

## Properties of stereoisomers– teacher notes

### Topic

Stereochemistry

### Timing

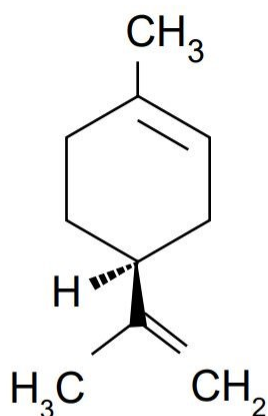
5 minutes

### Procedure

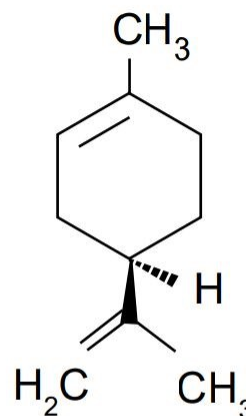
In this experiment, students detect the differences in smell of each enantiomer absorbed on cotton wool inside small sample bottles.

To prepare these;

1. Place a small quantity of cotton wool into each bottle.
2. Add 10 drops of the stereoisomer.
3. The bottles can then be passed around the classroom.



(R) - (+) - Limonene



(S) - (-) - Limonene

### Apparatus

- Plastic bottles x2
- Cotton wool

### Chemicals

- (R)-(+)-Limonene
- (S)-(-)-Limonene

### Extension

Students could obtain small quantities of (R)-(+)- limonene in natural fruits by carrying out steam distillation of the peel of citrus fruits such as oranges and lemons and comparing the odours against the standards.

However, the S-(-) isomer is scarce in citrus fruits: pine needles might be a good source, but the presence of other terpenes might make it hard to separate.

### Health, safety and technical notes

- Read our standard health and safety notes here <https://rsc.li/3fJh126>
- Students must wear eye protection if carrying out steam distillation.
- Not needed for sniffing the stereoisomers.