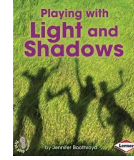


Unit 4: Light and Darkness

WEEK 3



Art Studio: Sculptures and Light

Children use found and recycled materials to create sculptures that interact with natural and artificial light sources to create shadows.

Big Ideas	Light comes from natural and artificial sources. People use their senses to see and feel light. Shadows are created when an object blocks light.
Guiding Questions	What do we notice about shadows? How can we use light?
Family Engagement	Encourage families to contribute materials for this experience. See materials list for suggestions.
Vocabulary	<p>connect: to link, to join together</p> <p>light source: something that shines light, like the sun, or a lamp</p> <p>opaque: not letting any light through</p> <p>shadow: a dark area made when light is blocked</p> <p>translucent: letting some light through</p> <p>transparent: letting all light through</p>
Materials and Preparation	<ul style="list-style-type: none"> ● <i>Playing with Light and Shadows</i>, Jennifer Boothroyd ● <i>Flashlight</i>, Lizi Boyd ● Sculptures and Light Artist Resource Project the resource or have copies available. ● device for showing video (optional) ● a collection of Beautiful Stuff (found and recycled materials) including: <ul style="list-style-type: none"> ○ opaque materials: cans, blocks, figurines, solid objects, fabric, kitchen utensils, tin foil ○ translucent materials: colanders, plastic mesh, tissue paper ○ transparent materials: plastic packaging, bubble wrap, plastic transparencies ● clothespins

	<ul style="list-style-type: none"> ● pipe cleaners or floral wire ● something to use as a base for the sculptures, such as pieces of styrofoam packaging. Or something to hang the materials off, like a wooden dowel, clothes hanger, and string. <p>It is possible to deconstruct and reuse some of the materials from the wind sculptures from Unit 3.</p> <ul style="list-style-type: none"> ● Make a Light/Shadow Sculpture visual steps ● a light source: projector, flashlights, a lamp, or phone light. <p>On a bright sunny day, children can also do this activity using sunlight.</p> <p>Children will create individual sculptures. Set up each spot in the Art Studio with a base (see ideas above). Display the Artist Resource nearby, and place materials in baskets on the table or a nearby shelf.</p> <p>Bring to the Intro to Centers: <i>Playing with Light and Shadows, Flashlight</i>, Artist Resource, device for showing video (if possible), some Beautiful Stuff</p>
<p>Intro to Centers</p>	<p><i>Remember when we created wind sculptures together?</i> Show a photograph of your class wind sculptures.</p> <p><i>This week, we will make new sculptures in the Art Studio. We have some Beautiful Stuff, some materials we can use to make a sculpture together, like we did with our wind sculptures. We have opaque, translucent, and transparent materials. We learned about these kinds of materials in <i>Playing with Light and Shadow</i>.</i> Show and name an opaque, translucent, and transparent object. Show the book.</p> <p><i>When we made wind sculptures, we used a fan to make our sculptures move. This time, instead of blowing our sculpture with wind, we will see what happens when we use a light source, or something that shines light, on our sculpture. This is like when the child in <i>Flashlight</i> shines a light on the animals in the forest.</i> Show the light source and <i>Flashlight</i>. <i>What do you think will happen when we shine a light on our sculpture?</i> Show the light source and demonstrate shining it on some of the materials. Invite children to respond.</p> <p><i>Let's learn about two artists who make shadow sculptures. This might give us inspiration, or some new art ideas.</i> Read or project the <i>Sculptures and Light</i> Artist Resource to learn about Rashad Alakbarov's work.</p>

	<p><i>Rashad creates sculptures using found materials such as kitchen utensils, wire, and paper clips. He makes sure to have a strong light source like a flashlight or projector.</i></p> <p>Show children photos of Rashad’s ‘Shadow Paintings’.</p> <p><i>What do you notice about Rashad’s artwork? What materials has he used to make shadows?</i></p> <p>Read the resource and invite children to look at the pictures. Save the second part of the resource, about László Moholy-Nagy and Ralph Kistler, for Week 4.</p>
During Centers	<p>Children choose a base (a piece of styrofoam will work best) and select materials to add to their sculpture. Support children to use pipe cleaners, wire, or clothespins to attach materials together.</p> <p>Refer to the artist resource and talk about Rashad Alakbarov’s work.</p> <p>Talk about the qualities of the materials they are adding and if the materials are opaque, translucent, or transparent.</p> <p>Provide children with a light source so they can shine light on/through their sculpture. Notice the shadows that are created, and where light passes through the sculpture. Move the light source around to explore how the shadows change depending on where the light is positioned. Notice how the light shines through some materials but not others.</p>
Differentiation Ideas	<ul style="list-style-type: none"> ● Offer a range of different materials to manipulate so that children can choose a material that is comfortable for their hands and expresses their ideas. ● Place materials in bins according to their characteristics. Use the Light Play labels from Science and Engineering (Unit 4, Week 3) to label the bins. ● Provide the Make a Light/Shadow Sculpture visual steps to model and support children with making sculptures.
Facilitation	<ul style="list-style-type: none"> ● What materials will you add to our sculpture? ● Is that material opaque, translucent, or transparent? How can you tell? ● What happens when we shine light on our sculpture? ● Where will you add that material? Above, below, next to....? ● How many [opaque, transparent, translucent] things do you see in our sculpture? ● How does it feel to make a sculpture? ● How can you get help with that tricky part? How can you help a friend?

	<ul style="list-style-type: none"> ● What does light do? ● What happens when we move the light source to another position? ● How can we make the shadows bigger/smaller?
Standards	<p>SEL7: The child will demonstrate the ability to communicate with others in a variety of ways.</p> <p>SEL10: The child will demonstrate the ability to seek help and offer help.</p> <p>APL5: The child will cooperate with others in play and learning.</p> <p>SL.PK.6. Speak audibly and express thoughts, feelings, and ideas.</p> <p>L.PK.1. Demonstrate command of the conventions of standard English grammar and usage when speaking.</p> <p>L.PK.1a. Demonstrate the ability to speak in complete sentences and to form questions using frequently occurring nouns, verbs, question words, and prepositions; name and use in context numbers 0–10.</p> <p>PK.G.A.1. Identify relative positions of objects in space, and use appropriate language (e.g., beside, inside, next to, close to, above, below, apart).</p> <p>PreK-PS4-2(MA). Connect daily experiences and investigations to demonstrate the relationships between the size and shape of shadows, the objects creating the shadow, and the light source.</p>

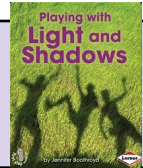
Image citations for Center Language Supports:

- connect: Athan Howe at picryl.com
- collaborate: Carlonem on Pixabay
- opaque: <https://fineartamerica.com/featured/vintage-wooden-door-in-vienna-helenap-art.html>
- shadow: <https://www.peepandthebigwideworld.com/en/educators/curriculum/center-based-educators/23/shadows/node/824/>
- translucent: <https://www.mornglass.com/how-to-make-the-glass-frosted-glass.html>
- transparent: <https://www.mornglass.com/how-to-make-the-glass-frosted-glass.html>

Notes

U4 W3-4 Center Language Supports

Art Studio: Sculptures and Light



Facilitation prompts:

- What materials will you add to our sculpture?
- Is that material opaque, translucent, or transparent? How can you tell?
- What happens when we shine light on our sculpture? What happens when we move the light source to another position? How can we make the shadows bigger/smaller?
- Where will you add that material? Above, below, next to....?
- How many [opaque, transparent, translucent] things do you see in our sculpture?
- How can you get help with that tricky part? How can you help a friend?
- How does it feel to create a sculpture?
- What does light do?



collaborate



connect



opaque



shadow



translucent



transparent

Children are learning to...

- communicate with others, seek and offer help, and cooperate with others in play and learning. (SEL7, SEL10, APL5, SL.PK.6, L.PK.1)
- use number words in context 0-10 and talk about objects in space using appropriate language (e.g., beside, inside, next to, close to, above, below, apart). (L.PK.1a, PK.G.A.1)
- connect daily experiences to demonstrate the relationships between the size and shape of shadows, the objects creating the shadow, and the light source. (PreK-PS4-2)

Art Studio: Sculptures and Light Artists Resource

Learn about contemporary artists who create sculptures using found and recycled materials.

Artist: Rashad Alakbarov

This is Rashad Alakbarov. He is an artist from Azerbaijani who loves making artwork out of light and shadow. Rashad uses everyday materials such as kitchen utensils and things you would find around the house to make intricate 'shadow paintings'. We can use Rashad's artwork as inspiration for making our own light sculptures in the classroom.



<https://www.azernews.az/culture/66083.html>

This 'shadow painting' of the city of Istanbul:



Rashad Alakbarov 'Shadow Painting'

What do you notice about Rashad's sculptures? Here's another sculpture to look at:

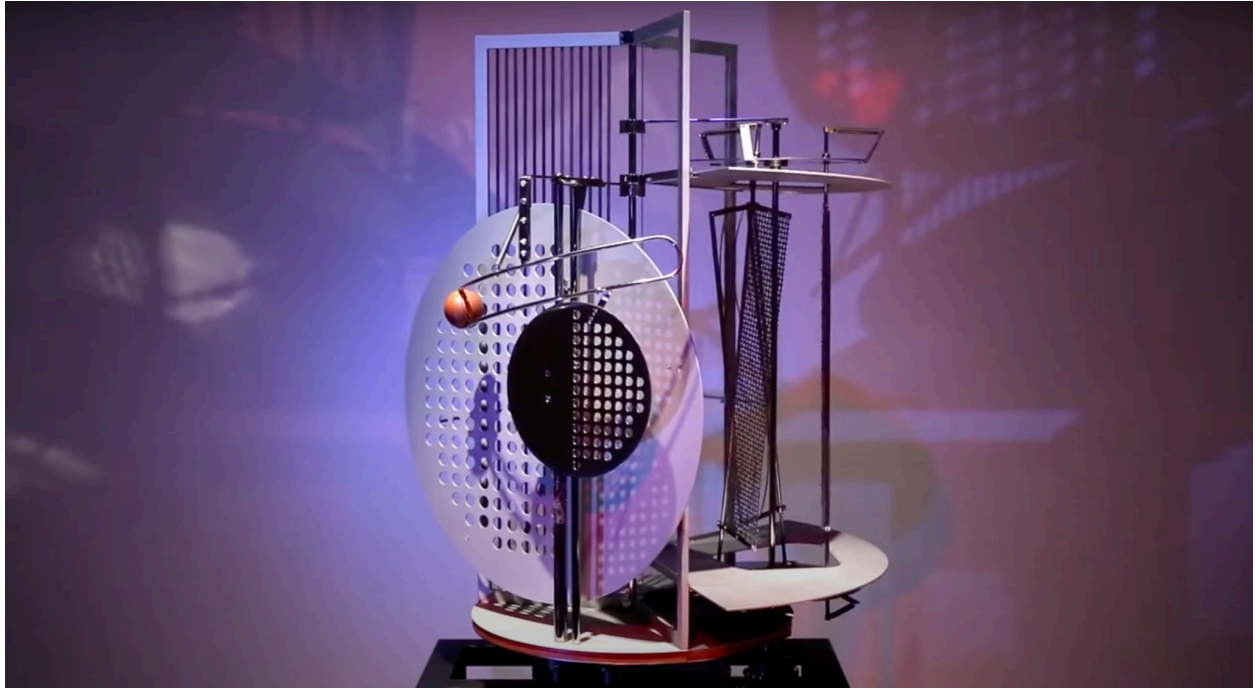


<https://sciamanathinking.files.wordpress.com/2013/11/sombra-03.jpg>

Sculptures and Light Artists Resource U4 W3-4

Part 2

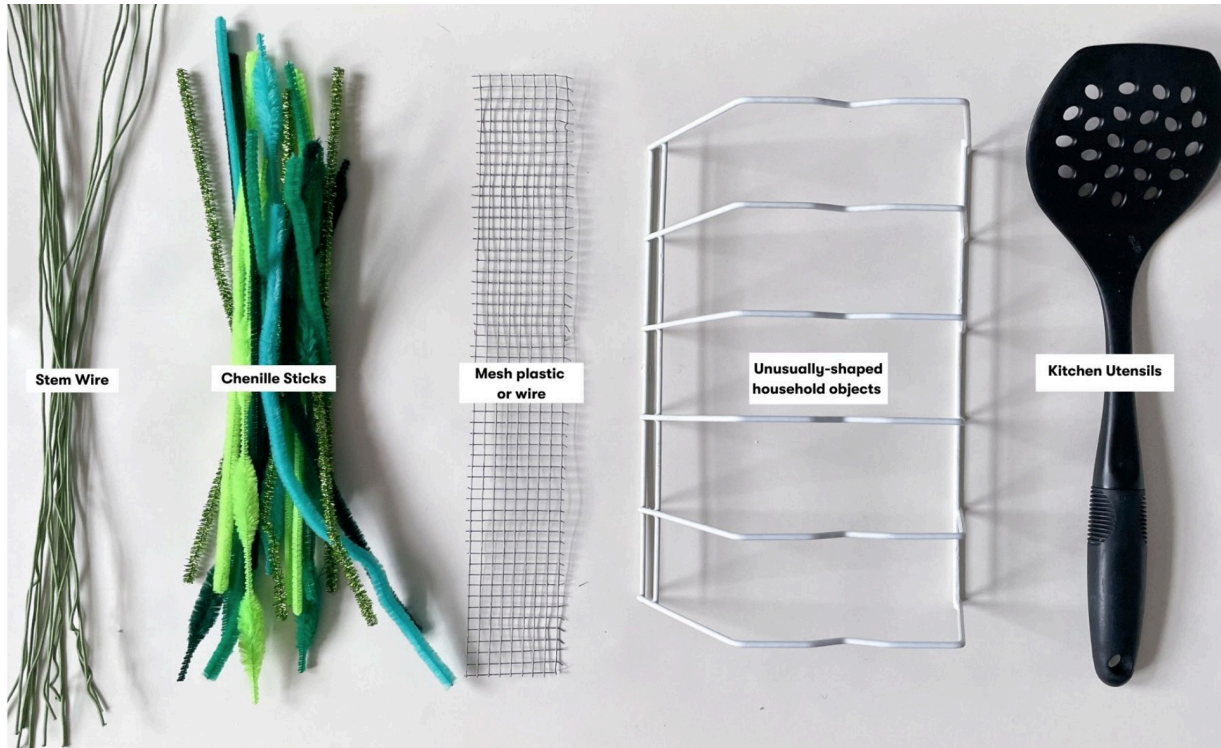
Artist: László Moholy-Nagy



László Moholy-Nagy, 'Light Prop for an Electric Stage', (1929-30). Metal, plastics, glass, paint, and wood, and an electric motor. Harvard Art Museums/Busch-Reisinger Museum, Hildegard von Gontard Bequest Fund.

László Moholy-Nagy loved making artworks using light. His sculpture, “Light Prop for an Electric Stage” (watch the video [here](#)) uses materials such as metal, plastic, and wood to explore light, reflection, opacity, and translucency. As the sculpture moves around in circles, the light bounces off the materials in unusual ways, creating interesting shadows and reflections on the walls. László was born in Hungary and moved to the United States. You can see “Light Prop for an Electric Stage” at the Harvard Art Museums in Cambridge, MA.

Here are some materials to create sculpture and light sculptures:

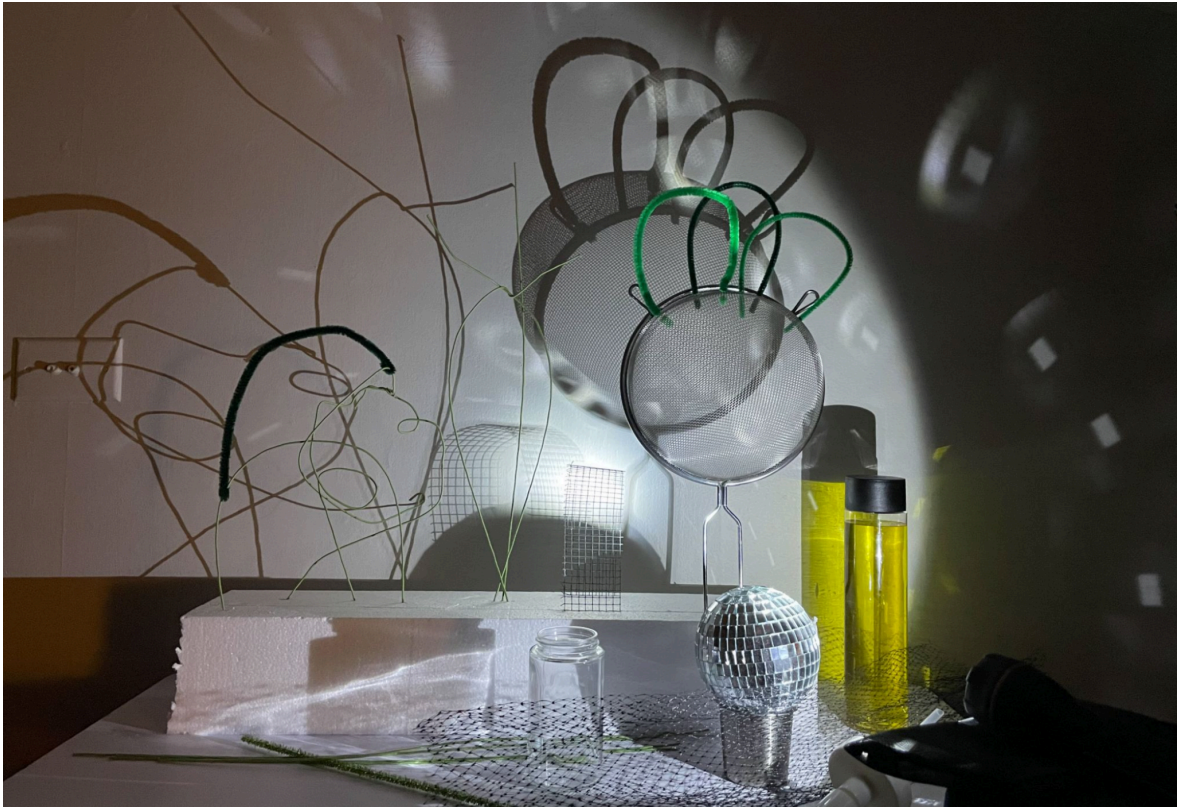


Louisa Penfold



Louisa Penfold

Here are some ways to setup the sculpture and light activity in the classroom:



Louisa Penfold



Shiori Egawa and Galek Yangzom

Other resources for ideas:

<http://www.louisapenfold.com/make-a-shadow-sculpture/>

<https://www.exploratorium.edu/tinkering/projects/light-play>

Artist: Ralph Kistler

Ralph Kistler is an artist from Germany who loves to make artwork that moves.



Ralph Kistler

In his sculpture, Chinese Tales (below), he collected objects like clips, cleaning brushes, and kitchen utensils. He positioned them in front of a circle of overhead projectors to create artwork that is 360 degrees.

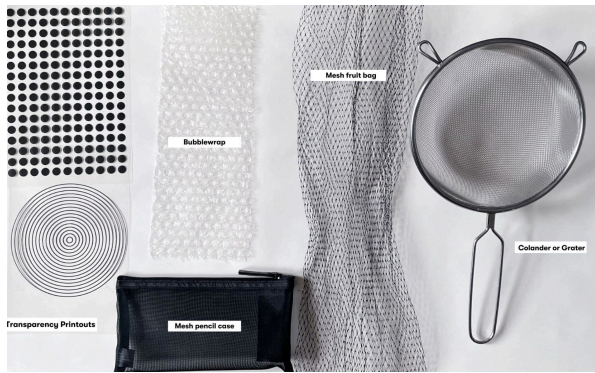


Ralph Kistler, 'Cuentos Chinos/ Chinese Tales' installation view



Ralph Kistler, 'Cuentos Chinos/ Chinese Tales' installation view

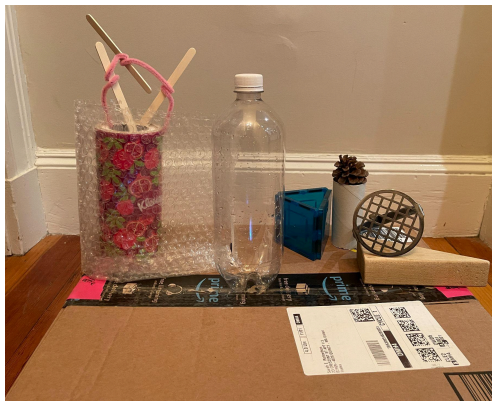
Make a Light/Shadow Sculpture



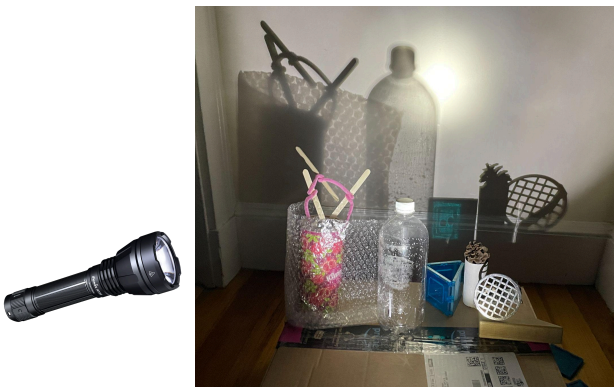
1. Gather opaque, translucent, and transparent materials.



2. Choose a base.



3. Connect or arrange items on base.



4. Shine a light on sculpture.

Image citation: materials: Luisa Penfold; sculpture: Sarah Richardson