

### A Lesson on Fracking

Today let's talk about fracking. It's a subject that is constantly in the news. However, what is fracking? Well, fracking or hydraulic fracturing is the process of drilling and injecting fluid into the ground at a high pressure in order to fracture shale rocks to release the natural gas inside.

The process involves using a lot of water that at the fracking site is mixed with up to 600 different chemicals; including lead, uranium, and mercury. The fracking fluid is then pressure injected into the ground through a drilled pipe. When this mixture reaches the end of the well it causes the nearby shale rock to crack, creating fissures where natural gas flows into the well.

During this last process methane gas and toxic chemicals can leach out and may contaminate the nearby groundwater. Some contaminated 'well water' is used for drinking water in the US. Waste fluid created at the fracking site allegedly contaminates the air.

In the USA there are about 500,000 gas wells. About 72 trillion gallons of water, as well as 360 billion gallons of chemicals, are used to run the gas wells. Some 300,000 barrels of natural gas a day are produced by the wells, but at what price?

Environmentalists are dead against fracking, as they say it destroys the environment and communities. Local people are driven from their land when the water disappears or becomes contaminated. For the fracking operators it is big business, with loads of money being earned at the expense of the environment.

The recent collapse of oil prices has however made some fracking wells unprofitable. Wells are closing and workers laid off till the cost of a barrel of oil increases in price.

### SPEAKING – WARM UP

What is fracking? Think of two other things about fracking. Go round the room swapping details with others.

### LISTENING – WRITING - DICTATION

The teacher will read some lines of the article slowly to the class.

### READING

Students should now read the article aloud, swapping readers every paragraph.

### SPEAKING - UNDERSTANDING

**1) The article** – Students check any unknown vocabulary or phrases with the teacher.

**2) The article** - Students should look through the article with the teacher.

- 1) What is the article about?
- 2) What do you think about the article?
- 3) Was this an easy or difficult article to understand?
- 4) Was this a boring or interesting article?
- 5) Discuss the article.

**3) Article quiz** - Students quiz each other in pairs. Score a point for each correct answer. Score half a point each time you have to look at the article for help. See who can get the highest score!

#### Student A questions

- 1) How many different chemicals are there?
- 2) How many gas wells are there in the USA?
- 3) Who are dead against fracking?
- 4) What has the recent oil price collapse done?
- 5) For whom is fracking big business?

#### Student B questions

- 1) Briefly, what is fracking?
- 2) Explain what happens to the fracking fluid in the pipe.
- 3) How many barrels of natural gas a day are produced in the USA?
- 4) What becomes contaminated?
- 5) What is shale rock?

**Category: Technology / Fracking / Natural Gas**

**Level: Intermediate / Upper Intermediate**

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**WRITING / SPEAKING**

*In pairs.* On the board write as many words as you can to do with '**Fracking**'. *One-two minutes.* Compare with other teams. Using your words compile a short dialogue together.

**WRITING / SPEAKING**

*In pairs* – From the article choose three things about fracking. Write them below. Talk about them!

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_

**Add** three other things you know about fracking. Discuss together.

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_

*The teacher* will choose some pairs to discuss their findings in front of the class.

**SPEAKING - ROLEPLAY 3**

*As a class* - Split the students into two groups. One group is for fracking, the other group is against it. Argue the toss as to whether it is a good idea, or not? *5 mins.*

**DISCUSSION**

**Student A questions**

- 1) What do you think about what you've read?
- 2) Do you have any fracking wells near where you live? Explain.
- 3) How have oil prices affected fracking?
- 4) Why are people so concerned about fracking?
- 5) Would you go out and stop a fracking operator coming to your backyard?
- 6) Why have oil prices collapsed?
- 7) Why has Saudi Arabia not cut their production of oil produced per day?
- 8) Will huge areas of land soon become uninhabitable because of fracking?
- 9) What happens to land with no water on its surface?
- 10) How do governments gain from allowing fracking operators to drill wells?

**SPEAKING – ROLEPLAY 1**

*In groups.* One of you is the interviewer. The others are one of the following people. You are in the *Discussion FM* radio studio in Manchester, England. Today's interview is about: *A Lesson on Fracking.*

- 1) An environmentalist.
- 2) A fracking well owner.
- 3) A UK/USA government spokesperson.
- 4) Someone in the USA whose water on their land is now contaminated as a result of fracking.

*The teacher* will choose some groups to roleplay their interview in front of the class.

**SPEAKING - ROLEPLAY 2**

*In pairs* - *Student A* is for fracking. *Student B* is against fracking. *3-5 mins.*

**SPEAKING - DISCUSSION**

*Allow 10 minutes* – As a class.

*Discuss the following...*

Fracking – A good idea or an environmental time bomb?

*The teacher* can moderate the session.

**DISCUSSION**

**Student B questions**

- 1) Would you like to have a fracking well near where you live? Explain.
- 2) Would you campaign against a fracking well if it was going to be near your property?
- 3) Would you go into the fracking business to make loads of money?
- 4) Why are there more fracking wells in the USA than in Europe?
- 5) Is fracking dangerous? Explain.
- 6) Are environmentalists right to be jumping up and down in anger because of the fracking danger?
- 7) What happens to communities when their water becomes contaminated?
- 8) How many years will it take to decontaminate water supplies after there has been fracking on the land?
- 9) Is fracking big business? Explain.
- 10) Did you like this discussion?

**GAP FILL: READING**

**A Lesson on Fracking**

Today let's talk about fracking. It's a subject that is constantly in the news. However, what is fracking? Well, fracking or (1)\_\_\_ is the process of drilling and injecting (2)\_\_\_ into the ground at a high pressure in order to fracture shale rocks to release the natural gas inside.

The (3)\_\_\_ involves using a lot of water that at the fracking site is mixed with up to 600 different chemicals; including lead, uranium, and mercury. The fracking fluid is then (4)\_\_\_ injected into the ground through a drilled pipe. When this mixture reaches the end of the well it causes the nearby shale rock to (5)\_\_\_, creating (6)\_\_\_ where natural gas flows into the well.

During this last process methane gas and toxic chemicals can leach out and may (7)\_\_\_ the nearby groundwater. Some contaminated 'well water' is used for drinking water in the US. Waste fluid created at the fracking (8)\_\_\_ can allegedly contaminate the air.

***crack / pressure / fluid / hydraulic fracturing / contaminate / process / site / fissures***

In the USA there are about 500,000 gas wells. About 72 (1)\_\_\_ gallons of water, as well as 360 (2)\_\_\_ gallons of chemicals, are used to run the gas wells. Some 300,000 barrels of natural gas a day are produced by the wells, but at what price?

Environmentalists are dead against fracking, as they say it destroys the (3)\_\_\_ and communities. Local people are driven from their land when the water disappears or becomes contaminated. For the fracking (4)\_\_\_ it is big business, with loads of money being earned at the expense of the environment.

The recent (5)\_\_\_ of oil prices has however made some fracking wells (6)\_\_\_ . Wells are closing and workers laid off (7)\_\_\_ the cost of a (8)\_\_\_ of oil increases in price.

***unprofitable / barrel / till / trillion / collapse / operators / billion / environment***

**GAP FILL: GRAMMAR**

**A Lesson on Fracking**

Today let's talk about fracking. It's a subject (1)\_\_\_ is constantly in the news. (2)\_\_\_, what is fracking? Well, fracking or hydraulic fracturing is the process of drilling and injecting fluid (3)\_\_\_ the ground at a high pressure in order to fracture shale rocks to release the natural gas inside.

The process involves using a lot of water that at the fracking site is mixed (4)\_\_\_ up to 600 different chemicals; including lead, uranium, and mercury. The fracking fluid is (5)\_\_\_ pressure injected into the ground through a drilled pipe. (6)\_\_\_ this mixture reaches the end of the well it causes the nearby shale rock to crack, creating fissures (7)\_\_\_ natural gas flows into the well.

During this last process methane gas and toxic chemicals can leach out and may contaminate the nearby groundwater. (8)\_\_\_ contaminated 'well water' is used for drinking water in the US. Waste fluid created at the fracking site can allegedly contaminate the air.

***where / some / into / however / when / then / that / with /***

In the USA there are about 500,000 gas wells. About 72 trillion gallons of water, (1)\_\_\_ 360 billion gallons of chemicals, are used to run the gas wells. Some 300,000 barrels of natural gas a day are produced (2)\_\_\_ the wells, (3)\_\_\_ at what price?

Environmentalists are dead against fracking, as they say (4)\_\_\_ destroys the environment and communities. Local people are driven from their land when the water disappears or becomes contaminated. (5)\_\_\_ the fracking operators it is big business, with loads of money being earned (6)\_\_\_ the expense of the environment.

The recent collapse of oil prices has (7)\_\_\_ made some fracking wells unprofitable. Wells are closing and workers laid off till the cost of a barrel of oil increases (8)\_\_\_ price.

***however / as well as / but / for / in / at / by / it***

**GAP FILL: LISTENING**

**A Lesson on Fracking**

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The process involves using a lot of water that at the fracking site is mixed with up to 600 \_\_\_\_\_; including lead, uranium, and mercury. The fracking fluid is then pressure injected into the ground through a drilled pipe. When this mixture reaches the end of the well it causes the \_\_\_\_\_ crack, creating fissures where natural gas flows into the well.

During this last process methane gas and toxic chemicals can leach \_\_\_\_\_ the nearby groundwater. Some contaminated ‘well water’ is used for drinking water in the US.

Waste fluid created at the fracking site can allegedly contaminate the air.

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Environmentalists are \_\_\_\_\_, as they say it destroys the environment and communities. Local people are driven from their land when the water disappears or becomes contaminated. For \_\_\_\_\_ it is big business, with loads of money being earned at the expense of the environment.

\_\_\_\_\_ of oil prices has however made some fracking wells unprofitable. Wells are closing and workers laid off till \_\_\_\_\_ of oil increases in price.

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**WRITING/SPELLING**

**WRITING / SPEAKING**

**1) On the board – As a class / In pairs -** List five advantages and disadvantages of fracking. Compare fracking against other forms of energy. *Five minutes. Discuss together.*

**2) Sentence starters -** Finish these sentence starters. Correct your mistakes. Compare what other people have written.

- 1) Fracking \_\_\_\_\_
- 2) Environmentalists \_\_\_\_\_
- 3) Fracking operators \_\_\_\_\_

**3) Homework -** Write and send a 200 word email to your teacher about: **A Lesson on Fracking.** Your email can be read out in class.

**GAP FILL READING**

- 1) hydraulic
- 2) fluid
- 3) process
- 4) pressure
- 5) crack
- 6) fissures
- 7) contaminate
- 8) site

**ANSWERS**

- 1) trillion
- 2) billion
- 3) environment
- 4) operators
- 5) collapse
- 6) unprofitable
- 7) till
- 8) barrel

**SPELLING**

The teacher will ask the class individually to spell the following words that are in the article. Afterwards check your answers.

- 1) hydraulic
- 2) fracking
- 3) injecting
- 4) fluid
- 5) release
- 6) pressure
- 7) process
- 8) fracture
- 9) dangerous
- 10) mercury

**SPELLING**

Use the following ratings:

- Pass = 12**
- Good = 15**
- Very good = 18**
- Excellent = 20**

- 11) mixture
- 12) meanwhile
- 13) contaminate
- 14) trillion
- 15) environment
- 16) communities
- 17) nevertheless
- 18) unprofitable
- 19) till
- 20) collapse

A Lesson on Fracking – *20<sup>th</sup> February 2015*