

SHADOW PLAY (LEVEL 3)

Description	Learners will explore the qualities and characteristics of light and shadows. They will create their own shadow theatre by illustrating part of their story, illustrating and cutting their own puppets and setting up the stage
Leading Question	Can we create a show with shadows?
Total Time Required	5 hours over 5 days
Supplies Required	White Sheet Straws / Skewers / Toothpicks Light source: Lamp, Torch, Sun etc. Tape, Paper, Black Marker / Crayon, Scissors Paint and Paintbrush Paper and Pen
Learning Outcomes	<ol style="list-style-type: none"> 1. Know that light moves in straight lines 2. Identify sources of light as natural and artificial 3. Classify and name some everyday examples of opaque, translucent and transparent objects. 4. Investigate how opaque objects cast a shadow, and how the shadow appears. <ol style="list-style-type: none"> 1. Investigate how shadows change when the distance of a light source is altered 2. Storytelling through puppets
Previous Learning	None

DAY 1

Today you will explore the properties and qualities of light through this project!

Suggested Duration	Activity and Description
15 minutes	<ul style="list-style-type: none"> ● Explore the importance of light so that we can see and to provide heat. Draw a scene in the daylight and night – think about the different things we do when it is light or dark.

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- Illustrate nocturnal animals as those that stay awake at night and diurnal animals that are active in the day
- Also think of professions of people that work at night and those that work in the day. Hints: Doctors, Security Guards, Firefighters etc. work at night






15 minutes

- Draw an image of “light” with 5 relevant adjectives. Think of how you can draw and show light and draw this. Think of all the words you associate with light.
 - What colour do you associate with light?
 - How would you describe light?
 - What are the main sources of light?
 - Do you think of hot or cold when you think of light?
- Illustrate and label these answers in mind map for example: bright, sun, yellow etc.



15 minutes

- Identify all the sources of light and make a list illustrating their examples
- Input: Parents can support the learners with input on this including:
 - Natural: Sun, Stars, Moon, Flame (Candles, Stove), Lightning etc.
 - Artificial: Light bulb, Torch etc.
- Draw the different sources within each of the columns:

Sources of Light	
Natural	Artificial
1. Sun 	2. Bulb 
3. Fire 	

15 minutes

- Explore the concept of sight
- Input: Our eyes have light receptors which receive light and form an image on our retina. So, if there is no light reflected from an object, we cannot see the object.
 - What happens without lights and how the different senses work together? Learners can play a game of dark room. In this game, learners will turn off all the lights of the room and make it dark. The family members will call out and learners will try and find them based on their voice. Learners will think about how their different senses of sound and sight work together, there are animals like bats that are blind but follow sounds and echoes.

DAY 2

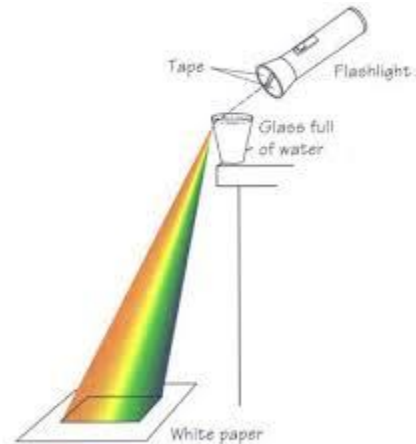
Today you will continue to explore the properties of light and colour.

**Suggested
Duration**

Activity and Description

20 minutes

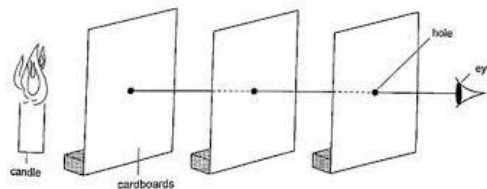
- Test your assumption you made the day before of light usually being yellow or white.
- Conduct an experiment on how rainbows are formed. Place a white paper or sheet on the ground or a table. Fill a glass with water and hold this against the sun – as the light goes through the glass of water it reflects a rainbow on the white sheet of paper



- Input: This is called the prism effect when different colors of light hit a prism, or an object with 2 sides that are not parallel, they leave at different angles (refraction) so they separate. Different colors of light have different wavelengths and therefore bend differently for example red turns slower and therefore appears on the top and violet turns faster and appears on the bottom
- Understand that sunlight has all the colors. Paint over the reflected rainbow that is on the paper with colors and paints

20 minutes

- Explore how light travels in straight lines. Cut out a small hole in three pieces of cardboard or thick paper. Place a torch/candle in front of this and see if the light travels through and is visible from the back. These pieces will be put in a line one behind another and not in a straight line. Explore that light can only travel through all three holes when the holes are in a straight. Try and draw this experiment

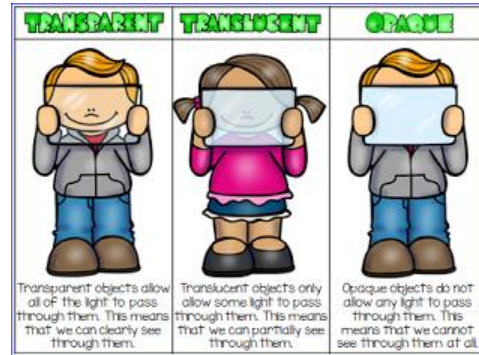


- Input: Fact light has a dual nature: that of a shower of particles, photons, that are believed to be packets of energy travelling as a straight stream; and a wave nature. When holes are larger than the lights wavelength, light appears to follow the classical view (travel in straight lines).

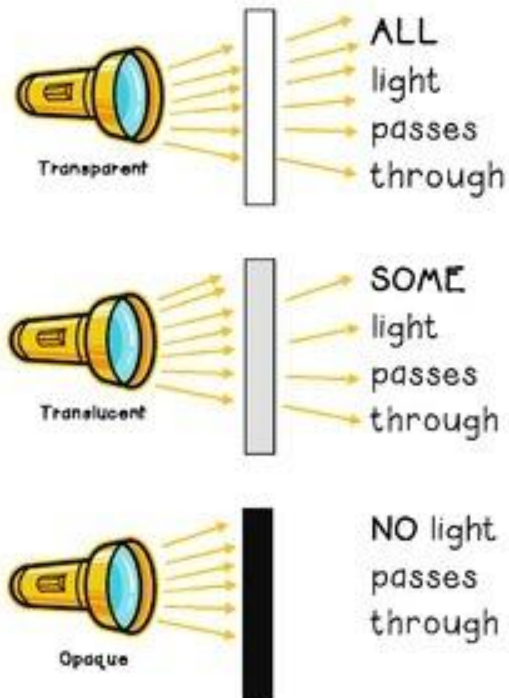
20 minutes

- Explore how some things are transparent, translucent or opaque by holding up items against a source of light.
- Explore new terminology including:

- Transparent materials include glass, windows, clear plastic etc. that you can clearly see through since all light passes through
- Translucent materials include sunglasses, white shirt, paper towel, white sheet etc. that you can partially see through since some light passes through
- Opaque materials include a chair, a cardboard box, a book etc. that no light passes through and you cannot see anything through



Translucent, Transparent & Opaque



DAY 3

Today you will explore the sun's patterns and the impact of shadows.

Suggested Duration

30 minutes

Activity and Description

- Track their sun's movements through the day and see where it is from their window. Illustrate this in a schedule answering the following questions
- Prompts include:
 - Where do they see the sun from their window?
 - How bright is it?
 - How big is the sun?
 - What is the colour of the sky around it?
- Draw and label images of sunrise, mid-day and sunset based on the above.



30 minutes

- Explore the concept of shadows – a shadow is made when an object blocks the light – this is for opaque objects. A shadow can show an object's shape, but it cannot show colors or details (like a smile or a frown).
- Place small toys or objects in the sun and place a paper underneath it. Try and trace the shadows of their toys



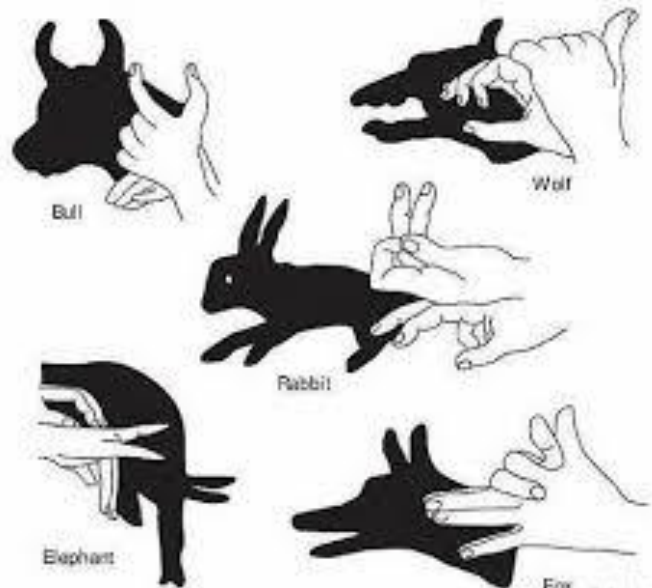
- Try and form shadows of their own body and move around to see how their shadows move – they will form a sundial to mark their own shadows at different times of the day standing at the same place. Notice where their shadows move on the ground and the length of their shadows



DAY 4

Today you will begin to plan for your shadow puppet theatre!

Suggested Duration	Activity and Description
30 minutes	<ul style="list-style-type: none"> • Use a torch or the sun to form shadows with your hands and form different animals and characters and try and have your family guess what these different shadows are?



20 minutes

- Think of a basic story that you will tell the viewers through the shadow theatre – to make it easier they can adapt a section of a story that you already know. Pick a story with not more than 2 or 3 characters: a wolf, a princess, a rabbit and props including the sun, a house, a cloud etc.
- Illustrate or write out the story.

30 minutes

- Now design the main “characters and props” of shadow theatre as puppets. Draw the main outline on paper or cardboard and colour this inside with black crayon, paint or marker
 - Cut out these characters or props and stick them using tape on toothpicks / chopsticks

DAY 5

Today you will begin to set up and present your shadow puppet theatre!

**Suggested
Duration**

Activity and Description

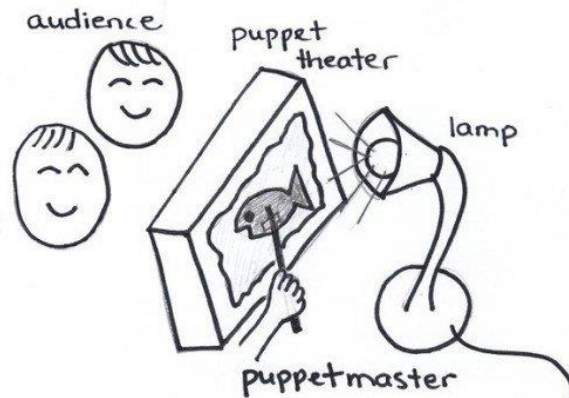
30 minutes

- Learners will design the stage.
 3. Find a place to hang a large white bedsheet or shadow screen – it can be hung on a door frame (it is better if the screen is straight)
 4. There needs to be space behind the screen for the learners to stand and hold the puppets
 5. The bottom half of the screen can have a desk or table so learners can hide behind it when they operate the puppets

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6. Find a good source of light e.g. sunlight or a lamp / torch behind the screen
 7. There needs to be space in front of the screen for audience to sit
- Use a doorframe to make the screen: pin a large sheet of paper on the frame or hang a sheet from the rod.



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|-------------------|--|
| 10 minutes | <ul style="list-style-type: none"> • Play with light and experiment with it until learner discover its effects on the shadows your puppets make. Quickly discover that the shadows grow larger when the puppets are close to the light source, and smaller when they are further away |
| 10 minutes | <ul style="list-style-type: none"> • “Act” out the story using these puppets and props and try and simultaneously narrate or tell the story. Also add music or sound effects for e.g. a plastic bottle with little stones as a shaker for rain etc. |
| 10 minutes | <ul style="list-style-type: none"> • Now enact the play for their family. |
| 10 minutes | <ul style="list-style-type: none"> • Ask family about their opinion about the play: Did they understand the characters based on the shadows? Did the family members like the story? Did the family members enjoy any additional effects of sound or the narration of the story? |

ASSESSMENT CRITERIA

- Clarity of drawings, illustrations and labelling including the understanding demonstrated
- Creativity and simplicity of the story and character puppets
- Narration and retelling of the story
- Ability to distinguish between objects as opaque, translucent or transparent

ADDITIONAL ENRICHMENT ACTIVITIES

Learners can design more complex shadow puppet theatre

MODIFICATIONS TO SIMPLIFY

Learners can work on days 3 – 4 and 5 of the project to explore shadows and create their own shadow theatre