



## **SOAR TOGETHER @ Air and Space**

### **Activity: Shadow Sculpture**



*Designed for families with kids ages 4 and up*

**Throughout time, people have built structures that are aligned with the Sun or created interesting shadows on the solstice.**

**Now you can make your own!**

#### **What you'll need:**

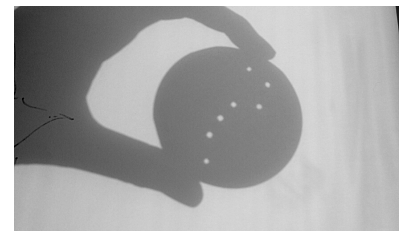
- Anything you have: paper, cardboard boxes, recycled containers, straws or sticks, etc.
- Tape, glue, clips, or a stapler to hold it all together
- Flashlight or a sunny spot

#### **FIRST, gather and test your materials:**

- Start with a sturdy base for your sculpture, like a sheet of cardboard or a box. This will give you a place to attach the parts.
- Experiment with your materials by holding them in the sunlight or shining a light on them.
- See what makes shadows that you think are interesting.
  - Tip: Try cutting holes out of something solid, or building an object that has its own unique shape.

#### **THEN, build your sculpture:**

- Arrange your shapes on the sculpture base in a way that you like.
- Notice what makes interesting patterns or shadows, and how those shadows change if you tilt the objects.
- Using tape, glue, or other supplies, attach your sculpture pieces firmly to the base.

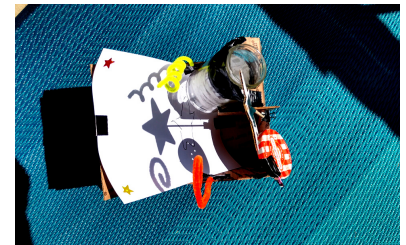
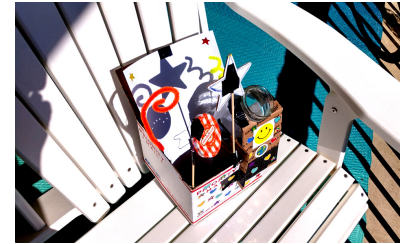




**FINALLY, bring your creation into the sunlight:**

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- Place your sculpture in a sunny spot.
- Notice the shadows it makes, and watch how they change as the Sun moves across the sky or when you rotate your sculpture.
  - Tip: You can try different things and change your sculpture based on the shadows you see!
- At midday on the solstice, June 20, the Sun reaches a special point in the sky: the highest it will get in the Northern Hemisphere, and the lowest it will get in the Southern Hemisphere.
- If you like, add or adjust something on your sculpture to align with the Sun when it is at this once-per-year place in the sky!



**Share with us!**

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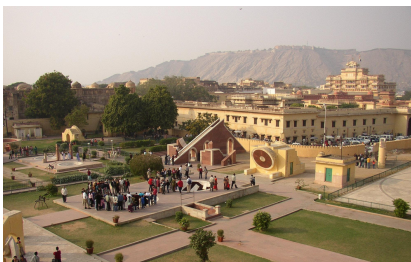
Share a picture of your Pocket Solar Clock on social media (tag @airandspacemuseum on Instagram) or in our [Goose Chase game](#) for the solstice!

**Air and Space Connections:**

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- Structures that align with the Sun and other sky objects are known as *archeoastronomy*.
- Some examples of archeoastronomy include:

[Stonehenge](#), which is located in the United Kingdom. Its arrangement of large stones aligns with the sunrise on the June solstice and the sunset on the December solstice. Check out this [Stonehenge photo](#) by Gareth Wiscombe.



The [Jantar Mantar](#) at Jaipur, India, completed in 1734, which has the world's largest stone sundial. It is an [observatory](#) with 19 structures aligned to view different objects in the sky.

In order to build these structures so they aligned with the Sun's movements, humans have built many tools that help us to measure the angles and movements of objects in our sky, such as quadrants and astrolabes. Check out examples of these historic tools from the Smithsonian collections [here](#) and [here](#).