**Biodiesel**

Biodiesel is one of the *renewable* *fuels* because it can be *manufactured* from animal *fats*, vegetable oils as well as recycled oils from restaurants. Most often, biodiesel is produced from *canola*, a widely grown *grain* used to make canola oil*,* one of the most common oils used for cooking. The reaction of canola oil with methanol produces biodiesel or canolamethylester.

Biodiesel is very similar to *conventional* diesel fuel but it burns with fewer *emissions*. Using 100% biodiesel (B100) *reduces* the emission of carbon dioxide by 75% compared to conventional diesel. This means that the use of biodiesel in older *fuel compression-ignition engines* can reduce harmful emissions. Furthermore, biodiesel is *biodegradable* and *nontoxic* while regular diesel is *toxic* and *hazardous* for the environment. This means that biodiesel is less *harmful* for the environment if it is *spilled*. Also biodiesel is less *combustible* than conventional diesel with a *flashpoint* of over 130°C compared to 52°C of conventional diesel, making it safer to use.

Unfortunately, energy is needed to produce biodiesel. The production of this energy also *emits* carbon dioxide (CO2 (g)). However, the production of diesel still produces more carbon dioxide than the production of biodiesel, making biodiesel the greener alternative.

Pure and *unblended* biodiesel is known as B100 and can be used for fuel compression-ignition engines which also run on conventional diesel. Furthermore, blends of conventional diesel and biodiesel such as B20 (20% biodiesel, 80% conventional diesel) are also used to reduce emissions of conventional diesel.

**Assignment**

*Read your article carefully and make a poster to present the information to your classmates.*

On the poster you should answer the following questions:

1. What is the alternative fuel presented in your article?
2. How can the alternative fuel be produced?
3. What are the fuels’ characteristics?
4. What are the environmental *advantages/disadvantages* of using this fuel?
5. Is the alternative fuel currently being used and how?