

**Blueprint**  
 The power of UV is also used for making a blueprint. This was used for a long time to make photocopies, before we had photocopiers.

**The power of UV**  
 UV rays contain energy. Which they will lose when they collide with something. You can compare it to someone pushing you. In the movement, energy will be lost, resulting in the person that pushed you having less energy to perform this act again. The power of UV can be used in several ways: some compounds can absorb the UV energy and transform it into visible light. You know it; it's fluorescence!

**Introduction**  
 Ultraviolet waves (UV), also called radiation, are invisible, but are always around us. How can you make them visible? Follow the instructions on the other side and make your own UV meter.

**Careful!**  
 The iron solutions on the UV paper can be irritating, always wear gloves when you get in contact with the liquid or paper. And always wash your hands afterwards.

A blueprint is made by dissolving two powders in water in a certain ratio: potassium ferric citrate. This liquid is dark green, but will become clear yellow/green when spread on textile or paper. When exposed to UV, the energy of the UV rays will turn the pigment blue! This is exactly what happens when you follow the instructions on the other side. By applying sunscreen to the paper you can discover to what extend the sunscreen will block UV light.

# DO-IT-TOGETHER SCIENCE BUS



collecting folk remedies  
 do it together & find out how things work

## Test your sunscreen

### This is what you need to test sunscreen:

- 2 pieces of UV-sensitive paper (Make them yourself with instructions on the website!)
- DIY sunscreen (instructions are also on the website)
- Regular sunscreen
- A device to keep track of time (stopwatch, watch, cell phone)
- A dark space or light-proof box

check out

[togethersciencebus.eu](http://togethersciencebus.eu)



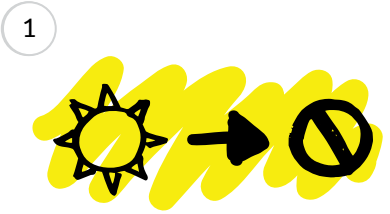
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# Test your sunscreen

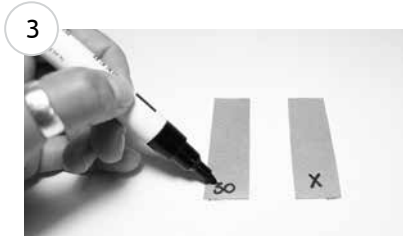
With these instructions you make an testing device that makes UV from the sun visible. Discover if your sunscreen blocks UV and get started:



1 Carry out these instructions at a dark place, preferably inside. You can also make use of a light-proof box. We used a baking mold to create a dark place.



2 Always keep the UV sensitive paper in a dark place. **ATTENTION:** this paper contains a chemical substance, only touch it with gloves. Want to make this paper yourself? You can find the instructions at [togethersciencebus.eu](http://togethersciencebus.eu).



3 Put on a pair of gloves. Mark the strokes of paper, to know which one will contain what.



4 With the gloves on spread the sunscreen on the pieces, one by one. If you use a box, keep the strokes of paper in there in between, so that they will not catch any light yet.



5 Did you apply sunscreen to all your strokes of paper? Then remove the box & expose them to sunlight. With bright sunlight, expose them for 5 min. In the evening, or on a grey day 10 - 20 min.



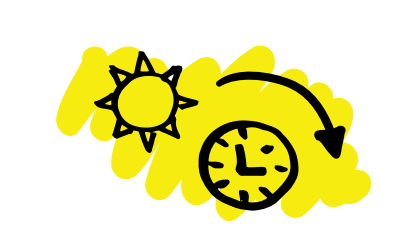
6 Wash the sunscreen from the strokes of paper and let them dry.



7 Compare the results of the different strokes. The more the paper turned blue, the more UV it was exposed to.



8 Wash you hands afterwards, to make sure that any left-overs of the UV-sensitive chemicals are removed from your hands.



**Tip:** you can also compare the power of the sun:  
- at different times of the day  
- between days  
- difference of shade/sun  
Expose strokes for 5 min. each and watch the difference in the intensity of blue.