



## Printing Instructions

### 3-Hole PUNCH Pinhole Projector



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**DO NOT use this card to look directly at the Sun!**

1. Facing away from the Sun, hold this card so that the Sun's rays pass directly through the holes onto a smooth surface like a wall or sidewalk (depending on the Sun's height). Move the card closer until you see a triangular, a round, and a square shape of light on the surface.

2. Observe the shapes of light as you slowly move the card farther from the surface. When all three shapes change to round, each hole is forming an *image* of the round Sun! Making images using only a small hole is called "pinhole projection."

3. Repeat step 1 and 2 during a solar eclipse to see inverted images of the Moon partly blocking the Sun!

4. Small gaps between plant leaves can also form "pinhole images" of the Sun. Look for round shapes of light among the shadows!

Visit the link on the other side to learn more!

Thanks for your interest in our 3-Hole PUNCH Pinhole Projector! We are glad to have education and outreach colleagues everywhere making prints of their own using our field-tested design. We invite you to let us know how you're using these projectors or ask us any questions by emailing [punchoutreach@gmail.com](mailto:punchoutreach@gmail.com).



### To order prints with UPrinting.com (recommended)

- Contact UPrinting by sending an email to [customercare@uprinting.com](mailto:customercare@uprinting.com) and cc [briana.ingermann@colorado.edu](mailto:briana.ingermann@colorado.edu). Let them know the following information:

*I'd like to re-order Job #12219943 using the following specifications and the same artwork. Please change the reorder job's contact information to my contact information below.*

*Item #19188660 (ENGLISH)*

*Category: Custom Product Builder*

*Size: 4.42" x 6"*

*Paper: 16 pt. Cardstock Matte*

*Printed Side: Front and Back*

*Quantity: [Insert quantity of projectors to print here; delete this item if quantity is zero]*

*Die-Cutting: Cut Out Shapes of Triangle, Square, and Circle within the Oval*

*Item #19188662 (SPANISH)*

*Category: Custom Product Builder*

*Size: 4.42" x 6"*

*Paper: 16 pt. Cardstock Matte*

*Printed Side: Front and Back*

*Quantity: [Insert quantity of projectors to print here; delete this item if quantity is zero]*

*Die-Cutting: Cut Out Shapes of Triangle, Square, and Circle within the Oval*

- Include your contact info and shipping address in the email. When asked to settle the order, you can process the payment through UPrinting's Automated Payment System or by calling 844-743-6112 with your credit card and the order number provided to you by UPrinting.
- Approximate costs:
  - 250 @ \$1.19 each = \$298
  - 500 @ \$0.61 each = \$305
  - 1000 @ \$0.32 each = \$320
  - 2000 @ \$0.22 each = \$440
  - 2500 @ \$0.21 each = \$525
  - 3000 @ \$0.18 each = \$540
  - 4000 @ \$0.16 each = \$640
  - 5000 @ \$0.15 each = \$750
  - 7000 @ \$0.13 each = \$910
  - 10000 @ \$0.12 each = \$1200
  - 25000 @ \$0.09 each = \$2250



- 50000 @ \$0.09 each = \$4500
- 100000 @ \$0.08 each = \$8000
  
- If you are paying with tax-exempt status, follow the instructions below BEFORE you print - they will not reimburse you for tax if the order has already been carried out.
  - Submit your tax exempt documents through email to [trade@uprinting.com](mailto:trade@uprinting.com) with the following:
    - Subject: UPrinting Tax Exemption Application
    - Attachment: Tax exemption certificate/document
    - Message Details: account e-mail address
  - Once submitted, the process normally takes 1-2 business days, and a specialist will reach out to you via email with the application results once processed. If you are going to place an order on the same day, please mention its job order number so a UPrinting specialist will know the next steps.

### To order prints with another printing company

- Printing company needs to be able to do *die cut* prints and be able to punch out the ~5mm diameter holes in the center of the oval design.
- Contact us at [punchoutreach@gmail.com](mailto:punchoutreach@gmail.com) for the Adobe Illustrator print file.
- We recommend the following print settings:
  - Shape: Custom
  - Print size: 4.42" (width) x 6" (height)
  - Printed side: Front and back
  - Paper type: 16 pt cardstock matte

### To print a DIY version with your own printer

- Print this [DIY PDF](#) on white heavyweight paper (e.g. 65lb), with the flip along the short edge of the page
- Cut out each of the large oval projectors
- Punch out each of the three holes with differently-shaped hole punches (see suggested purchase links below)
  - [Round hole punch](#)
  - [Square hole punch](#)
  - [Triangle hole punch](#)