

Supporting Information

Translating across multiple representations of molecular structure: Student reasoning, accuracy, and personas

Lyniesha Wright Ward^a, Fridah Rotich^b, Sara Arevalo^b, Maia Popova^{b*}

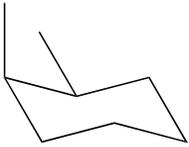
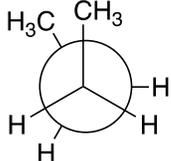
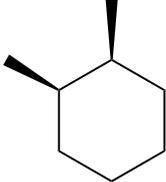
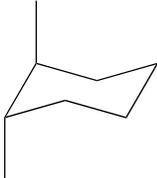
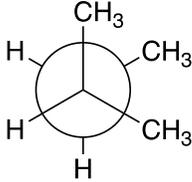
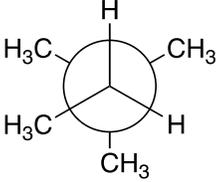
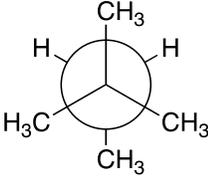
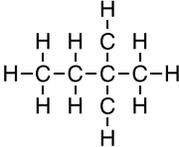
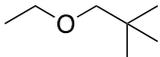
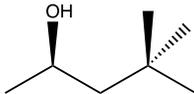
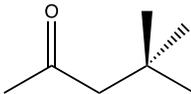
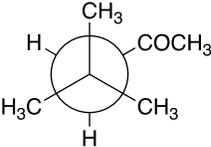
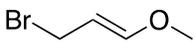
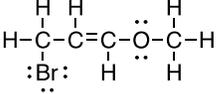
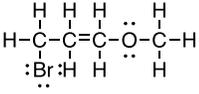
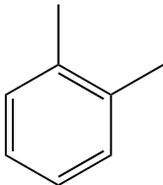
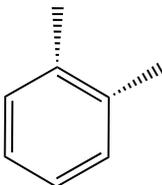
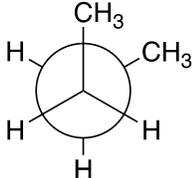
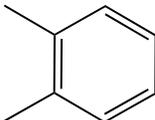
^aIndiana University Indianapolis, Indianapolis, Indiana, USA

^bUniversity of North Carolina at Greensboro, Greensboro, North Carolina, USA

Interview Protocol

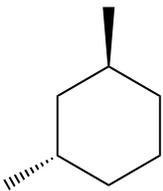
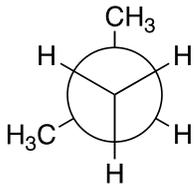
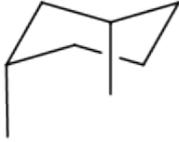
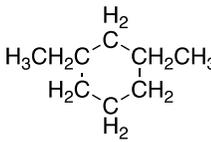
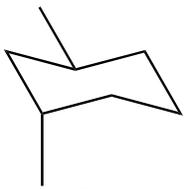
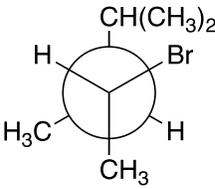
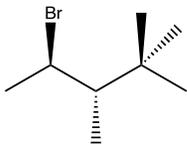
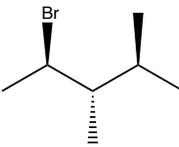
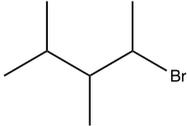
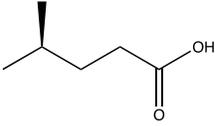
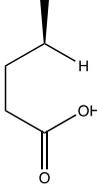
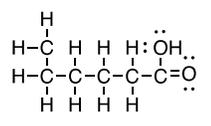
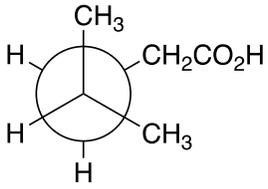
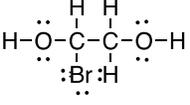
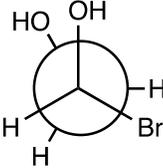
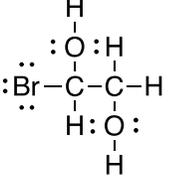
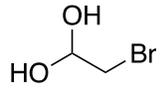
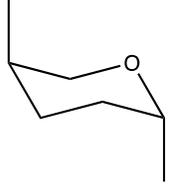
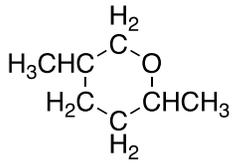
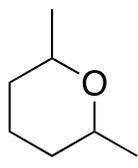
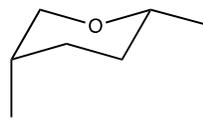
For each representation on the left, select the corresponding representation(s) from the provided options. There might be more than one correct answer. If you don't think that there is a correct response, feel free to draw your own structure.

1. Why is this (whatever they choose or draw) the corresponding representation(s)?
2. How did you deduce this?
3. Why did you not choose the other options?

Form 1				
				C_8H_{14}
Representation 1	A.	B.	C.	D.
				
Representation 2	A.	B.	C.	D.
$CH_3COCH_2C(CH_3)_3$				
Representation 3	A.	B.	C.	D.
		$BrCH_3CH=CHOCH_3$		C_4H_8BrO
Representation 4	A.	B.	C.	D.
				
Representation 5	A.	B.	C.	D.

Note: Correct answers are highlighted in green for the reader.

Form 2

 <p>Representation 1'</p>	 <p>A.</p>	 <p>B.</p>	 <p>C.</p>	 <p>D.</p>
 <p>Representation 2'</p>	 <p>A.</p>	 <p>B.</p>	<p>$C_6H_{15}Br$</p>	 <p>D.</p>
 <p>Representation 3'</p>	<p>$(CH_3)_2CH(CH_2)_2CO_2H$</p>	 <p>B.</p>	 <p>C.</p>	 <p>D.</p>
 <p>Representation 4'</p>	<p>$HOCHBr(CH_2)OH$</p>	 <p>B.</p>	 <p>C.</p>	 <p>D.</p>
 <p>Representation 5'</p>	 <p>A.</p>	 <p>B.</p>	 <p>C.</p>	<p>$C_7H_{14}O$</p> <p>D.</p>

Note: Correct answers are highlighted in green for the reader.