

Living on the Moon

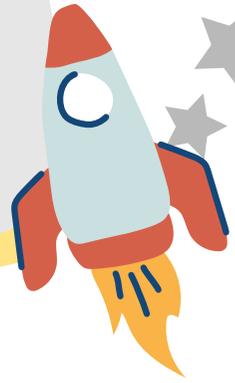


Build your own UV detector and lunar habitat!

1 If we want to live on the Moon, we need to protect our astronauts from **ultraviolet (UV) radiation**. This affects us here on Earth - sunscreen protects us from getting burnt! But there is a lot more UV radiation, and other types of radiation, on the Moon.. In space, astronauts wear detectors called **dosimeters**. These measure how much radiation there is.

2 We're going to make our own UV detectors out of UV beads and pipe cleaners. UV beads react to UV radiation and change colour. Twist the pipe cleaners together into any shape you like and thread on the UV beads.

3 Draw your UV detector in the space below. Remember to label your diagram! Have you thought of a name for your UV detector?
My UV detector is called...



4 Now we need to test our detectors. Predict what will happen in each light level. Then, do the experiment and record your results.

| Light level | Prediction: what do you think will happen? | Results: what actually happened? |
|-------------|--|----------------------------------|
| Dark | | |
| Shade | | |
| Bright | | |

Draw your UV detector here.

6 In your packs, you will find lots of different materials to make a **lunar habitat** (aka a house on the moon). You can use the straws and connectors to make a frame, and then cover the frame with cellophane, card, foil and other things you may have. Use sticky tape to stick it all together.

7 **Create your first lunar habitat.**
What materials have you used? Write a description, and say why you chose those materials.

What happens if you put your UV detector inside the lunar habitat in bright light?

8 **Create your second lunar habitat.**

What materials have you used? Write a description, and say why you chose those materials.

What happens if you put your UV detector inside the lunar habitat in bright light?

9 **What are your conclusions?**
Which material worked better to protect your UV detector?

On the Moon, there are other types of radiation as well as UV radiation, including particles called **neutrons**. At the ISIS Neutron and Muon Source, we are testing different types of materials that could be used to build a lunar habitat to make sure they will protect the astronauts we send up there!

To find out more, visit
www.isis.stfc.ac.uk/Pages/Resources-for-Schools

