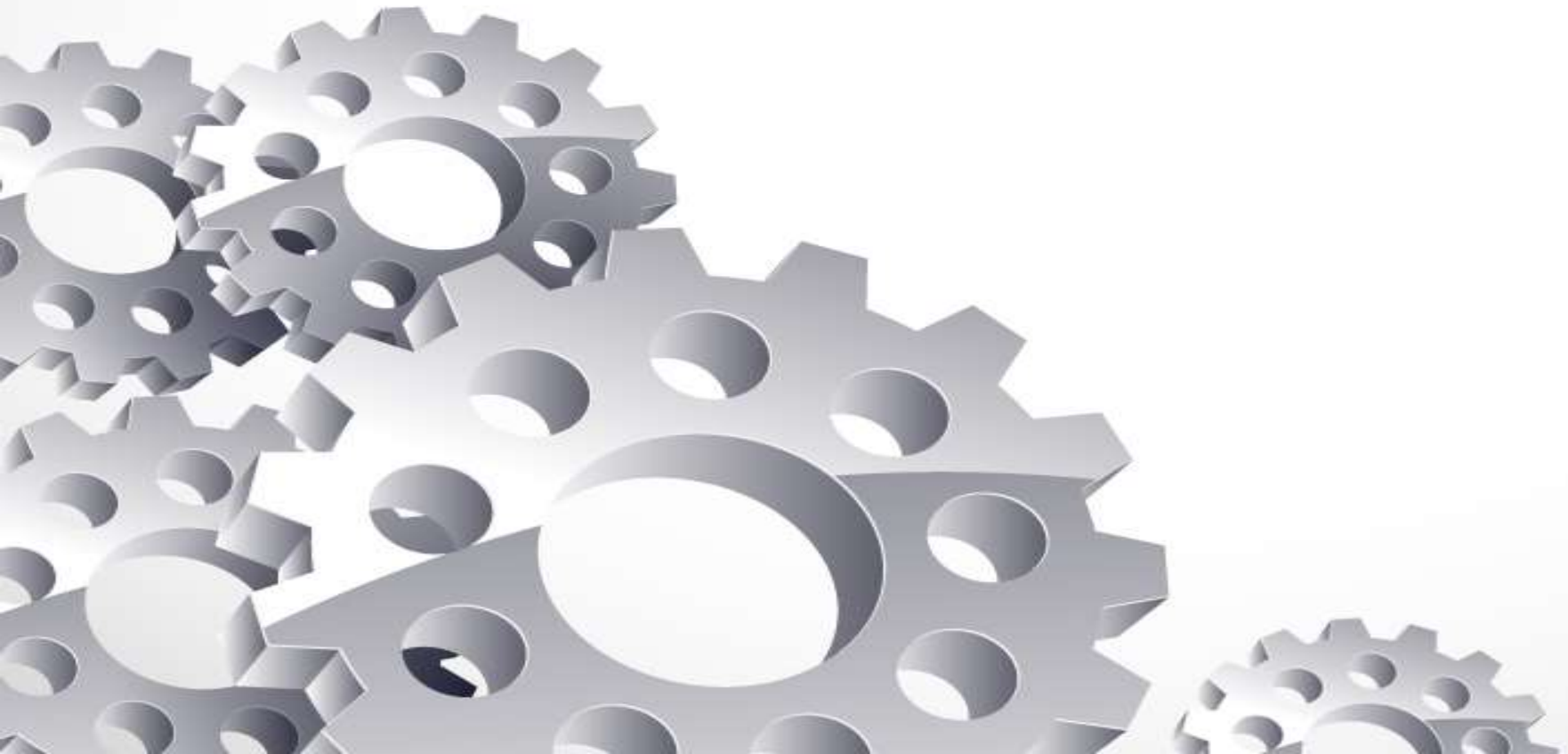


«Structure and properties of metals.  
Present Perfect Continuous.»





## Objectives:

- to learn new vocabulary;
- to practice grammar structures;
- to enable st's to talk and write on the topic;
- to instil the idea that learning languages is necessary and essential;
- to encourage st's to go on learning English at the next level;
- to lay the foundations for future study in terms to basic structures, lexis, language functions and basic study

# Plan:

1. Vocabulary activity.
  2. Discussing of the topic «Structure and properties of metals. Present Perfect Continuous.» Grammar revision
  3. Listening, reading, writing, speaking.
  4. Grammar activity.
  5. Communicative activities :
    - Task 1. Give the English equivalents the following words and word combinations.
    - Task 2. Answer the questions to the text.
    - Task 3. Fill in the blanks with the necessary words from the active vocabulary.
    - Task 4. Complete the following sentences.
    - Task 5. Put in the right order. The underlined word is the beginning of the sentence.
    - Task 6. Translate the following sentences into English.
- Home task: Reading an additional text on the topic



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## Хід заняття (Procedure)



- 1) Learn the new words and word combinations.
- 2) Make some questions on the text.
- 3) Read the text and translate into Ukrainian in the written form.
- 4) Make summary of the text in English.
- 5) Read text 1 and fill in the blanks (1-10) with the appropriate words (a-j)


## Text 1

- a) boundaries
- b) advantage
- c) engineering
- d) processes
- e) modern
- f) power
- g) test
- h) methods
- i) properties
- j) steel



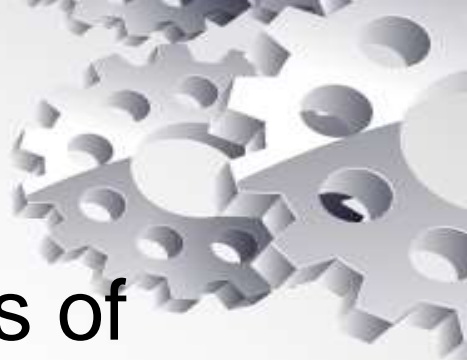
Metals are one of the most widely used types of (1) materials. Some of their properties, e.g. elastic constants, can be directly related to the nature of the metallic bonds between the atoms. On the other hand, macroand microstructural features of metals, such as point defects, dislocations, grain (2), and second phase particles, control their yield, flow, and fracture stress. Images of microstructural elements can be obtained by (3) imaging techniques. Modern computer aided (4) can be further used to obtain a quantitative description of these microstructures.





These methods take (5) of the progress made in recent years in the field of image processing, mathematical morphology and quantitative stereology. Quantitative description of the microstructures are used for modeling (6) taking place under the action of applied load at a given temperature and (7) (service) environment. These model considerations can be illustrated on the example of an austenitic stainless (8), which is an important material for (9) generating and chemical industry.





Reports recently published also show that properties of materials can be significantly modified by the effect of free surface. Examples of such situations include environmental effect on the mechanical (10) of materials. Data for an austenitic stainless steel is used to discuss contribution of the free surface to the mechanical properties of metals.



### **5) Write a question for each situation.**

**1.** You meet Kate as she is leaving the swimming pool. You say:

Hi, Kate. (you / swim?) Have you been swimming?

**2.** You have arrived a little late to meet Ben who is waiting for you. You say:

I'm sorry I'm late, Ben. (you / wait / long?)

**3.** Jane's little boy comes into the house with a very dirty face and dirty hands. His mother says:

Why are you so dirty? (what / you / do?)

**4.** You are in a shop and see Anna. You didn't know she worked there. You say:

Hi, Anna. (how long / you / work / here?)

**5.** A friend tells you about his job – he sells phones. You say:

You sell phones? (how long / you / do / that?)



## 6) Read the situations and complete the sentences.

1. It's raining. The rain started two hours ago.

It 's been raining for two hours.

2. We are waiting for the bus. We started waiting 20 minutes ago.

We ..... for 20 minutes.

3. I'm learning Japanese. I started classes in December.

..... since December.

4. Jessica is working in a hotel. She started working there on 18 January.

..... since 18 January.

5. Our friends always go to Italy for their holidays. The first time was years ago.

..... for years.



**7) Put the verb into the present continuous (am/is/are + -ing) or present perfect continuous (have/hasbeen + -ing).**

- 1 Maria has been learning (Maria / learn) English for two years.
- 2 Hi, Tom. .... (I / look) for you. I need to ask you something.
- 3 Why ..... (you / look) at me like that? Stop it!
- 4 Rachel is a teacher. .... (she / teach) for ten years.
- 5 ..... (I / think) about what you said and I've decided to take **your advice**.
- 6 'Is Paul on holiday this week?' ..... 'No, ..... (he / work).'
- 7 Sarah is very tired. .... (she / work) very hard recently.
- 8 It's dangerous to use your phone when ..... (you / drive).
- 9 Laura ..... (travel) in South America for the last three months.



**8) Ask questions using the words in brackets. Use the present perfect simple (have/has done) or continuous (have/has been doing).**

1. You have a friend who is learning Arabic. You ask:

(how long / learn / Arabic?) *How long have you been learning Arabic?*

2. You have just arrived to meet a friend. She is waiting for you. You ask:

(wait / long?) Have

3. You see somebody fishing by the river. You ask:

(catch / any fish?)

4. Some friends of yours are having a party next week. You ask:

(how many people / invite?)

5. A friend of yours is a teacher. You ask:

(how long / teach?)

6. You meet somebody who is a writer. You ask:

(how many books / write?)

(how long / write / books?)

7. A friend of yours is saving money to go on a world trip. You ask:

(how long / save?)

(how much money / save?)

# Thanks for attention

