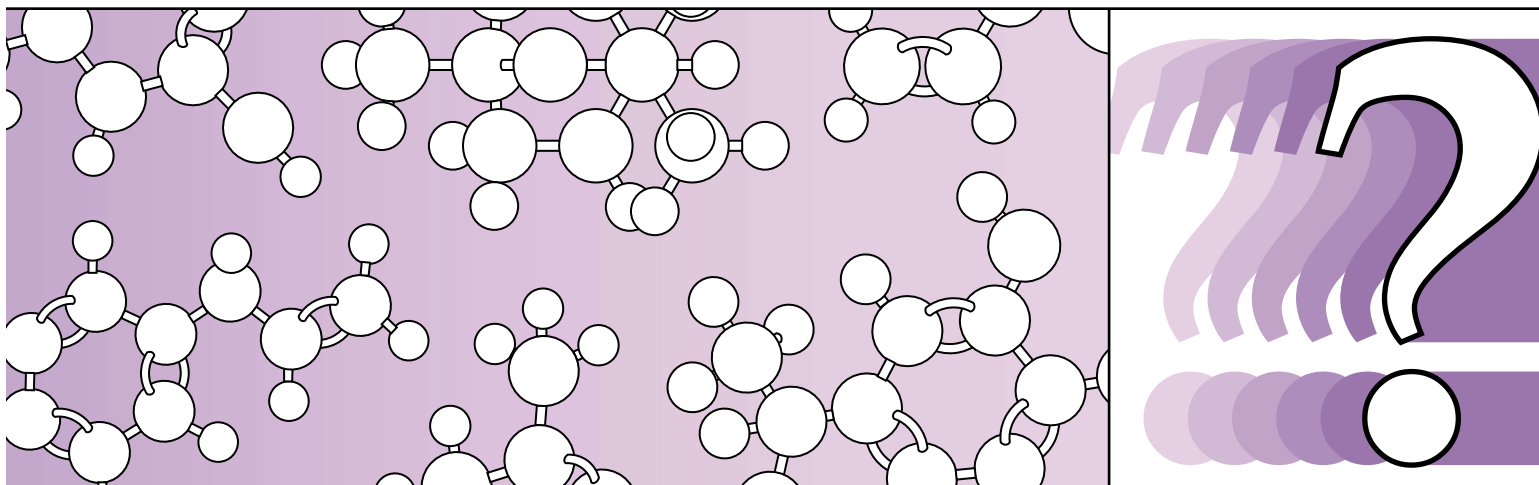


*The Pfizer Foundation Biochemistry*

# Discovery Lab

## Build an antacid molecule



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**You just ate a big meal and feel heartburn coming on.**

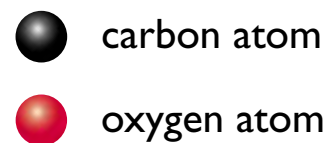
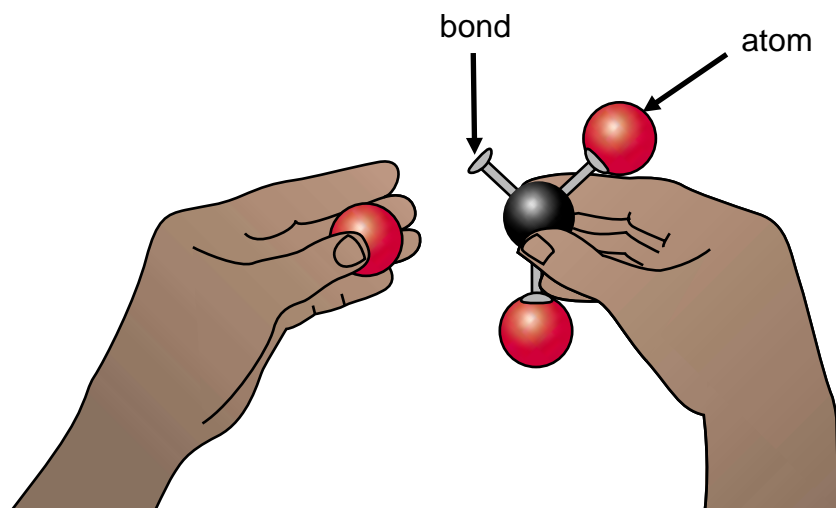
**You take an antacid and soon feel better.**

**Use molecule models to  
see how antacids work.**

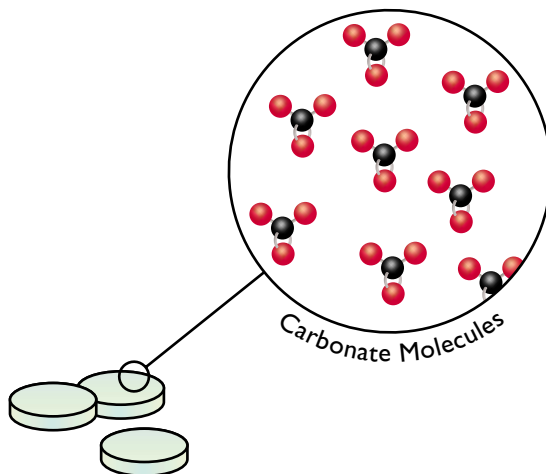
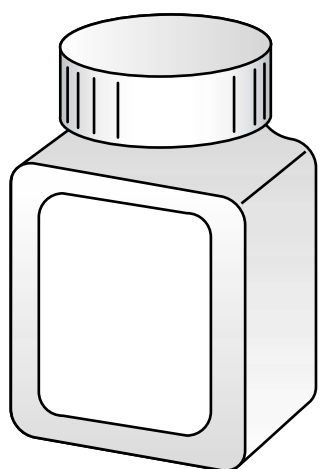
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Find the carbonate molecule in the case.

Use the atom pieces to build your own carbonate molecule.



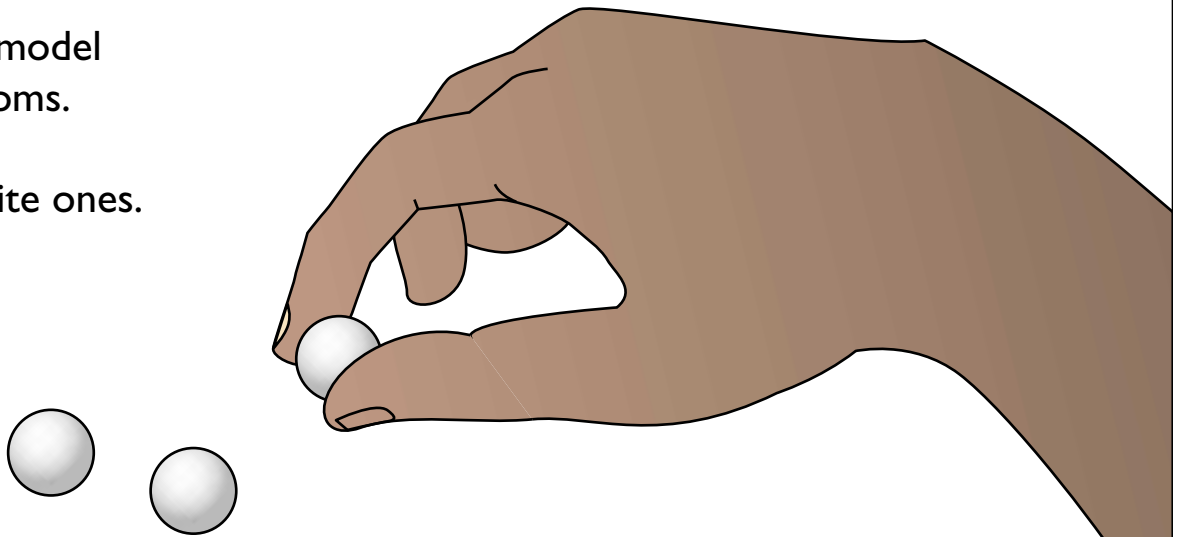
Carbonate molecules are in many brands of antacids.



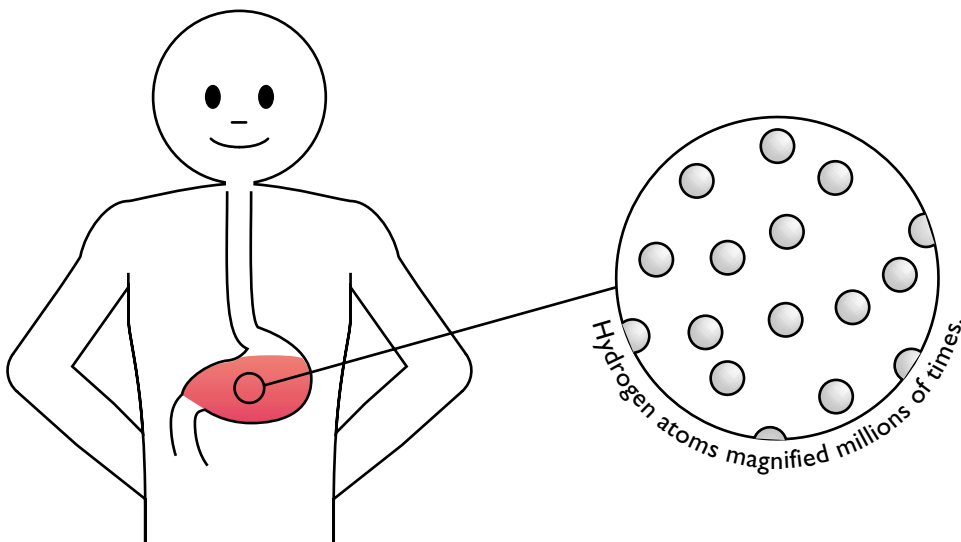
Your carbonate molecule model is millions of times bigger than a real carbonate molecule.

Collect a few model  
hydrogen atoms.

They are the white ones.

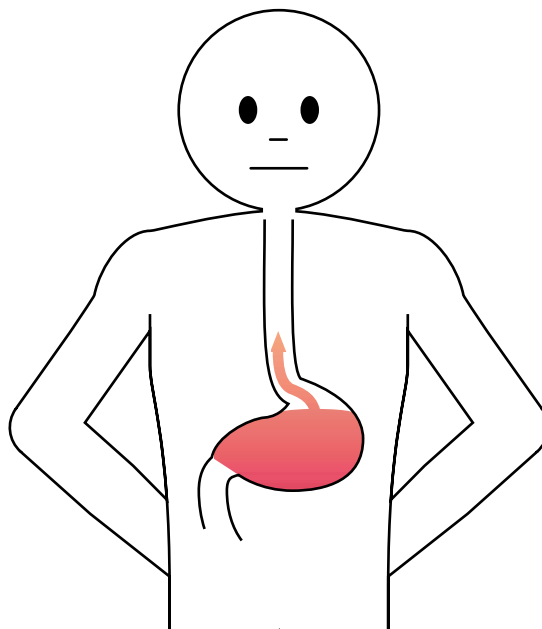


Your stomach juice contains loose hydrogen atoms.

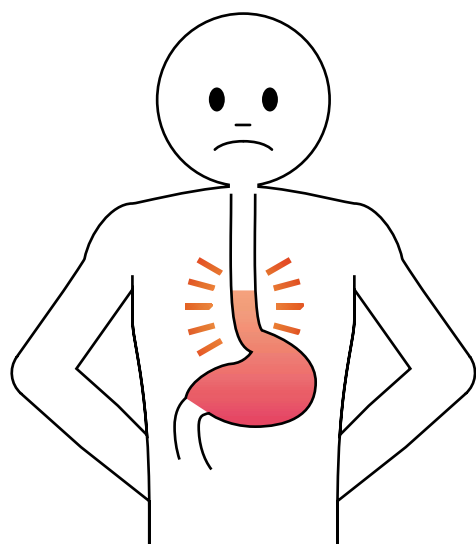


They are needed  
to help digest food.

Sometimes stomach juice spills into the tube above the stomach.

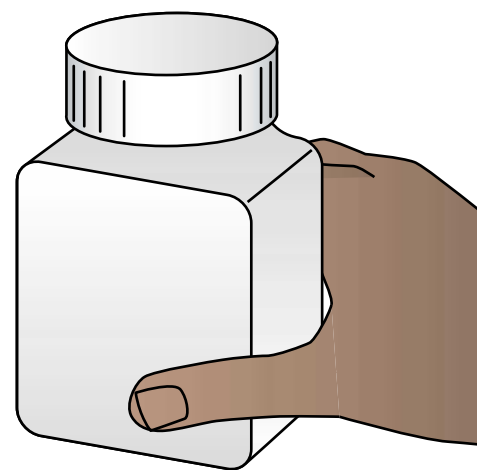


The loose hydrogen atoms in the stomach juice cause a burning feeling in the tube ...

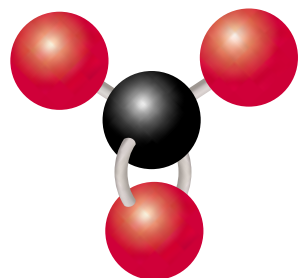


... which we call heartburn.

Then we take an antacid.

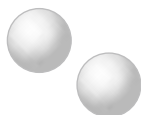


The carbonate molecules capture the loose hydrogen atoms in stomach juice:

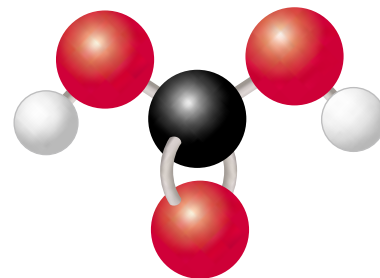


carbonate molecule  
in antacid

+



loose hydrogen atoms  
in stomach juice



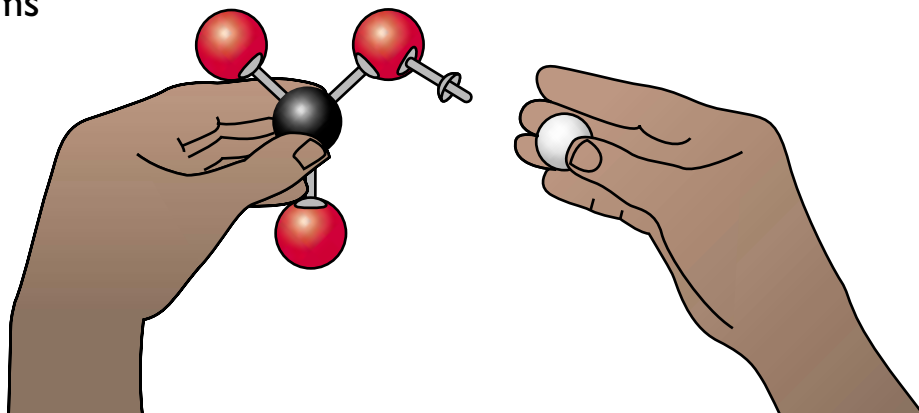
The loose hydrogen  
atoms are captured!

Find this molecule  
in the case.

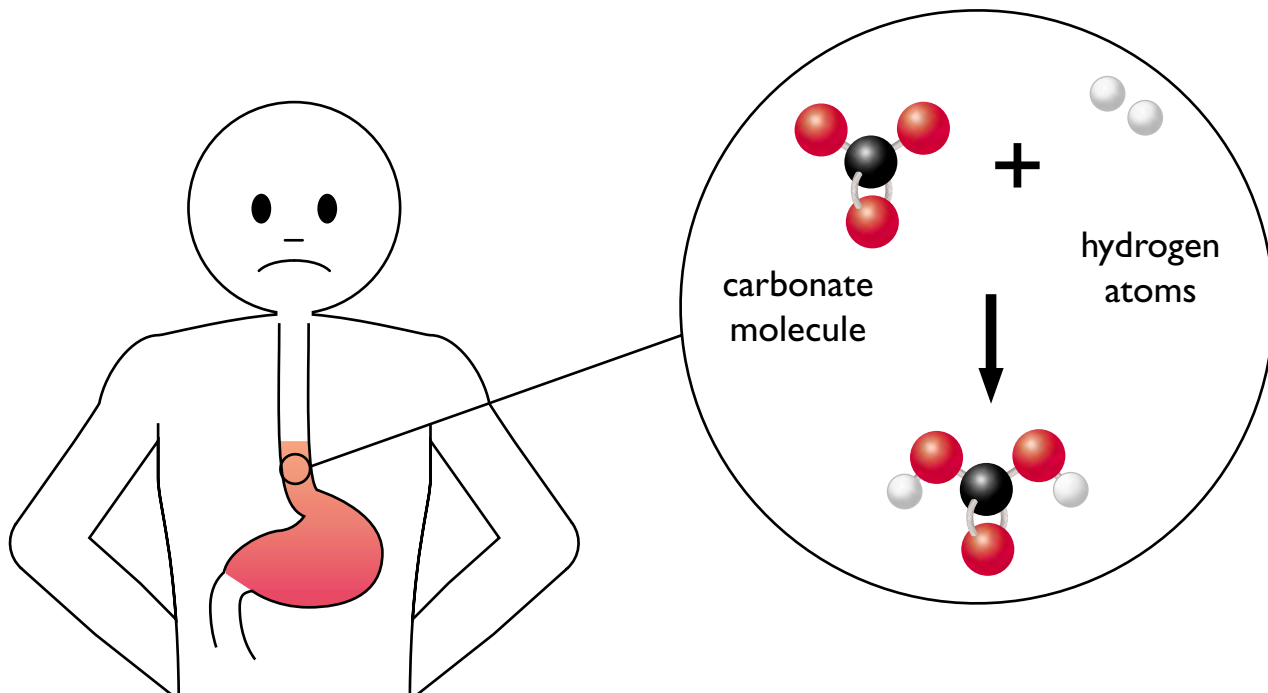
You can show the same chemical reaction with your molecule model:

Capture the loose hydrogen atoms  
with your carbonate molecule.

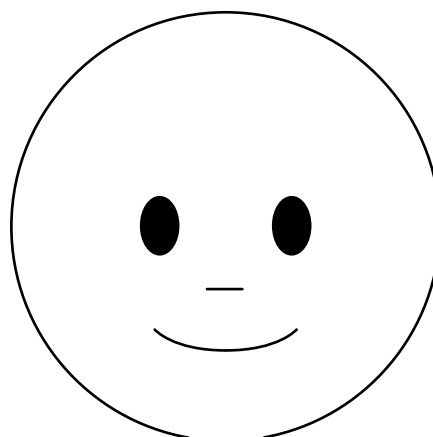
You will need some more  
bonds (gray sticks).



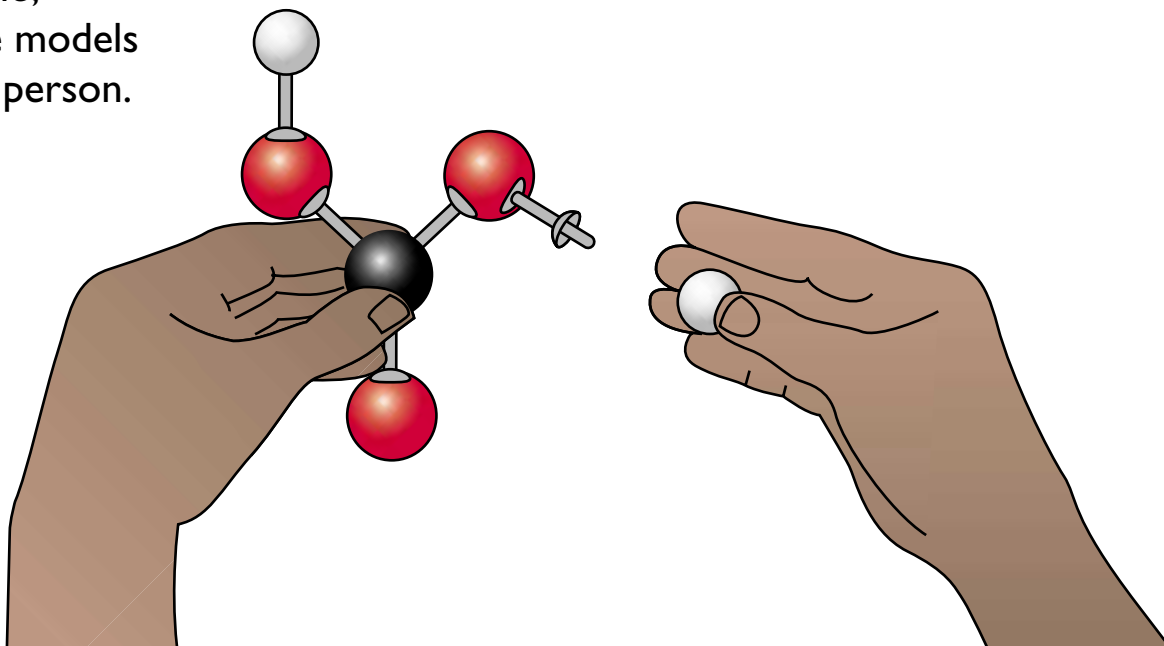
When you take an antacid, carbonate molecules capture the hydrogen atoms that have spilled into the tube above your stomach ...



... and the burning pain of heartburn goes away.



When you are done,  
pull your molecule models  
apart for the next person.



At another table you can use real  
antacid tablets to see how they work.





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