Task

Hidden in the grid are the **names of ten hydrocarbons**.

Circle them and complete the table below with their molecular and structural formula.

One of the hydrocarbons (butene) is identified to show what is expected.

M	E	T	P	R	O	P	I	N	E
E	T	P	R	O	P	A	N	E	T
T	M	E	O	C	R	O	M	H	O
H	E	R	P	T	O	N	E	E	E
E	T	T	E	N	E	B	T	X	T
X	H	A	N	A	N	U	H	E	H
A	A	N	E	B	U	T	E	N	E
N	N	H	E	T	H	A	N	E	N
E	E	O	C	T	A	N	E	N	E
B	U	T	A	N	O	E	L	E	T

Name of hydrocarbon	Molecular formula	Structural formula
butene	C_4H_8	$CH_2{=}CHCH_2CH_3$

1. What two types of hydrocarbons did you find? .....

2. What is the general formula for each group? .....

Answers

M	E	T	P	R	O	P	I	N	E
E	T	P	R	O	P	A	N	E	T
T	M	E	O	C	R	O	M	H	O
H	E	R	P	T	O	N	E	E	E
E	T	T	E	N	E	B	T	X	T
X	H	A	N	A	N	U	H	E	H
A	A	N	E	B	U	T	E	N	E
N	N	H	E	T	H	A	N	E	N
E	E	O	C	T	A	N	E	N	E
B	U	T	A	N	O	E	L	E	T

Name of hydrocarbon	Molecular formula	Structural formula
methane	CH_4	CH_4
ethane	C_2H_6	CH_3CH_3
propane	C_3H_8	$CH_3CH_2CH_3$
butane	C_4H_{10}	$CH_3CH_2CH_2CH_3$
ethene	C_2H_4	$CH_2=CH_2$
propene	C_3H_6	$CH_2=CHCH_3$
butene	C_4H_8	$CH_2=CHCH_2CH_3$
hexane	C_6H_{14}	$CH_3CH_2CH_2CH_2CH_2CH_3$
hexene	C_6H_{12}	$CH_2=CHCH_2CH_2CH_2CH_3$
octane	C_8H_{18}	$CH_3CH_2CH_2CH_2CH_2CH_2CH_2CH_3$

1. alkanes and alkenes

2. general formula; alkanes = C_nH_{2n+2} alkenes = C_nH_{2n}