

Name _____

TEACHER NOTES FOR: What dissolves in vinegar?

(you can learn about something by watching it behave....)

Step 1 – Question – What do you want to know

Do flour, salt, baking soda, and sugar all dissolve in vinegar? _____

Step 2 – Prediction – What I think will happen (BASED ON WHAT HAPPENED LAST WEEK, AND WHAT I THINK THE VINEGAR MIGHT DO . . .)

If _____ flour, baking, soda, sugar and salt behave in vinegar like that did in water _____

then I predict _____ all will dissolve except flour _____
refer to variable you will change
refer to variable you will measure

Variable I will change _____ substance _____

Variable I will measure _____ whether it dissolves or not in vinegar _____

Variables I will keep the same

- _____ size cups, amount water, amount substance, amount stirring, time of stirring, temperature of water, _____

Step 3 – Materials – What I will use . . .

- _____ cups _____
- _____ spoons _____
- _____ flour, salt, sugar, baking soda _____
- _____ timer _____
- _____ vinegar _____

Step 4 – Procedure – The steps I will take . . .

1. _____ fill 4 cups with equal amounts of vinegar (about $\frac{1}{2}$ full) _____
 2. _____ add one level spoonful of sugar and salt to 2 cups _____
 3. _____ stir for a minute (each student stirs one cup) _____
 4. _____ observe if they dissolved, record results _____
 5. _____ repeat with baking soda and flour (new cups) _____
- OR DO ALL 4 substances at once, each student does one....

Step 5 – Data collection: my observations during the experiment (the focus is on whether the substance dissolves or not, but if anything else interesting happens, note that down too!):

	Dissolves in vinegar	Does not dissolve	Lots of bubbles produced?
sugar			
salt			
flour			
baking soda			

Overall Results - What was observed using multiple trials from the class? Were the overall results consistent with your results?

Which substances dissolve in vinegar: _____

Which substances do not dissolve in vinegar: _____

Which substances produced lots of bubbles? _____

Step 6 – Conclusion

My prediction _____
(state prediction)

was _____
(Supported or not supported by the data)

Concluding statement: ___ Because flour did not dissolve and the other substances did, flour must have different properties than sugar, salt, and baking soda. The acid in vinegar did not affect whether these substances dissolved or not. OR Because sugar, salt, and baking soda dissolved, they are more similar to each other than is flour, that did not dissolve in water. or something similar,....__
(include specific evidence in conclusion: Convince me!)

Follow-up question: How do your results from dissolving these substances in water compare to the results for vinegar? What was similar; what was different?

NOTE: Acids are molecules that like to attack other molecules...it was successful with baking soda...NaHCO₃...carbon dioxide gas produced, heavier than air. But we'd need to test it to see if it was carbon dioxide.