Characters, symbols and the Unicode miracle

I – Communication practice

With your partners, prepare a short presentation (one or two slides) of one of the following topics.
The given links are only a starting point of the research that you will have to make to complete your knowledge on the topic.

1. **About character encoding in general**
   a) What are the main concepts of character encoding? [W↗]
   b) Except ASCII or UTF family, are there other famous character encodings? [W↗]
   c) What are the character encodings for the Japanese language? [W↗]

2. **The non extended ASCII code**
   a) Letters and numbers: how are they structured by their codes? [W↗]
   b) Control characters: what is their purpose and are they all still useful? [W↗]
   c) Special characters: can you find something interesting about them?

3. **The extended ASCII code** [W↗]
   a) Code pages: how are they classified?
   b) What are the code pages for Arabic characters and what are their differences?
   c) What are the code pages for Greek characters and what are their differences?

4. **The EBCDIC code** [W↗]
   a) What is the history and the context of use?
   b) What is the principle of encoding?
   c) What are compatibility problems with ASCII?

5. **The Unicode standard**
   a) What is the Unicode consortium? [W↗]
   B) What is the procedure for a character to be integrated in the UCS? [U↗]
   c) Can you cite and explain several examples of characters that failed to be approved? [U↗]

6. **The Unicode standard**
   A) What is Unicode coding space and its so-called "planes"? [W↗]
   b) What is the universal coded character set (UCS) of the Unicode standard? [W↗]
   c) What are the standardized subsets and how are they useful? [W↗]

7. **The UTF-32 format** [W↗]

    a) What are the characteristics, principles, advantages and drawbacks of this format?

    b) Is there any use of this format? If not, explain how you failed to find one.

    c) What are the two different endianness conventions and what is the byte order mark?

8. **The UTF-16 format** [W↗]

    a) What are the characteristics and principles of this format?

    b) What are the main uses of this format?

    c) What is the notion of surrogate pairs?

9. **The UTF-8 format** [W↗]

    a) What are the principles of this format?

    b) What are the main advantages and drawbacks of this format?

    c) What are the main uses of this format?

10. **Several transcoding systems**

    a) What is the MIME content transcoding called *quoted-printable* and how does it work? [W↗]

    b) What is the URL transcoding called *percent-encoding* and how does it work? [W↗]

    c) What is the hostnames transcoding called *punycode* and how does it work? [W↗]