.
- Discussion questions:
  - “What happens to the shadow when you move the light?”
  - “What if the light is really close?”

### Follow-Up Investigation

- Children shine flashlights on objects in a dim space. Move lights closer and farther.
- Journals: draw a long shadow and a short shadow. Optional labels: small, big, tall.

### Closing Circle

- Reflect: “What changed your shadow the most?” Add discoveries to Wonder Wall.



## Wednesday – Shadow Puppets

### Morning Meeting

- Book: Oscar and the Moth
- Prompt: “Can we tell a story with light and shadow?”

### Follow-Up Investigation

- Children create simple shadow puppets
  - Choose from hands, sock puppets, toys or create ones from cardstock and sticks.
- Use flashlights and a white sheet or clear wall space to perform scenes.
- Journals: draw their puppet and label a part.

### Closing Circle

- Share favorite puppet scenes or characters. Add new ideas to Wonder Wall.



# Thursday – Our Bodies

## Make Shadows

### Morning Meeting

- Book: The Black Rabbit (revisited)
- Discussion questions:
  - “How does your shadow move with you?”
  - “Can you make your shadow jump?”

### Follow-Up Investigation

- Go outside and play with full-body shadows.
  - Recreate inside if the weather is cloudy or rainy.
- Trace poses with chalk or photograph dramatic poses.
- Journals: draw themselves as a shadow.

### Closing Circle

- Reflect: “How did your body and shadow move together?”



# Friday – Review and Reflect

### Morning Meeting

- Book: Shadows and Reflections (flip through for recap)
- Discussion questions:
  - “What do we now know about shadows?”
  - “What else do we wonder?”

### Follow-Up Investigation

- Children choose their favorite materials to explore over the light table or may opt for shadow play.
- Journals: draw, write, or collage one new thing they learned about shadows.

### Closing Circle

- Review the Wonder Wall. Add closing thoughts or new ideas to explore next week: mirrors and reflections.



# Week 3: Mirrors and Reflection

**Focus Concept:** Reflection and mirrored images

**Weekly Objective:** Children explore mirrors and reflective surfaces, noticing how light bounces, how reflections change, and how their own image appears in different materials. They begin comparing angles, symmetry, and reverse images through play and observation.

## Monday – What is Reflection?

### Morning Meeting

- Book: Shadows and Reflections by Tana Hoban
- Prompt: “Where do we see reflections?”
- Discussion questions:
  - “Have you ever seen yourself in something besides a mirror?”
  - “What does a reflection do?”

### Follow-Up Investigation

- Explore the classroom with mirrors and/or with reflective trays.
- Children find and draw a reflections (themselves, objects, windows, etc.) in Light Journals.
  - Optional - Add a note: “A reflection is...” (dictated if needed).

### Closing Circle

- Reflect: “Where did we find reflections today?”  
Add to Wonder Wall.



## Tuesday – Mirrors & Movement

### Morning Meeting

- Book: Flashlight by Lizi Boyd (revisited with mirror-focused lens)
- Prompt: “Can mirrors move light?”
- Discussion questions:
  - “What happens when you tilt a mirror?”
  - “Can we make light bounce?”

### Follow-Up Investigation

- Use flashlights and mirrors in a darkened space. Children test bouncing light onto walls, ceilings, and objects.
- Journal prompt: draw the path of the light using arrows or lines.

### Closing Circle

- Share: “What surprised you about the mirror and the light?” Add to Wonder Wall.



## Wednesday – Exploring Symmetry

### Morning Meeting

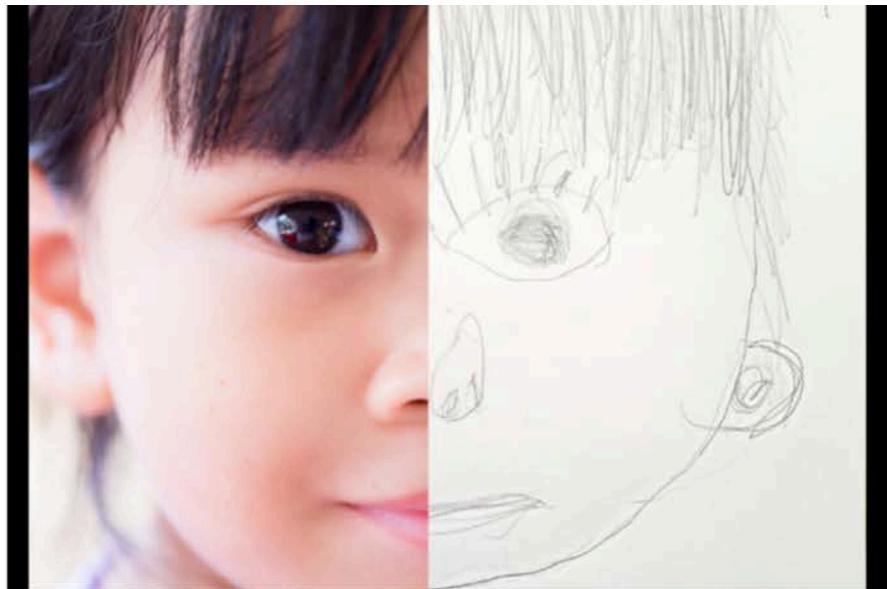
- Book: The Black Rabbit
- Prompt: “Do reflections always look the same as the real thing?”
- Discussion questions:
  - “What is the same in a reflection?”
  - “What is different?”

### Follow-Up Investigation

- Offer fold-over paint symmetry art or have an image of half the child’s face for them to sketch the other half.
- Journals: draw something symmetrical or use a mirror to finish a drawing.

### Closing Circle

- Reflect: “What makes something symmetrical?”



## Thursday – Mirror Mazes and Patterns

### Morning Meeting

- Book: Oscar and the Moth (used for review and connection to light travel)
- Prompt: “Can we design with reflections?”
- Discussion questions:
  - “What kind of design could you make with mirrors?”
  - “Does it look the same from all sides?”

### Follow-Up Investigation

- Children build mirrored paths with blocks and small mirrors and/or small, portable acrylic mirrors.
- Journals: draw their design and describe what they saw in the mirror.

### Closing Circle

- Reflect: “How did mirrors change your design?” Share highlights from the day.



## Friday – Review and Reflect

### Morning Meeting

- Book: “All About Light” by Lisa Trumbauer
- Prompt: “What was your favorite mirror activity?”
- Discussion questions:
  - “What did we learn about mirrors and reflections?”
  - “Can we use mirrors to learn more next week?”

### Follow-Up Investigation

- Free exploration with all reflective materials—mirrors, trays, shiny paper, metal objects.
- Add clipboards for documentation.
- Journals: children choose what to draw and write about from their favorite experience.

### Closing Circle

- Revisit the Wonder Wall. See what questions have been answered and what remains. Celebrate the discoveries so far.



# Week 4: Light in Art & Expression

**Focus Concept:** Using light as a tool for creativity and storytelling

**Weekly Objective:** Children explore how light can be used in imaginative ways—through color, projection, shadow art, and expression. They revisit earlier discoveries and bring together their learning in collaborative and individual representations.

## Monday – Painting with Light

### Morning Meeting

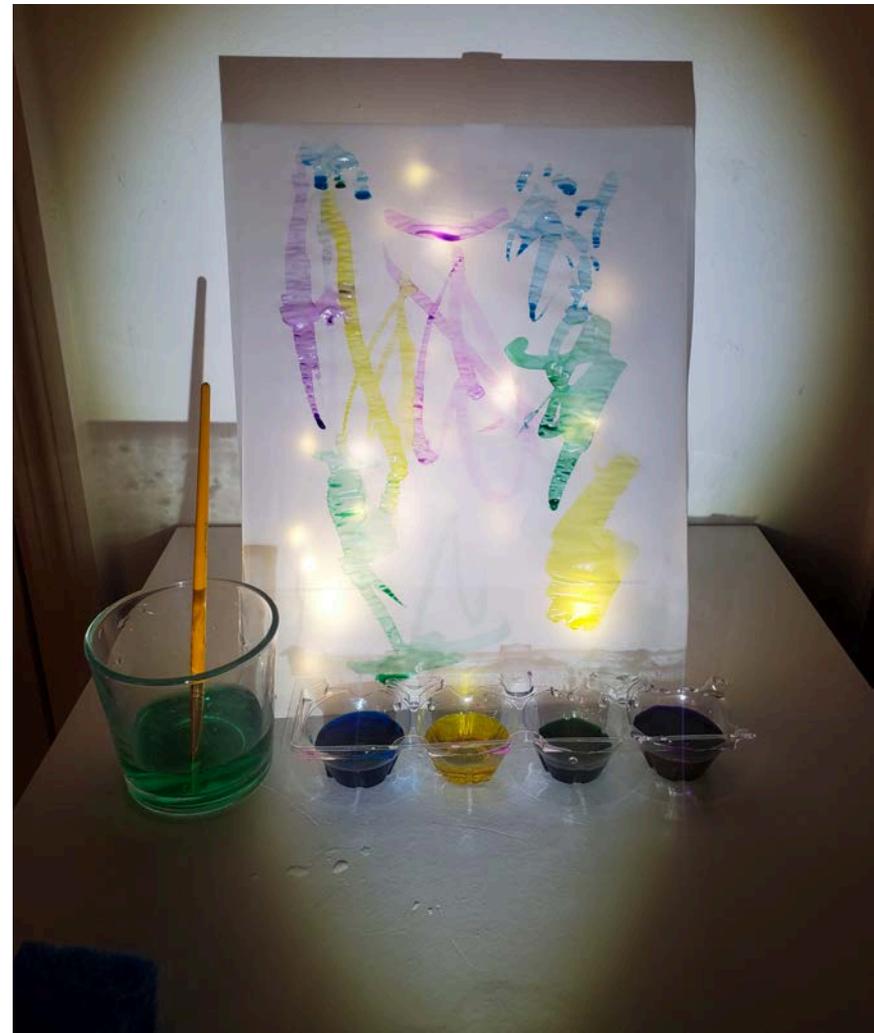
- Book: All About Light by Lisa Trumbauer
- Prompt: “Can we make art with light?”
- Discussion questions:
  - “How is light used in art?”
  - “What happens when light shines through color?”

### Follow-Up Investigation

- Two options:
  - Option 1: Offer overhead projector or flashlight + colored cellophane setups. Children layer colors to create changing patterns.
  - Option 2: Place tracing paper over light table or put light source behind the paper and pair with watercolors.

### Closing Circle

- Reflect: “What colors (or art) did you make with light?” Add discoveries to Wonder Wall.



## Tuesday – Light Stories & Shadow Scenes

### Morning Meeting

- Book: Flashlight by Lizi Boyd (used as inspiration for storytelling)
- Prompt: “Can we tell a story with light?”
- Discussion questions:
  - “What characters or scenes could you make with shadows?”
  - “How do you make your story move?”

### Follow-Up Investigation

- Use flashlights, puppets, and a white backdrop to create shadow stories.
- Journals: children draw their story scene or a character from their shadow play.

### Closing Circle

- Share stories with the group. Reflect on how light helped them tell their story.



## Wednesday – Light and Color

### Morning Meeting

- Book: All About Light (revisited, focusing on color and spectrum)
- Prompt: “What colors do we see in light?”
- Discussion questions:
  - “Have you ever seen a rainbow?”
  - “What happens when light passes through water or glass?”

### Follow-Up Investigation

- Set up prisms, crystals, or water-filled containers in sunlight. Children observe rainbow patterns and colored shadows.
- Journals: draw what they saw, labeling colors. Optional: use watercolor to paint what the light revealed.

### Closing Circle

- Reflect: “Where did the colors come from?” Add vocabulary like prism, spectrum.



# Thursday – Our Light Exhibit

## Morning Meeting

- Book: The Black Rabbit or Tana Hoban's Shadows and Reflections (as visual inspiration)
- Prompt: "What would you like to show about light?"
- Discussion questions:
  - "What did you enjoy exploring most?"
  - "What would you like to share with others?"

## Follow-Up Investigation

- Children choose or help to create a final piece for a classroom light exhibit
  - Adults help with dictations if needed: "This is about..."

## Closing Circle

- Prepare to invite others (families, another class) to view the exhibit. Reflect: "What do you hope others will notice or learn?"



# Friday – Gratitude & Celebration

## Morning Meeting

- Book: All About Light (final revisit to recap learning)
- Prompt: "What did light teach us?"
- Discussion questions:
  - "What surprised you about light, shadows, or mirrors?"
  - "What would you like to keep exploring?"

## Follow-Up Investigation

- Celebrate with a "light walk" around the classroom or school—children point out reflective, shadowy, or bright spaces.
- Final Light Journal prompt: "I loved learning about..." or "Light helps me..."

## Closing Circle

- Reflect together. Revisit the Wonder Wall and invite final thoughts, drawings, or messages. Optional: send home a small light-related keepsake or portfolio of journal pages.



# About Centers, Provocations, and Materials

The following center setups and materials are designed to support the investigation across the unit. The intention is not to do everything at once—but to select, rotate, and adapt based on the children's interests, developmental needs, and the rhythm of the group.

These ideas should be seen as options to choose from, not a checklist to complete. Overloading the space with too many choices can overwhelm young children. Instead, offer a small number of materials at a time, and observe how children engage with them before introducing more.

## **You might choose to:**

- Keep certain materials consistent for multiple weeks to allow for repetition and mastery.
- Rotate in new elements slowly to spark renewed interest or deeper thinking.
- Modify invitations to become more complex or more accessible as needed.

## **Children should be welcomed to:**

- Make choices about how and where they work within the classroom.
- Move materials between areas (when appropriate) to support their ideas or projects.
- Combine materials across centers to create more layered and meaningful representations.
- Take responsibility for the tools they use by helping to return them when finished.

While autonomy is encouraged, a sense of shared care and responsibility is expected.

In all cases, the role of the adult is to:

- Observe how materials are used and what thinking is emerging.
- Document children's approaches, choices, and discoveries.
- Decide when to step back, when to scaffold, and when to offer something new.



# Science & Discovery Center

**Purpose:** Invite observation, experimentation, and documentation of light and its behavior.

## Materials & Setup Options:

- **Mirror Exploration:** Offer small, flexible mirrors, mirrored trays, and mirrored blocks. Include objects to observe side-by-side (faces, flowers, blocks).
- **Light & Shadow Testing:** Flashlights, lamps, and clipboards with labeled materials—transparent, translucent, opaque.
- **Color Filters:** Provide cellophane sheets, color paddles, or transparent lids in primary colors. Add trays for layering and blending.
- **Reflective Surfaces:** Add foil, CDs, metal bowls, and mylar sheets. Let children test which shine and bounce light.
- **Prism & Rainbow Station:** Prisms and glass beads in direct light. Include laminated spectrum chart for reference.

**Notes:** Include vocabulary cards (reflect, bounce, angle, light, dark, shadow, source). Add clipboards and pencils for drawing observations or testing setups.

# Dramatic Play

**Purpose:** Support imaginative storytelling and role-play using light and shadow.

## Materials & Setup Options:

- **Shadow Theater:** Hang a white sheet and provide flashlights, character puppets, and cut-out shapes.
- **Light Explorer Role Play:** Add headlamps, flashlights, and journals for note taking.
- **Reflective Dress-Up:** Include mirrors, mirror glasses, metallic scarves or hats, and other forms of reflective gear.
- **Dark Cave Setup:** Create a cozy corner with blackout fabric and soft lighting for "night" pretend play.
- **Nocturnal Care:** Incorporate plush nocturnal animals into the center (e.g. bats, raccoons, owls, skunks, etc.)

**Notes:** Prompt play with signs like "Light Lab" or "Shadow Detectives at Work." Adults may join play as narrators or helpers, but of course do not dictate or direct the play. Children may choose to engage with the center and materials in a way that is most intrinsically motivating for them.

# Sensory Table

**Purpose:** Explore how light interacts with texture, color, and transparency.

## Materials & Setup Options:

- **Translucent Loose Parts:** Fill the bin with acrylic gems, colored lids, clear buttons, and glass pebbles. Add tongs, scoops, and small bowls.
- **Reflective Sensory Mix:** Combine foil, shiny ribbon, tinsel, and mirrored confetti. Add black paper for contrast.
- **Color Sorting:** Provide clear cups and colored water or transparent items to sort by hue and light interaction.
- **Shadow Play Bin:** Add figurines and flashlights. Children can create mini shadow scenes using sand or dark felt as a base.

**Notes:** Keep materials minimal to avoid overstimulation. Add laminated cards: "What do you see through it?" "Can light go through this?"



## Art Studio

**Purpose:** Encourage creative representation using light, reflection, and shadow.

### Materials & Setup Options:

- **Mirror Drawing:** Provide small mirrors and natural objects for children to observe and sketch reflected images - whether it be themselves or objects within the room.
- **Shadow Tracing:** Shine a lamp or projector on small toys. Tape paper down and trace shadows with pencils or black markers.
- **Reflective Surfaces:** Tape down aluminum foil and other reflective materials for children to color on.
- **Symmetry Collage:** Offer pre-folded paper or mirror boards with loose parts to design symmetrical patterns.
- **Paint or Loose Parts Over Light:** Invite children to paint or explore loose parts on tracing paper over a light source.



**Notes:** Rotate in materials slowly and invite children to reflect on their designs. Display their light-based artwork near real sources of light when possible.

# Blocks and Construction

**Purpose:** Allow children to build, design, and test how structures interact with light.

## Materials & Setup Options:

- **Clear Blocks:** Add acrylic or translucent blocks to the block area.
  - Mirror blocks, clear blocks, magna tiles
- **Light Path Challenge:** Provide flashlights and create a space where children build tunnels or ramps to guide beams of light.
- **Reflective Additions:** Include mirrored panels, shiny tiles, foil-covered blocks, and small lights.
- **Small World Scenes:** Add figures and light sources to tell stories in constructed environments. Consider adding nocturnal animal toys.

**Notes:** Offer visual prompts like “Can you build a tower with a shadow?” or “Can light shine through your bridge?”



# Literacy Center

**Purpose:** Support vocabulary, storytelling, and early writing through light-related experiences.

## Materials & Setup Options:

- **Vocabulary Wall:** Feature laminated cards with words and real photos (light, shadow, mirror, bright, dark, reflect, bounce).
- **Journal Station:** Provide black and white paper, colored pencils, and prompts like “My shadow looked like...” or “Today I saw light on...”
- **Storytelling Area:** Offer mini-books, shadow scene cards, and puppets to support light-themed storytelling.
- **Light Tracing:** Project letters or shapes using an overhead or flashlight. Children trace projected images onto paper.

**Notes:** Invite children to revisit earlier entries and add more detail. Rotate prompts based on the current focus—light, shadow, mirror, or reflection.



**Light reveals. Shadows define. Reflection deepens.**