

# THE SORCERER'S APPRENTICE

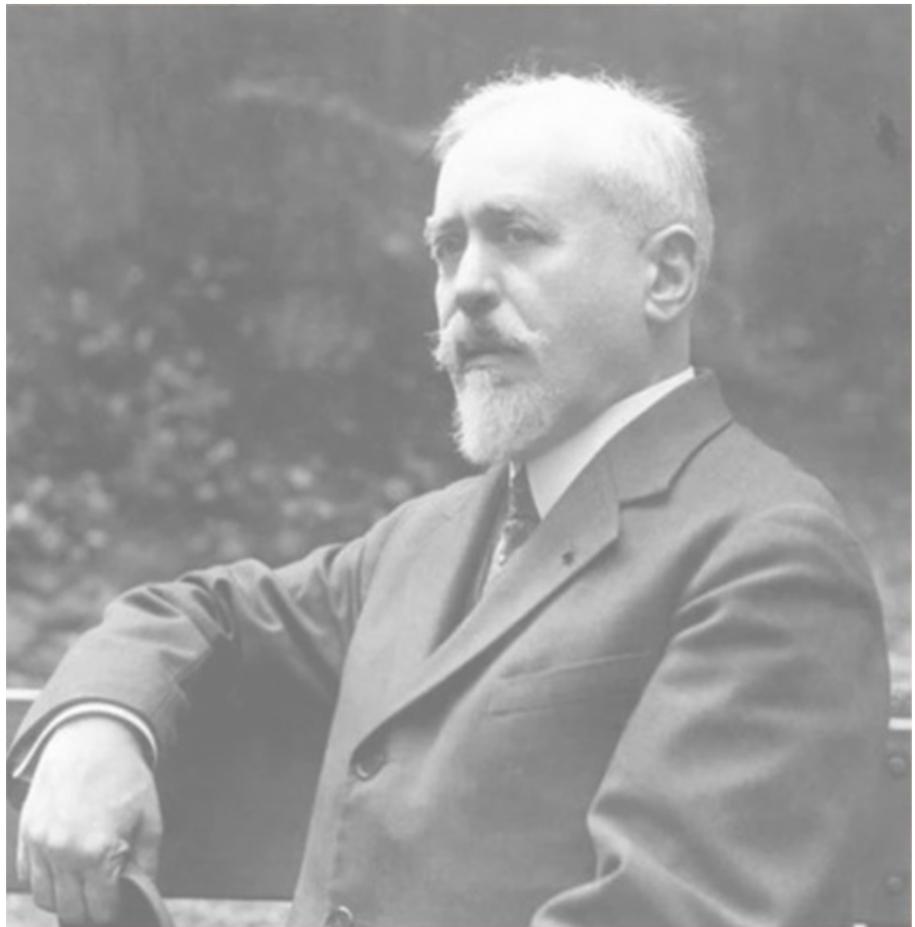
by Paul Dukas

## Worksheet Pack

Dukas was professor of composition at the Paris Conservatoire

Dukas wrote The Sorcerer's Apprentice in rondo form, where the original theme of the music returns several times, to depict the possessed broom coming back time and again

The Sorcerer's Apprentice is written for flutes, piccolo, oboes, clarinets, bassoons, contrabassoon, horns, trumpets, cornets, trombones, timpani, glockenspiel, bass drum, cymbals, triangle, harp and strings.



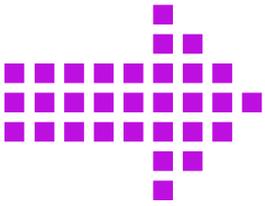
The worksheets in this pack are split into three levels – green, orange and red.

Children can choose to do one, two or three levels.



# Worksheet 5

## Green Level



Magic water spell!

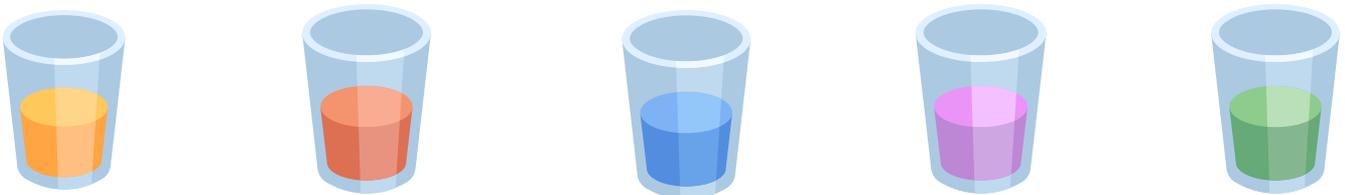
Check out our 'How To'  
Video on Youtube:  
<https://youtu.be/Qz4khkUnk>  
JA

You will need:

- 7 plastic cups of equal size
- Water
- Red, green, yellow and blue food dye
- Kitchen towel



1. Place the cups in a line
2. Fill the 1st, 3rd, 5th and 7th cups with water until they are about three quarters full.
3. Add a few drops of the food dye to the water, using a different colour for each cup, and give them all a stir.
4. Tear off 6 pieces of kitchen roll and fold them lengthways three times.
5. Place the folded paper towels in the cups so that they form bridges from one cup to the next.
6. Watch the water magically move over the paper bridges!

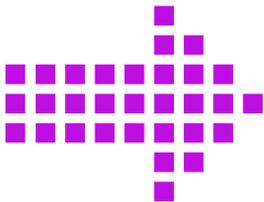


Why not use your coloured pieces of kitchen towel to make a rainbow picture and display it in a window?



# Worksheet 5

## Orange Level



If you have access to the internet, have a go at this online measuring game:

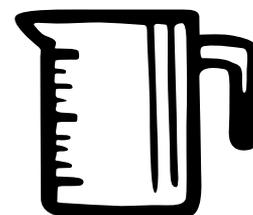
<http://www.ictgames.com/mobilePage/capacity/index.html>

Can you power the rocket?

Now that you've made your rainbows, use the coloured water in the cups and a jug to measure out the following amounts:

One litre

50 ml



125 ml

Half a litre

100 ml

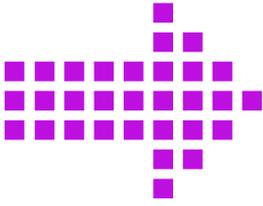
10 ml

Quarter of a litre



# Worksheet 5

## Red Level



So how did the water manage to walk up the paper?

The water is able to move because of something called capillary action. Capillary action allows liquid to flow upward, against gravity, in narrow spaces. The paper towel in the experiment is made up of fibres with narrow gaps between them which suck up the water using two forces; adhesion and cohesion

Adhesion acts like a glue between the water and the paper towel, allowing the paper to soak up the water.

Cohesion happens because the molecules (the building blocks) of the water are attracted to one another, like magnets. So, as the first bit of water is sucked up the paper towel through adhesion, the rest of the water is pulled up as well, through cohesion. Cohesion allows dew to form and is the reason why some insects can walk on water.

These two forces combine to suck the water up through the gaps in the fibres of the paper towel.

Plants use capillary action to drink. When you pour water into the soil around the plant, the water moves up the roots and stem of the plant using capillary action, eventually arriving at the leaves and flower petals.



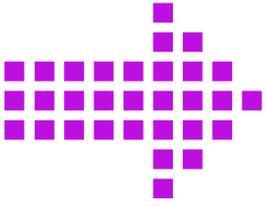
Try the experiment again, this time using different lengths of kitchen roll and different volumes of water. Record the results of the experiment; which water volumes and lengths of paper produce the best results?

Paper length	Water volume	Findings



# Worksheet 5

## Bonus Activity!



Watch Florence Boyd's video on paintbrush making.  
Can you make a magic broom and use it to paint a picture of  
the sorcerer and his apprentice?



YouTube - Arts Active:  
<https://youtu.be/pxg0GvVPyGs>



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**Fun Fact!**  
The contrabassoon is  
shaped a bit like a  
paper clip. If you were  
to unfold it, it would  
be sixteen feet long!