

The Moon in Motion

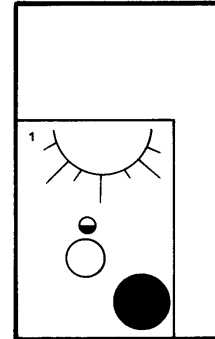
Teacher Information

This activity serves as a culmination of the lessons about the moon phases.

Overview: *Students will make a flipbook of the moon to see how the phases change.*

Materials

- Moon Flipbook Pages (pages 18 and 19)
- 3" x 5" (8 cm x 13 cm) file cards (16 per flipbook)
- glue
- wide clear packing tape
- rubber bands



Lesson Preparation

- Make enough copies of the flipbook pages for each student. Cut these into sets.
- Make up a set of moon phase pictures and file cards for each student. Glue the #1 picture on the file card of each set as a model for the students. This should be placed in the lower left corner as shown.

Activity

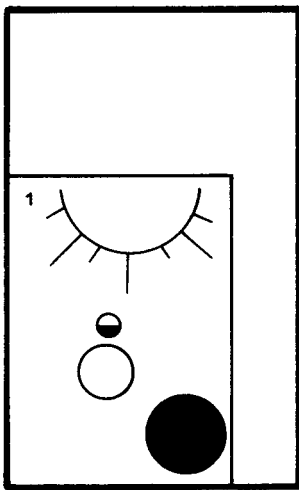
1. Review the moon phases and how they occur. Tell the students that they are going to make a flipbook which will be like a movie of the moon's motion around Earth.
2. Distribute 16 file cards to each student. Show them the model of the first card so they will know where to glue the rest of the pictures on each card.
3. After all pictures have been glued on cards, help students lay these in a pile in numerical order, beginning with card #16.
4. Arrange each set of cards so the lowest edges are slightly offset about $\frac{1}{4}$ inch (6 mm) above the card underneath. (See drawing on page 17.) This will enable the thumb to flip rapidly through the cards when they are stacked.
5. Hold the card stack in place with a rubber band and flip through them to see if the sun can be seen clearly at the top of the cards and the moons appear to move around Earth.
6. Remove the rubber band and place a long strip of clear packing tape along the back of the cards and overlap the front card for about 1 inch (2.5 cm). This will anchor the cards in place. Run a second strip vertically around the top of the cards. Be sure to avoid locking the cards in place so they will not flip easily. If this happens, use scissors to slide through the tape at the sides until the cards move freely.

The Moon in Motion *(cont.)*

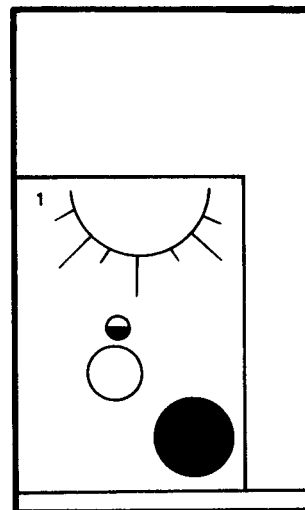
Closure

- Demonstrate to the students how to hold their books at the top in one hand and use their thumbs to flip the pages rapidly, creating the motion-picture effect. Have them do this several times and then discuss the position of sun, moon, and Earth with them as they flip the pages. They should see the moon moving around Earth. Now, have them look only at the moon phases in the lower corner of the cards as they flip the pages. The phases should rapidly change from new through all the phases and return to the new position.
- Relate this motion of the cards to what they have seen in the sky as well as when they used their moon balls in the bright light.

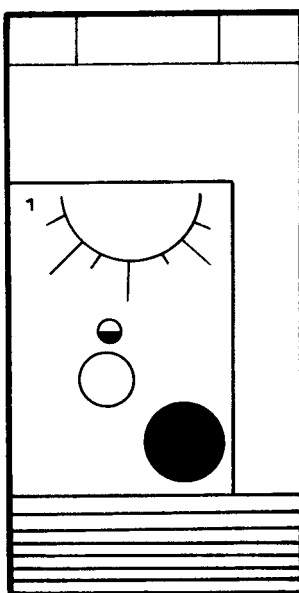
1. Single Card



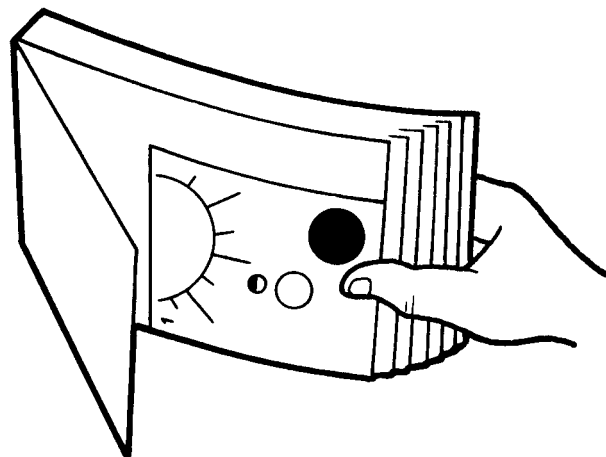
2. Two Cards



3. Stacked Cards

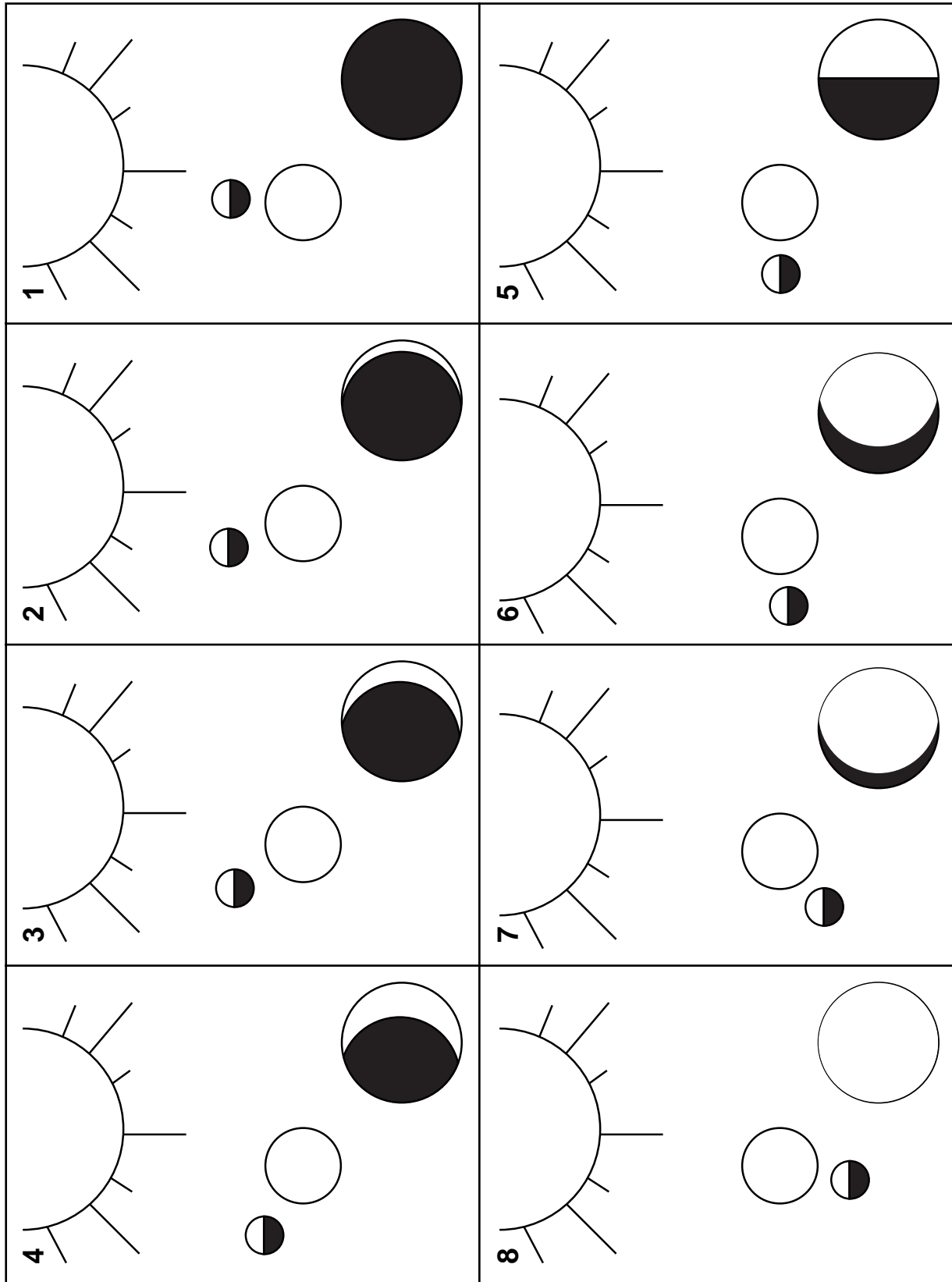


4. Flip book



The Moon in Motion *(cont.)*

Moon Flipbook Pages



The Moon in Motion *(cont.)*

Moon Flipbook Pages (cont.)

