

Unit  
12  
Lesson  
6

**AIM**

- What are isomers?

**AGENDA**

- U12L6 Lesson video
- Drawing/Naming Isomers Notes & Practice

**YOYO**

- Watch the lesson video on YouTube (U12L6)

**HOMEWORK**

- Nothing Tonight
- Follow calendar

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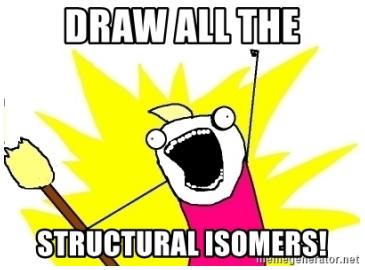
$C_5H_{12}$

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What are isomers?

- Isomers are compounds with the same chemical formula, but different molecular structures

**DRAW ALL THE STRUCTURAL ISOMERS!**



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Are These Isomers?

Compound 1	Compound 2	Are these isomers? Explain.
$\begin{array}{cccc} H & H & H & H \\   &   &   &   \\ H-C & -C & -C & -C-H \\   &   &   &   \\ H & H & H & H \end{array}$	$\begin{array}{c} H \\   \\ H-C-H \\   \\ H-C-C-C-H \\   \quad   \quad   \\ H \quad H \quad H \end{array}$	
Formula: _____	Formula: _____	
Name: _____	Name: _____	

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## Are These Isomers?

Compound 1	Compound 2	Are these isomers? Explain.
$  \begin{array}{cccc}  \text{H} & \text{H} & \text{H} & \text{H} \\    &   &   &   \\  \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\    &   &   &   \\  \text{H} & \text{H} & \text{H} & \text{H}  \end{array}  $	$  \begin{array}{ccc}  \text{H} & \text{H} & \\    &   & \\  \text{H}-\text{C}-\text{C}-\text{H} \\    & &   \\  \text{H} & & \text{H} \\    & &   \\  \text{H}-\text{C}-\text{C}-\text{H} \\    & &   \\  \text{H} & & \text{H}  \end{array}  $	
Formula: _____	Formula. _____	
Name: _____	Name: _____	

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## Check Point Question

Are these pictures of Mr. Potato Head Considered to be isomers? Explain in terms of structure.



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## Check Point Question

Are these pictures of Mr. and Mrs. Potato Head Considered to be isomers? Explain in terms of structure.



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## Creating Alkane Isomers

- Use the **same molecular formula**
- Draw a different structural formula
  - If the name of the compound is different but it has the same molecular formula, it is an isomer.

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## Creating Alkane Isomers

Original Compound	Isomer #1	Isomer #2
$  \begin{array}{cccccc}  \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H} \\    &   &   &   &   &   \\  \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\    &   &   &   &   &   \\  \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \text{H}  \end{array}  $		
Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____

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## Creating Alkane Isomers

Original Compound	Isomer #1	Isomer #2
$  \begin{array}{cccc}  \text{H} & \text{H} & \text{H} & \text{H} \\    &   &   &   \\  \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\    &   &   &   \\  \text{H} & \text{H} & \text{H} & \text{H}  \end{array}  $		
Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____

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## Creating Alkane Isomers

Original Compound	Isomer #1	Isomer #2
$  \begin{array}{cccc}  & \text{H} & & \\  &   & & \\  \text{H} & -\text{C}-\text{H} & & \\    &   & & \\  \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\    &   &   &   \\  \text{H} & \text{H} & \text{H} & \text{H}  \end{array}  $		
Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____

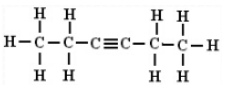
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## Creating Alkene and Alkyne Isomers

- Use the **same molecular formula**
- Move the location of the double or triple bond
  - *NOTE:* Be careful not to move it into the same position. Remember you can read compounds left to right or right to left.

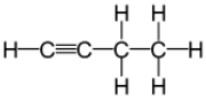
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## Creating Alkene and Alkyne Isomers

Original Compound	Isomer #1	Isomer #2
		
Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____

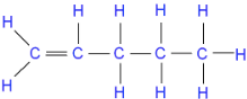
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## Creating Alkene and Alkyne Isomers

Original Compound	Isomer #1	Isomer #2
		
Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____

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## Creating Alkene and Alkyne Isomers

Original Compound	Isomer #1	Isomer #2
		
Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____

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## Creating Isomers with Functional Groups

- Use the **same molecular formula**
- Move the location of the functional group (if possible) or shift part of a carbon chain.
- These are a bit more challenging, and only basic isomers with functional groups will be asked.

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## Creating Isomers with Functional Groups

Original Compound	Isomer #1	Isomer #2
$  \begin{array}{cccccc}  \text{H} & \text{H} & \text{H} & \text{H} & \text{H} & \\    &   &   &   &   & \\  \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{C}-\text{Cl} \\    &   &   &   &   & \\  \text{H} & \text{H} & \text{H} & \text{Cl} & \text{H} &   \end{array}  $		
Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____

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## Creating Isomers with Functional Groups

Original Compound	Isomer #1	Isomer #2
$  \begin{array}{cccc}  \text{H} & \text{H} & \text{H} & \text{H} \\    &   &   &   \\  \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{O}-\text{H} \\    &   &   &   \\  \text{H} & \text{H} & \text{H} & \text{H}  \end{array}  $		
Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____

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## Creating Isomers with Functional Groups

Original Compound	Isomer #1	Isomer #2
$  \begin{array}{cccc}  \text{H} & \text{H} & & \text{H} & \text{H} \\    &   & &   &   \\  \text{H}-\text{C}-\text{C}-\text{O}-\text{C}-\text{C}-\text{H} \\    &   & &   &   \\  \text{H} & \text{H} & & \text{H} & \text{H}  \end{array}  $		
Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____	Molecular Formula: _____ Compound Name: _____

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