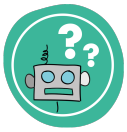

Research question

✳Why do currants move up and down in a mixture of water, vinegar and soda?

List of materials

- Two glass beakers
- 300 mls of water
- 100 mls of vinegar
- a spoon
- soda
- 12 currants

Process

➔ You do the experiment in pairs

- Pour 200 mls of water in one of the glass beakers
- Mix 100 mls of water and 100 mls of vinegar in the other one
- Drop 6 currants in each of the glass beakers
- Add a spoon of soda to each of the glass beakers and stir a bit (only for a few seconds)
- Observe carefully what happens in both of the glass beakers, using your senses, and describe it as completely as possible. Use some of the suggestions in the language box to the right.
- *Don't taste it!! - but smelling and listening are OK!*

Clear away:

☐ For the how to: read the workbook!

LANGUAGE BOX - expressions to use

*I **observed** ....*

*Sniffing up the odor I **smelled** ....*

*On the currants I **saw** ....*

*Listening carefully I **heard** a ..... noise*

*In the glass beaker with the vinegar I **observed** ..... - I **didn't** observe that in the glass beaker without vinegar.*

*After the currants **reached** the surface I **saw** .....*

*The currants going down again **had** .....*

*NOTICE ALL SENTENCES ARE IN THE **PAST** TENSE - that's the language scientist use!*

Observations of both glass beakers:

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Conclusion:

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Errors:

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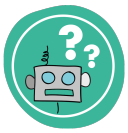
Everyone will have vinegar to use in the kitchen, we all know lemons are sour (acidic) and that milk can turn sour. Some apples taste a bit sweet and sour and for ages we've been using acids to preserve our food - just think of sauerkraut. And there's acid in your stomach - making throwing up very unpleasant, but also important to keep bacteria in our food in check. Maybe you've read about *pH* - a bit mysterious abbreviation which will turn up in biology, chemistry and science class often enough.



Research questions

✳How does the acidity (or pH value) differ between everyday things around us?
✳How will this pH value differ from what you expect?

Expectation

Record in the table all fluids from very acidic (sour) to least acidic (sour). Underline the fluids you think are about neutral.

very acidic	>>>	>>>	less acidic	>>>
1	2	3	4	5
6	7	8	9	10
>>>	>>>	>>>	>>>	least acidic

List of materials

- vinegar
- water
- ammonia
- milk
- buttermilk
- soap suds
- Spa red (with bubbles)
- apple juice
- coke
- saliva
- pH paper
- medicin cups
- tweezers
- plastic pH sheet

Process

➔ You do the experiment in pairs

- Line up the medicin cups and tear off ten pieces of pH paper
- Use the tweezers to dip a piece of pH paper in a fluid, take it out after two seconds and put it on the right number on the plastic pH sheet
- Compare the colour of each pH paper with the colour scheme on the pH box. If the colour e.g. is between 5 and 6, write down 5.5.
- Write down all pH values in the table.

Clear away:

☐ For the how to: read the workbook!

Observations: *write down all pH values in the table.*

vinegar	water	ammonia	milk	buttermilk
soap suds	**Spa red**	**apple juice**	**coke**	**saliva**

table 1: pH values of ten different fluids we often use.

Conclusion:

Most acidic is:

Least acidic is:

Almost neutral are:

I also notice that:

Errors

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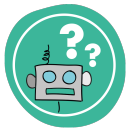
Plants have green leaves, important for *photosynthesis*: an important process the plant uses to produce glucose and oxygen. We will study this process in biology class. Parts of a plant can show other colors, like carrots and flowers. Sometimes leaves aren't green but another colour, like with Red Cabbage. But: is it red?



Research questions

What's the colour of Red Cabbage?

List of materials

- Red Cabbage
- Vinegar
- Three glass beakers
- Water
- Grater
- Sieve

Process

➔ You do the experiment in pairs

- Put the grated red cabbage in a glass beaker
- Poor water into the glass beaker to just above the red cabbage
- Poor water and cabbage through the sieve into another glass beaker
- Divide the colored water over two glass beakers
- Add vinegar to one of the glass beakers
- Carefully observe what happens (*tasting is not allowed in this experiment*)

Clear away:

☐ For the how to: read the workbook!

LANGUAGE BOX - expressions to use

*I **observed** ....*

*Sniffing up the odor I **smelled** ....*

*In the glass beaker with the vinegar I **observed** ..... - I **didn't** observe that in the glass beaker without vinegar.*

*ALWAYS WRITE IN THE **PAST** TENSE !*

Observations of both glass beakers:

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Conclusion:

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Errors

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