

NAME: _____

1) Identify the following fuels as renewable or non-renewable. Circle the correct description.

Gasoline	Renewable	Non-renewable
Ethanol	Renewable	Non-renewable
Biodiesel	Renewable	Non-renewable
Diesel	Renewable	Non-renewable

2) Explain the role crude oil/petroleum plays in your life. Include examples of how it used in daily activities.

Fueling personal transportation; fueling off-road equipment (tractors, ATVs, lawn mowers); fueling transport of food, clothing and other products to stores or home; component of plastics, clothing and many other common products

3) Select one example used in question 2 and illustrate how this activity or way of life would be affected if petroleum availability was reduced/limited. Propose a strategy for modifying this activity so that it does not rely on, or reduces reliance on, petroleum to be completed successfully.

__The cost of fuel and other products composed of or transported by petroleum may significantly increase or have reduced availability

__Reduce petroleum use by using alternative fuels; taking mass transit; ride bike/walk when possible; reduce miles traveled (combine trips); don't idle; drive high-efficiency vehicles

__Switch to products made from bio-based materials (plastics, tires, etc can be made from plants)

4) List two characteristics of ethanol fuel. Describe how each characteristic affects (positively or negatively) yourself/family/local community.

Examples:

- Locally grown/produced: creating jobs in community; keeping people in rural communities; providing incomes and tax dollars that support other local businesses and activities*
- Reduced emissions: reduces impact on climate change which impacts local environment, native habitats and wildlife, volatile weather events, droughts/rain, changes in the growing season*
- High Octane: May choose ethanol blends to increase octane for advanced engines or as a racing fuel*

5) Evaluate the characteristics of gasoline, E15 and Flex Fuel blends. Based on this evaluation, compose a justification for why you would choose one of these fuels as your preferred fuel.

__Gasoline: current fuel, easy to use, currently inexpensive and available, 10% ethanol blend can run in all gas engines, no change needed

__E15: More renewable than traditional gasoline but can still be used in a majority of gasoline vehicles on the road today; slight octane boost; typically lower-priced than gasoline

__FlexFuels: Highest content of Minnesota-made, renewable fuel, lowest petroleum content; best emissions reductions; highest octane; typically cheaper price