

## Astronomy and Star-Gazing activities

This is a compilation of astronomy related activities. Each activity has a small description and a link (or two) that gives a more detailed explanation if you are interested. There are indoor and outdoor activities so the weather is not an obstacle.

### Constellations (outdoors)

Constellations are clusters of stars that appear in basically the same formation (although they will change over a long period of time). The link below has some more information on constellations, what the different ones look like and a printable log book for you to record the constellations you are able to see in the night sky. Try looking for at least 3 different constellations.

<https://www.woojr.com/constellation-worksheets-lesson-for-kids/>

### Stargazing crafts (indoors/outdoors)

The BBC offers a bunch of different activities including building a rocket, a mini planetarium, a constellation torch and more. I like the Orrery as a way for you to track the relative position of the Sun, Earth and Moon in 2021.

<https://www.skyatnightmagazine.com/astrophotography/astrophotography-tips/smartphone-astrophotography-use-your-phone-to-capture-the-night-sky/>

This site has information about how to make a model solar system. You can use any spherical objects you want but try to think about making the colours and different sizes accurate.

<https://www.thoughtco.com/make-a-solar-system-model-1857465>

### Pictures of the night sky (outdoors)

Taking pictures of the night sky is more challenging than it may first appear due to the low brightness.

For digital cameras:

1. Use a tripod if you have one to avoid camera shake.
2. Zoom out as much as possible.
3. Increase the sensitivity (ISO) of your camera to make it easier to capture faint objects. However, your image may be distorted if the sensitivity is too high.
4. Turn off autofocus and set the focus to infinity.
5. Point your camera at a bright star and adjust the focus until the image is sharp.

6. Adjust your camera's aperture to the smallest f-number (this lets in more light).

For smartphone cameras:

This article discusses some of the challenges and solutions with using a smartphone camera. Make sure you download any of the recommended camera apps before trying to capture your photos.

<https://www.skyatnightmagazine.com/astrophotography/astrophotography-tips/smartphone-astrophotography-use-your-phone-to-capture-the-night-sky/>

### **Junocam (photo editing - indoors)**

Junocam takes pictures of Jupiter and shares the images captured on this website.

<https://www.missionjuno.swri.edu/junocam>

They invite people to look at the images sent and for amateur astronomers (you!) to process the image to make it more interesting and useful to scientists. They share their favourite processed images so your work could be featured on their website.

This article provides more information on the editing of the raw images.

<https://www.skyatnightmagazine.com/astrophotography/astrophotography-tips/how-process-images-raw-space-mission-data/>

### **Earn your astronomy badge**

Some of the tasks above help you towards getting your astronomy badge. There are also some things you need to learn about to gain your badge. Linked below are the requirements for each badge and there are resources at the end of this to help you learn more about space.

Beavers

<https://www.scouts.org.uk/beavers/activity-badges/space>

Cubs

<https://www.scouts.org.uk/cubs/activity-badges/astronomer/>

Scouts

<https://www.scouts.org.uk/scouts/activity-badges/astronomer/>

## Other resources

These are some links to videos or sites with more information about space if you want to learn more.

Information on the planet in our solar system:

<https://www.solarsystemmodel.org.uk/posters.html>

Videos on stars for kids:

<https://www.youtube.com/playlist?list=PLhz12vamHOna6ySCBRBGgCLLoTbMgqMzd>

Other videos on space for kids:

<https://www.youtube.com/playlist?list=PLhz12vamHOnagselgy26MoPI79NXiFBwN>

Videos on space for older ones:

<https://www.youtube.com/playlist?list=PL8dPuuaLjXtPAJr1ysd5yGlyiSFuh0mIL>