

Where's the Fun? Functional Groups

Name _____

Date _____ Period _____

Purpose

To explore the connection between molecular structure and smell.

Materials

- 1 set of 21 structural formula cards

Questions

1. Find all the molecules that have two oxygen atoms. What patterns do you discover among these molecules?

2. Find all the molecules that have a ring structure. Do all these molecules smell the same? Explain what you discovered.

3. Sort the molecules based on the number of carbon atoms they have. Do you think the smell of a molecule is related to the number of carbon atoms it has? Explain.

4. Sort all the molecules according to their names. What patterns do you discover?

5. Sort all the molecules by smell. What structural features do the molecules in the groups below have in common? Draw (or describe) the features.

Fishy-smelling molecules

Sweet-smelling molecules

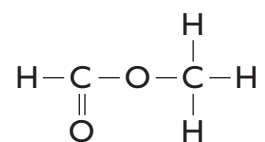
Putrid-smelling molecules

Gasoline-smelling molecules

Minty-smelling molecules

6. Can you think of another way to sort the molecule cards? Do any of these other sorting methods help you predict smell?

7. What smell would you predict for this molecule? Provide evidence to support your prediction.



8. **Making Sense** What structural features seem to be the best predictors of the smell of a molecule? Be specific.