

# MOON LOG: OBSERVATION OVER TIME

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An Art Skills Tutorial

Commissioned by the  
Center for Science Education Research  
at the  
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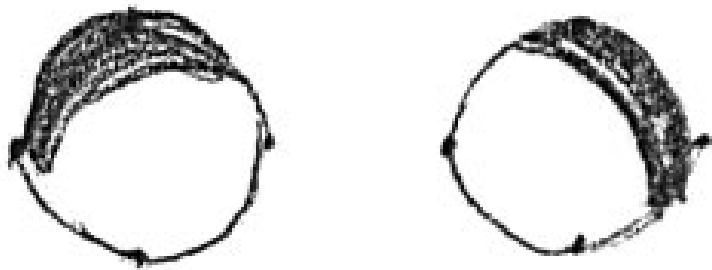
## LOOK AGAIN (AND AGAIN)

*When the moon appears to be a full moon at a cursory glance, check again and ask yourself, "Is it really full?"*

*Does a full moon occur on one or more days?*

*Look closely at the sharpness or clarity of the edges of the moon. What do you notice three days before and three days after the full moon?*

*Will the shadows ever be on the "top side" of the moon?*

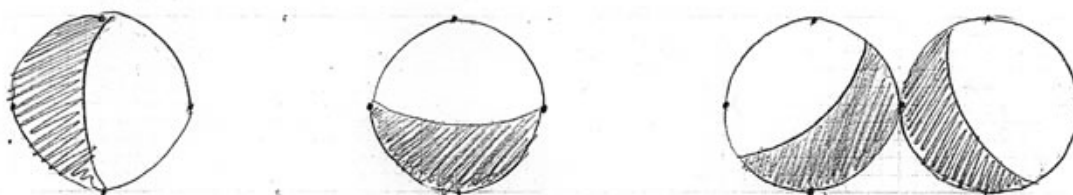


*Why or why not?*

## FRAME OF REFERENCE

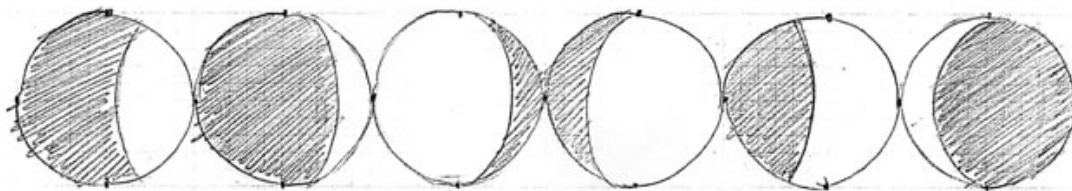
*Before going out to look at the partially lit moon ask yourself some questions.*

*Will the shadow be vertical, horizontal or diagonal?*



*Which way does the curved edge bend between light and shadow?*

*Are any of these plausible?*



*What other possibilities are there?*

### SHADOWS

*On earth, the sun, unless setting or rising, is always above us and our surroundings, making shadows on the underside of objects around us, and casting shadows below.*

*The darkness on the part of the object not in the pathway of the sun's rays is a shadow.*

*The shadow on an object caused by a primary object blocking light, whether the secondary object be ground or a surface upon which the primary object is placed, is called a cast shadow; the shadow is "cast" upon another surface.*

*How does the moon's shadow change over a month's time?*

*Side to side?*

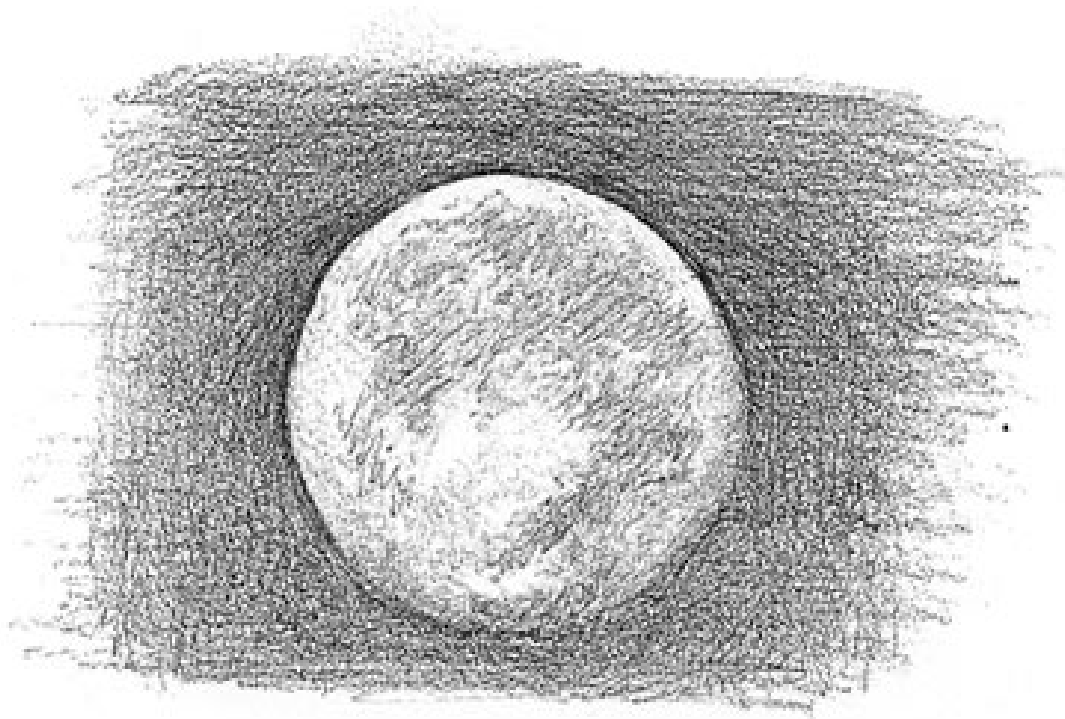
*Diagonally?*

*Top to bottom?*

*Bottom to Top?*

**TIP!**

*One day after a full moon at dawn...*



*Drawing at dawn allows you to see your drawing more easily, while still seeing the moon.*

## SELF-GUIDANCE

*What do you notice about:*

- the surface of the moon?*
- the resolution or clarity of the edges?*
- the contrast between the moon and the surrounding sky?*

*How might you use your pencil and eraser to create different effects?*

*What artistic license was taken here for demonstrative purposes?*

*The bottom edge is softened as it was coming into shadow ever so slightly.*

*You can rub with eraser, or “blot” quickly up and down to pick up graphite without creating a definite shape. Eraser can be used to soften the edge.*

*The sky behind the top edge of moon is darkened to sharpen the edge with greater contrast. The sky surrounding the moon was actually homogeneous.*

## SELF-CRITIQUE

*Before reading the procedures that follow, draw the moon for a few days.*

*Does my moon look like a cookie with a bite out of it?*

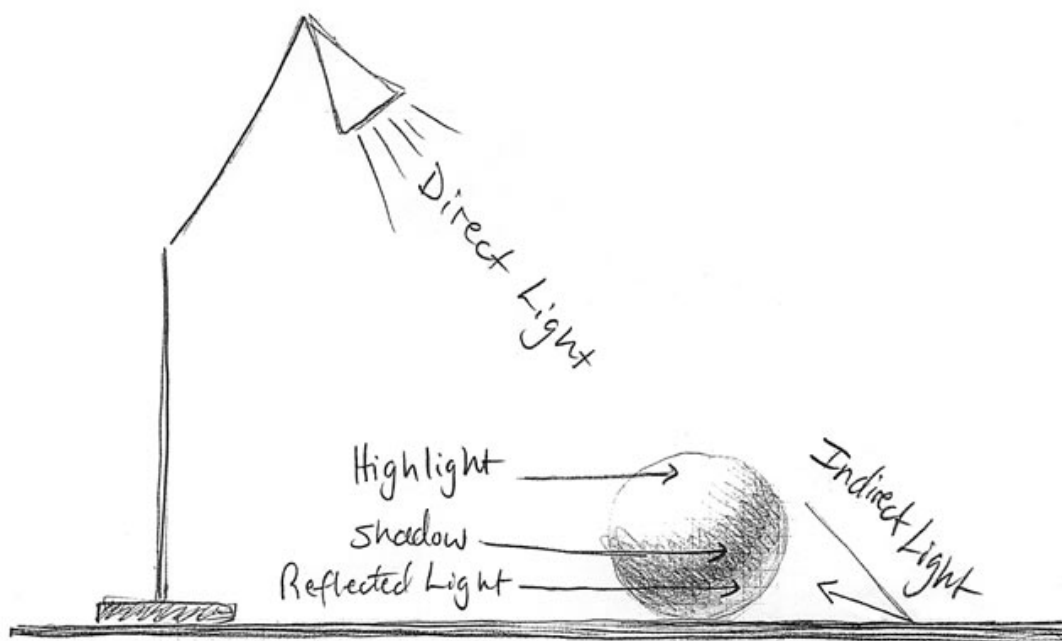
*Does it look plausible?*

*Answer why after the lessons.*

## SET-UP AND OBSERVATION

*Set up the following configuration in order to study shadow and light:*

*A white egg or a styrofoam ball with one strong light source.*



*A directed desk lamp will work nicely.*

## LAMP STUDIES

*Set the lamp at different angles and do many studies. At first, work slowly to find the unexpected.*



*What values are present?*

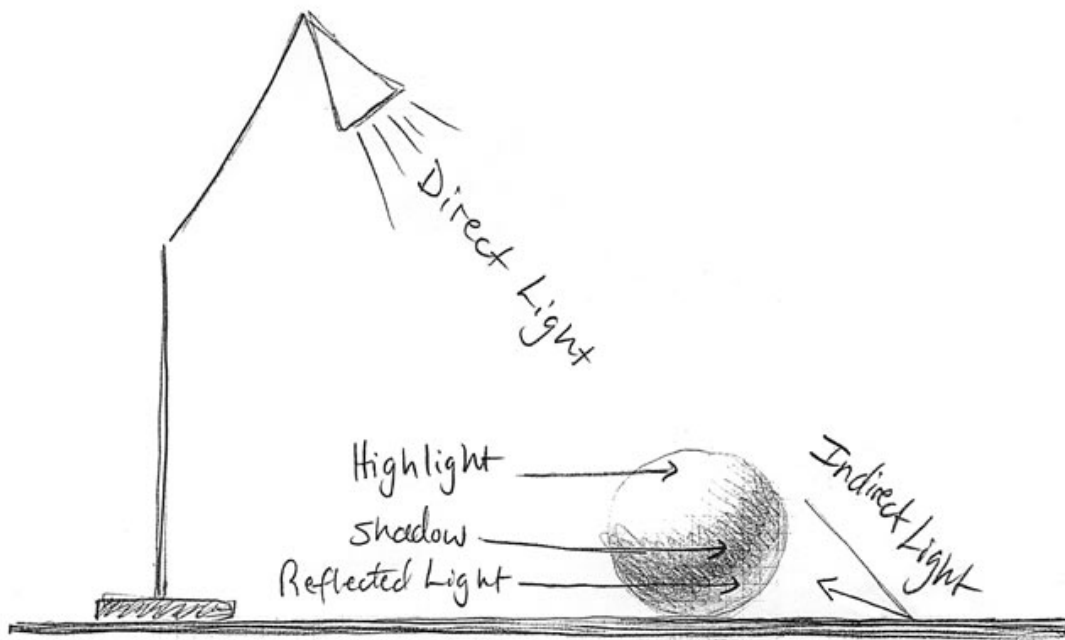
*Where is the egg/ball darkest, where lightest?*

*How many in-between values can you find?*

*Where is the strongest contrast?*

*Where are the subtlest gradations?*

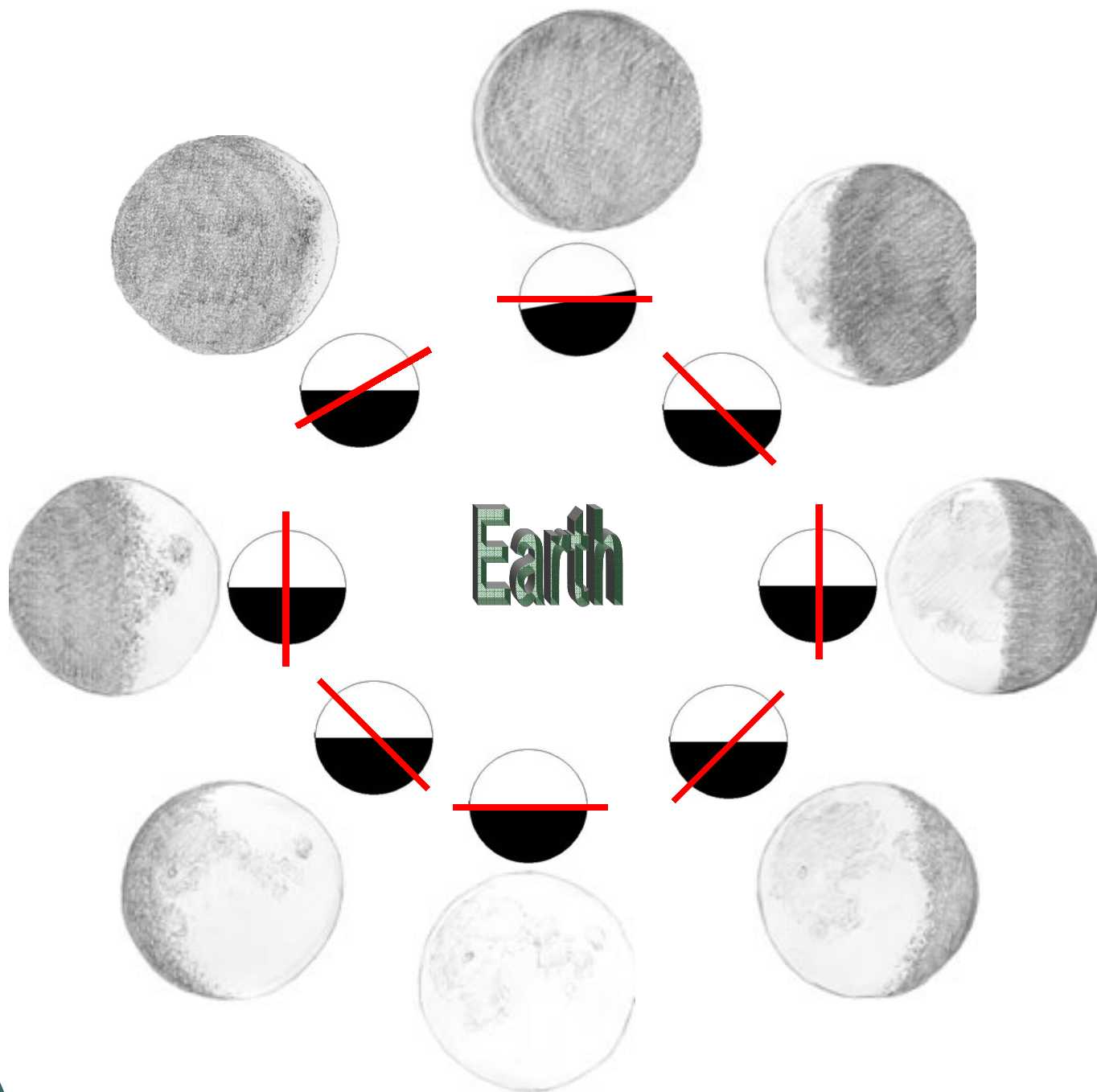
*What is the relationship between the curve of the egg/ball and its shaded areas?*



*Will the moon have reflected light like your egg/ball?*

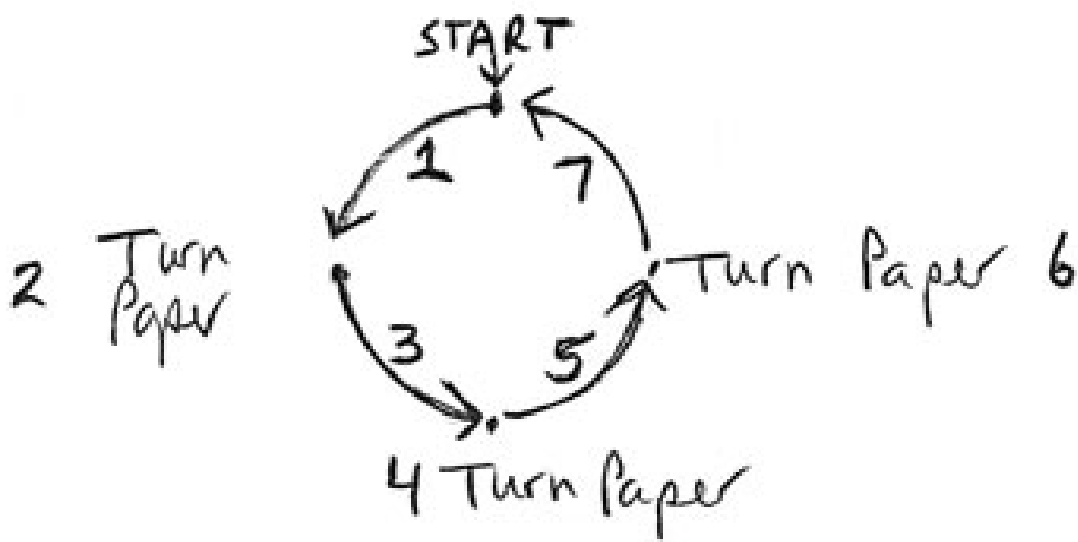
## MOON PHASE MODEL

SUN

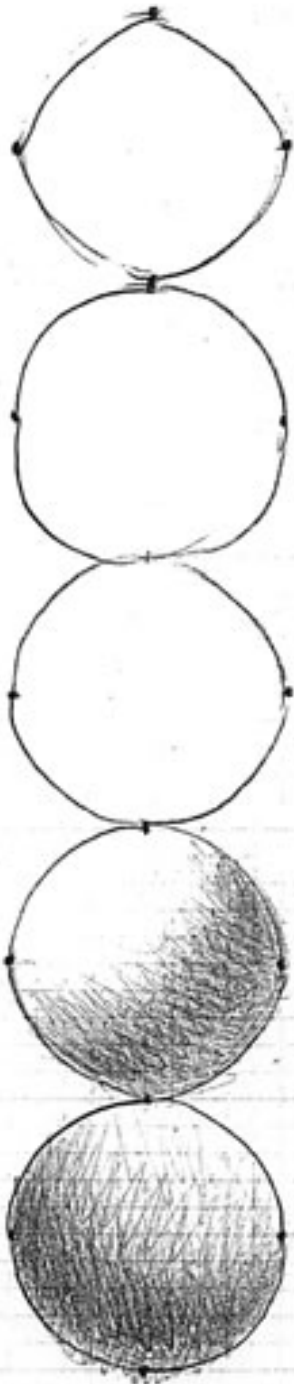


## EXERCISE: TEMPLATE FOR MOON LOG

- *Place a dot at the midpoint of each side of the square on the graph paper.*
- *Draw one quarter of a circle from whichever point is most comfortable for you.*
- *Turn the paper; draw the next quarter.*
- *Repeat until you have the complete circle.*
- *Look.*



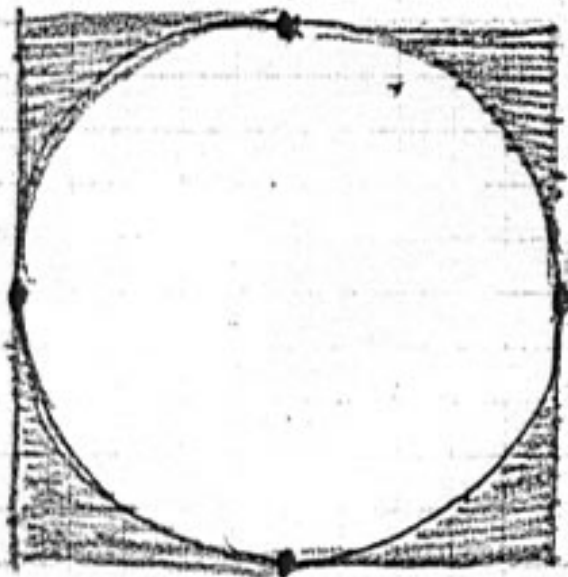
## SELF-CRITIQUE



- *Are your quarter circles nicely rounded curves?*
- *If not, keep trying using the same technique.*
- *Did the curves need to be broader and more rounded, or did they need to be tightened up?*
- *Adjust accordingly.*
- *Some are better than others. Why?*

THINKING OUTSIDE THE CIRCLE!

*Imagine the negative space that will be left outside of your circle as you proceed around the circle.*



*Picture this shape before you draw each quarter curve of your circle.*



## TEMPLATE FOR MOON LOG

*Complete all the circles, sized as desired, using squares of the appropriate size.*

*Space as desired, leaving room to label your data.*

*After the template is set up, make copies so you can reuse it. (You have had enough practice with circles!)*

