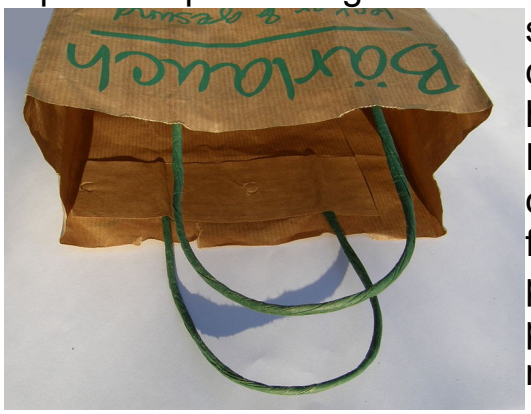
# Alternatives to plastic

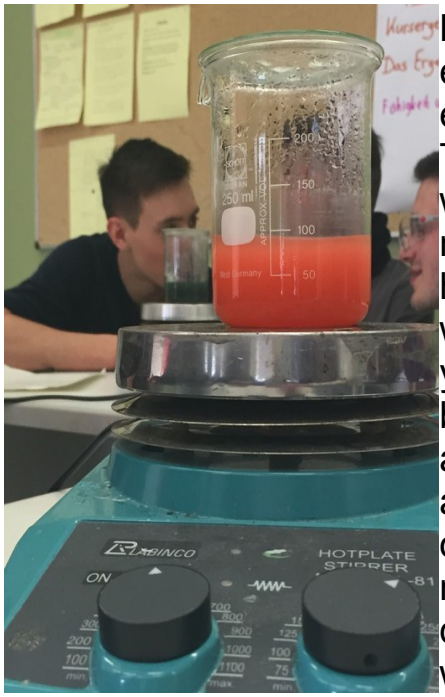
Plastic has the image of being a substance, which pollutes the environment and the ocean and can destroy the food chain. Sadly this image is true. But plastic has got too important in our lives so we have got to find alternatives for plastic because ordinary plastic takes about 500 years until it dissolves in the ocean.

## *Alternatives for plasticbags:*

**Paperbags**: Paperbags have the advantage that they need less than 0.001 times less to dissolve than ordinary plastics would need. And it is produced from renewable resourses. However, paperbags can get wet and paperbags only shift the problem on to other aspects. We need wood to produce them and we need 17 times more clean water to produce paperbags than we need to produce plastic bags. So instead of a polluted ocean we would have a stronger deforestation and a bigger lack of drinkable water, which is more a problem for humans than for ecosystems in oceans. However, it is better to distribute the amount of different bags in other material, because forests can take the small amount of produced paperbags and if we produced less plasticbags it wouldn't be a problem to recycle them.




**Cottonbags**: Cottonbags are a good alternative to plastic bags. They are usable multiple times, very robust and you can colour them nicely. And the biggest advantage of a cottonbag is that it has no environmental disadvantages, exept for the high amount of drinkable water, which is needed to produce it. With a cottonbag you do not pollute anything and don't waste any resources. However, the bags may have bad production circumstances, but that's not always given.




**Bioplastic(-bags)**: Bioplastic also has advantages e.g. that it is produced out of products which are ecological and often  are cultivated agriculturally. This sort of plastic is often made out of starch which sounds very good at first sight because it's not a chemical substance which is often not healthy. But actually if you think twice about it, you will remember that you consume resources which you can use to create something to eat. So bioplastic isn't the only alternative to plastic. You also have to use the others. But another advantage is that it decays pretty fast in contrast to ordinary (micro-) plastic: Bioplastic just needs 6 months! But the reality is that bioplastic usually doesn't decay at the compost but it is burned which also needs energy.

*Experiment to create a plastic film out of starch:*

Materials: beaker, watch glas, heater, starch (out of corn or potatoes), solution of glycerine, food colouring, transparency

Performing:
> fill the beaker with 75ml water, 4g starch, 10ml solution of glycerine (if you want: max. 5 drops of food colouring)
> cover the mixture with a watch-glas
> heat and stir the mixture for 15 min. (250°C)
> heat up the mixture
> distribute the gel on a transparency
> let the gel dry on the transparency and after that the plastic film can be peeled off

*Robert, Tim, Plamen, Jacob*