

## CLASS NOTES TO UNIT: DATA CENTERS (Video lesson + Class + Portfolio assignments)

In this unit we are going to:

- Explore the lexical field related with data (1).
- Listen to a description of data centers and deal with its content (2).
- Discuss the availability of data centers, using comparison and contrast expressions (3).
- Make a comparative search on telecommunications data management/storage companies (4).

Parts 1-3 will be dealt with in the video lesson and in class, including exercises a and b. Part 4 must be done after the class and included in the students' portfolio

**1. Introduction:** Let's check the different meanings (and pronunciation, and singular/plural uses) of the following terms: *data vs. information / raw data vs. linked data, data centers/centres, data management, big data.*

**2. Listening:** Let's watch this video called "What does a data centre do?", using the English automatic subtitles option: <https://www.thenakedscientists.com/podcasts/video-podcasts/science-scrapbook/what-does-data-centre-do>

**Exercise a:** Answer these questions about the video, we will correct them in class:

- Why must computer data be backed up?
- How do small businesses and charities store their data?
- What is a server and what does it contain?
- What happens with data storage as businesses grow up?
- What are the main constraints of having lots of servers with regard to temperature, reliability and security?
- What is a data center, who maintain it and what is it equipped with?
- What is a colocation?
- Data center clients hire as many racks as they need, according to:...
- How do these centers deal with temperature?
- The global data center industry accounts for nearly as much.... as...
- How is the problem of heat and cooling systems being approached recently?
- Which three questions must organizations ask themselves to see if it is worth to hire a data center?

**3. Speaking:** Let's talk about the four data center proposals below. Here are some suggested answers:

PICT.	ADVANTAGE	DISADVANTAGE
1	Cheap, English-speaking, well-educated labour	terrorism
2	New development	flooding
3	Well-connected	Near airport
4	safe	Little infrastructure

## LOCATION, LOCATION, LOCATION

Look at the pictures. Write down one advantage and one disadvantage of each place as the location for a Tier 4 (most secure) data centre. Compare your answers with a partner.



1 Peshawar, on the Pakistan/Afghanistan border



2 Industrial development zone, New Orleans



3 Business park, near Heathrow airport, London



4 Remote farmland, Ireland

Let's check the grammar to establish contrast and comparison in our discussion:

to melt it.

- have the capability of -ing: The search engine **has the capability of processing** hundreds of thousands of pages per second.

Expressions of ability are often combined with expressions of necessity, for example in product design specifications: *The new design must have / has to have / needs to have / has got to have the capability of starting automatically / be able to start automatically.*

### Comparison and contrast

Comparative adjectives (e.g. *stronger / more expensive + than*) are commonly used to compare two items. Note the use of *that / those of* in the following examples:

*The safety record of the hybrid car is better **than that of** most other models. (= better **than the safety record of** most other models)*

*The dimensions of this mobile phone are smaller **than those of** the other one. (= smaller **than the dimensions of** the other one)*

The following linking words and phrases can be used to compare or contrast two ideas:

- *although / though*: **Although / Though** the turbine was heavy, the explosion lifted it into the air. The clauses can be reversed: *The explosion lifted the turbine into the air **although / though** it was heavy.*
- *while / whereas*: Laser light contains one wavelength, **whereas / while** ordinary light contains many. The clauses can be reversed.
- *however / nevertheless*: Cruise control is very convenient. **However / Nevertheless**, many drivers fail to use it. *Many drivers, **however**, fail to use it. Many drivers **nevertheless** fail to use it.*

- *on the other hand*: Deepwater drilling is risky. **On the other hand**, it opens up new oil fields. Ordinary computers have plastic cases. **Rugged models, on the other hand**, have metal ones.
- *instead*: The oil is not located in one place. **Instead**, it is broken up into thousands of small pockets.
- *instead of*: The atom emits two photos **instead of one**. **Instead of using** pressure, the capacitive screen uses the conductivity of the user's finger.
- *unlike*: **Unlike** a normal vertical well, the snake well bends in all directions. The clause / phrase can be reversed.
- *compared with*: **Compared with** normal oil clean-up operations, a robotic oil-cleaning device would be very cost effective. The clause / phrase can be reversed.

### Simultaneous actions

The following forms can be used to express the idea that two actions happen at the same time, or simultaneously:

- *simultaneously / at the same time*: Press the pedal and **simultaneously** push the lever. **Simultaneously** press the pedal and push the lever.
- *at the same time as*: **At the same time as** you press / you're pressing the pedal, push the lever. Press the pedal **at the same time as** you push / you're pushing the lever.
- *while + verb + -ing*: **While pressing** the pedal, push the lever. This can only be used if the subject is the same for both verbs. Otherwise, use subject + present continuous: **While your colleague is checking** the brakes, you can inspect the power steering.
- *as*: **As** the piston goes down, the valve opens. The valve closes again **as** the piston rises.

### Cause and effect

Explanations of cause and effect (or result) can mention the cause first and then the effect, or mention the effect first, followed by the cause.

**Exercise b:** Write 2 sentences comparing and/or contrasting the data centers. Then, rewrite them with a different connector. *E.g.: On the one hand, Business Park is a good location in terms of connection. On the other hand, the nearness of the Heathrow airport may pose a problem. **Although** Business Park...*

**4. Search for your portfolio:** Look for 3-4 different telecoms. data management and/or storage companies. Write down their names and links and explain, in a paragraph, their differences, using comparison and contrast expressions as in this unit. Approx. length: 120 words.