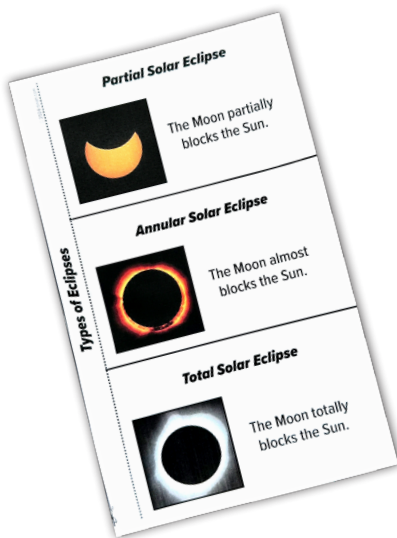


See DINAH.COM's Video for instructions and ideas on how to assemble and use these Foldables.

### Mini-Movie FlipBook: *Total Solar Eclipse*

1. Cut apart the 7 sections and cut off the gray section on each.
2. Stack the number on the anchor tabs in order with 7 on the bottom and 1 on the top.
3. Line up the left anchor tabs and staple together.
4. Make one FlipBook and demonstrate how to use it with the class. Place the FlipBook in the in your class station. Make multiple station FlipBooks if needed.
5. Students visiting the station hold the left, stapled edge of the booklet while rapidly flipping the right edge of the booklet to view a mini-movie.
6. In their notebooks, students record what they observed. Were they able to see the Sun being covered as they flipped the book? How does this *movie* relate to a total solar eclipse?

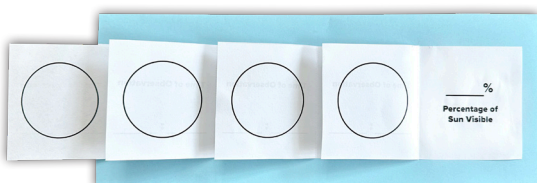
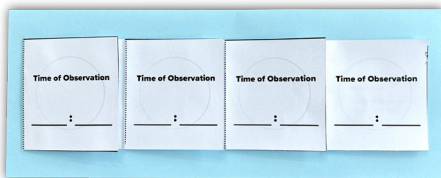
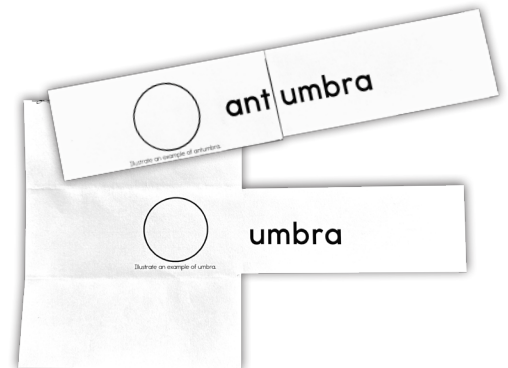


### 3-Tab Foldable: *Types of Eclipses*

1. Print a 3-Tab *Types of Eclipses* Foldable for each student and discuss. Students fold and adhere the anchor tab to a page in their notebooks.
2. AFTER the glue dries, students cut to form three tabs.
3. Under the tabs, students explain each type of eclipse.

### Visual-Kinesthetic-Vocabulary Card

1. Make one VKV card per student. Students create words by manipulating the VKV.
2. Words formed are *umbra*, *penumbra*, and *antumbra*.
3. After viewing the words formed, students observe the definitions of each on the back of the card and discuss. Students can take notes on the lines provided. VKV cards can be stored in a pocket in student notebooks.

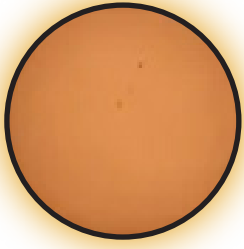


### Observation Billboard Assembly Instructions

See foldable page for instructions.

# Total Solar Eclipse

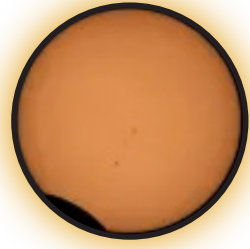
1



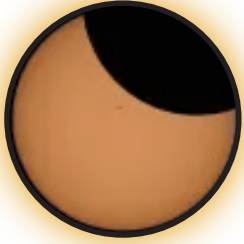
Remove gray section.

Remove gray section.

2



3



Remove gray section.

Remove gray section.

4



5



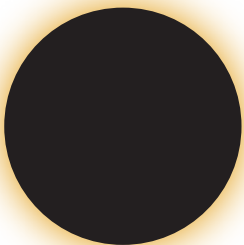
Remove gray section.

Remove gray section.

6



7



© 2024 dinah.com

© 2024 dinah.com

© 2024 dinah.com

© 2024 dinah.com

© 2024 dinah.com

© 2024 dinah.com

© 2024 dinah.com

## Types of Eclipses

© 2024 dinah.com



**Total Solar Eclipse**

The Moon totally  
blocks the Sun.



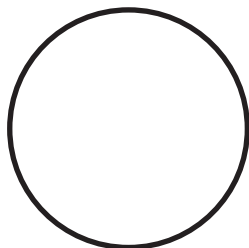
**Annular Solar Eclipse**

The Moon almost  
blocks the Sun.



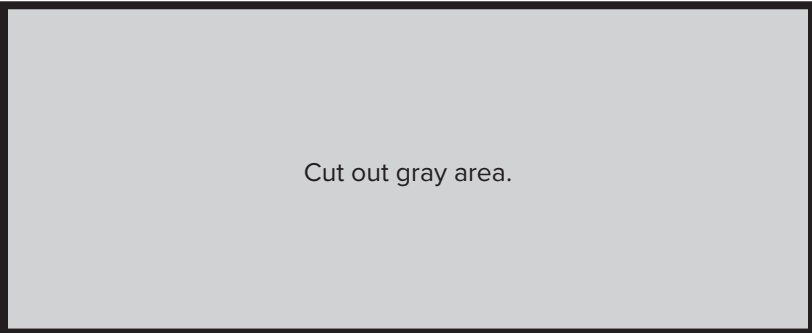
**Partial Solar Eclipse**

The Moon partially  
blocks the Sun.



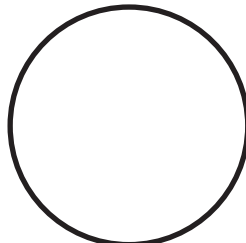
Illustrate an example of umbra.

# umbra



Cut out gray area.

pen



Illustrate an example of penumbra.

umbra - Total Eclipse

---

---

penumbra - Partial Eclipse

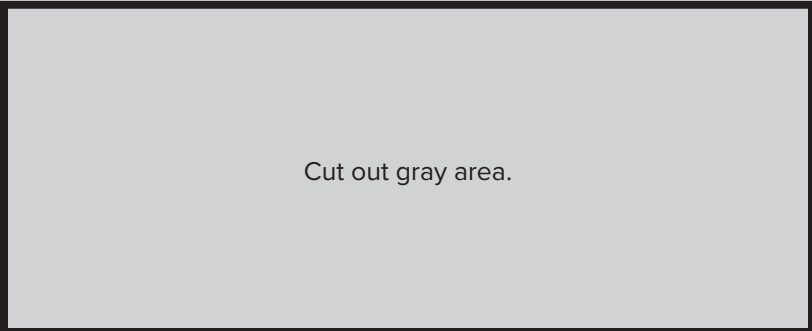
---

---

antumbra - Ring of Fire

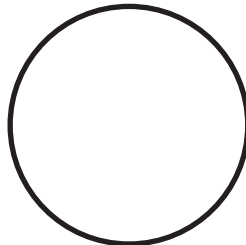
---

© 2024 dinah.com



Cut out gray area.

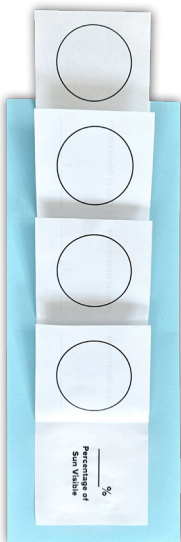
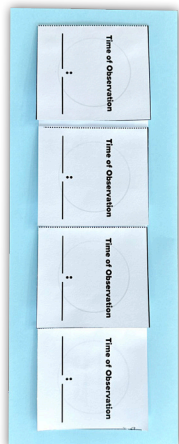
ant



Illustrate an example of antumbra.

### Observation Billboard Assembly Instructions

1. Cut out the four rectangular sections.
  2. Fold them in half along the dotted lines. Time of Observation should be visible on the front of each.
  3. Fold a sheet of 8 1/2" x 11" paper in half like a hotdog. This will be the base of the Observation Billboard.
  4. Glue the four sections edge-to-edge in a row on the front of the hotdog, as pictured.
  5. Record observations four times while viewing the eclipse. Students record a time, open the tab, and quickly sketch in the circle to show how much of the Sun is covered by the Moon. These actions should take seconds.
- NOTE: Students can color and label the Sun diagram after the eclipse. The purpose is to record the position of the Moon, and the percentage of the Sun exposed at the time recorded without missing the experience. Scientists must do this during fieldwork.
6. When the tabs are closed, a time sequence is visible. When the tabs are open, the progression of the eclipse is visible.
  7. Inside the hotdog, students write about their viewing experience and/or draw a picture of what their surroundings looked like at the peak of the eclipse.
- Did you know:* Dinah Zike originally designed this activity after viewing an old-style motorized billboard with rotating panels that presented two different ads.



**Time of Observation**



**Time of Observation**

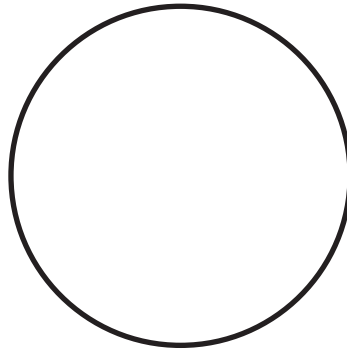


**Time of Observation**



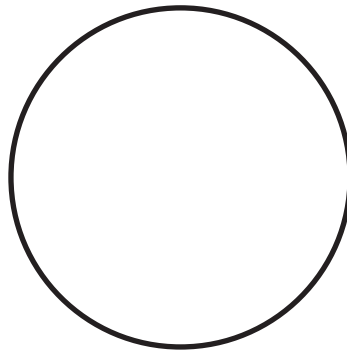
**Time of Observation**





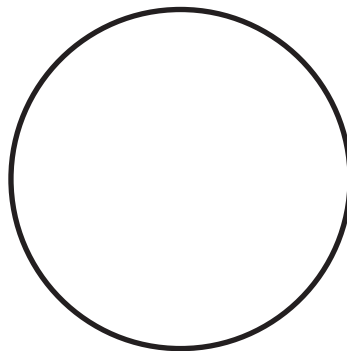
\_\_\_\_\_ %

**Percentage of  
Sun Visible**



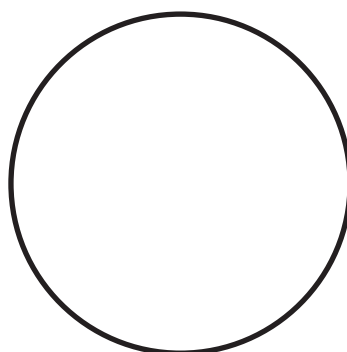
\_\_\_\_\_ %

**Percentage of  
Sun Visible**



\_\_\_\_\_ %

**Percentage of  
Sun Visible**



\_\_\_\_\_ %

**Percentage of  
Sun Visible**