

THE FLASH LEARNING TECHNICAL ENGLISH

C2
STEP A

1ST EDITION
2023-2024



Prepared by
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Index

List of contents

Unit 01 - Discoveries x Inventions

Unit 02 - Projects

Review Units 01 and 02

Listening Units 01 and 02

Exercises Units 01 and 02

Credits

List of contents

Contents



UNIT 01

Focus on asking and
answering questions
appropriately



UNIT 02

Focus on explaining how
devices work and
product description



Skills

Asking questions
Linking Clauses

Grammar

Past Continuous
Present Perfect Continuous
Linking with Past Participle



Skills

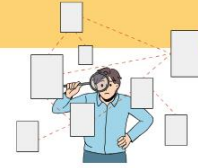
Necessity, Recommendation
and Ability,
Describing products
Describing functions of devices

Grammar

Present simple passive
Past Simple passive
Modals



How to use this book



Welcome to our language learning adventure! This book is designed to be a valuable companion for individuals engaged in various fields, whether it's production processes, planning, engineering, or beyond. We understand the diverse backgrounds of our readers, and our aim is to make learning simple yet profound. Each section of the book focuses on a specific skill, ensuring a well-rounded language acquisition experience.

Grammar Focus



We've broken down grammar topics into digestible fragments, allowing both students and teachers to engage in effective review. Students will have the opportunity to apply grammar skills actively, while teachers can easily assess and guide their progress. The clear and concise presentation ensures that grammar becomes a friend rather than a daunting challenge.

Visual Learning with Design



The carefully chosen photos in this book serve a dual purpose—captivating your attention and providing material for picture description activities. Additionally, we've incorporated design patterns to help you visualize grammar and constructions in a memorable way. The spacious layout encourages personal notes, facilitating the incorporation of additional knowledge gained through discussions or supplementary materials.

Review and Extra Exercises



Reinforce your learning with the dedicated review and extra exercises sections. Embrace the chance to learn from mistakes, as these sections provide valuable practice for honing your language skills. Whether you're aiming for perfection or looking to overcome challenges, these exercises are tailored to enhance your understanding and application of English in real-world scenarios.

Conclusion

Learning should be an enjoyable journey, even when delving into higher levels and technical English. We've crafted this book with the belief that education can be both enriching and fun. Dive into the content, embrace the diverse topics, and let the combination of simplicity and depth guide you toward linguistic mastery. Happy learning!



You can get more information about the book, other materials, methodology, flipbooks, and more by contacting Teacher Yvan Henrique.

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Discoveries x Inventions

1



Warm-up

Which invention or discovery most amazes you?
What do you know about it?
How has it changed the way we live?

Describing discoveries and inventions

Example

Penicillin
Alexander Fleming - 1928
had left dirty petri dish in the sink
bacteria growing on it - not where fungus had formed.

Bacteria was growing on a dirty petri dish when
fungus fell on it killing it.

1

Now describe some inventions using the information
provided below.

Anesthesia
Horace Wells - 1844
a friend - used nitrous oxide as a laughin-gas stage -
got hurt - didn't feel it.

Botox
Alastair and Jean Carruthers - 1987
Used small doses of the toxin - treat eye spasms and
muscle disorders - noticed wrinkles magically disappeared.

Brandy
A Dutch shipmaster - 16th century
using heat - to concentrate wine during trips
- concentrated wine - tasted better



Grammar Focus



Past Continuous and Past Simple

Past Continuous is about actions in progress during some time in the past..
Past simple is about actions finished in the past.
They work together when we tell stories or comment on discoveries and inventions.

Reading

Penicillin, a groundbreaking antibiotic derived from the *Penicillium* mold, was discovered by Alexander Fleming in 1928. By observing that the mold inhibited the growth of *Staphylococcus aureus* bacteria, Fleming isolated and purified penicillin. Later, Howard Florey and Ernst Boris Chain further developed the drug, leading to its therapeutic use by 1941. Penicillins function by inhibiting bacterial enzymes involved in cell wall synthesis, targeting replicating microorganisms without harming human cells. Despite their efficacy, some bacteria have developed resistance mechanisms, leading to the production of penicillinase-resistant penicillins. While penicillins treat various infections, they can cause hypersensitivity reactions such as skin rash and anaphylaxis, which are managed with alternative antibiotics and, in severe cases, immediate epinephrine administration.



Discuss the Questions

1. Who discovered penicillin and how did they observe its effect on bacteria?
2. How do penicillins inhibit bacterial growth, and how have scientists addressed bacterial resistance to this antibiotic?
3. What are the side effects of penicillin, and how are hypersensitivity reactions managed in medical settings?



Grammar Focus

Present Perfect Continuous

How long have we been using Penicillin?
Doctors have been prescribing it for years.



We use Present Perfect Continuous for things we started doing in the past and continue doing until the present moment. We also use it to focus on repeated actions from the past until now.

Recent Inventions

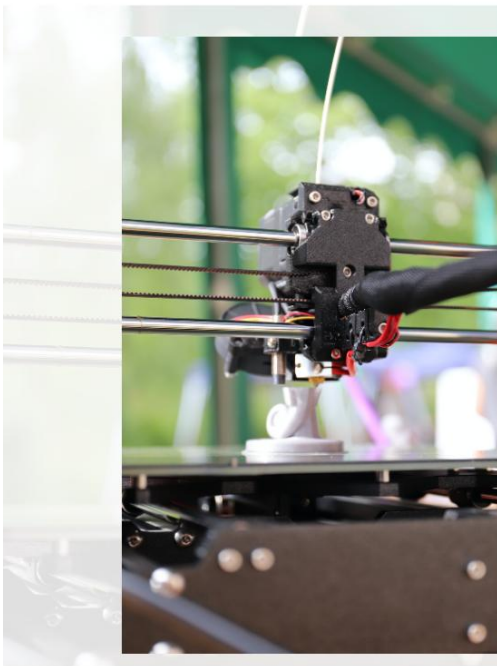
2

Check these inventions from the last decades and discuss about them using Present Perfect Simple and Continuous. Make notes to help you organize ideas.

Movie Streaming
Autonomous Cars
Bioprinting
Video Doorbell
Uber service
Instagram
Air Fryers

How has life changed since it was invented?
How long have you used it? If you haven't, would you?
Do you know how it works?





3D Printing

The 3D printing process initiates with creating a graphic model of the object through CAD software like TinkerCAD, Fusion360, or Sketchup. Complex products are thoroughly simulated to detect defects, but for purely decorative objects, this step is less crucial. 3D printing offers limitless prototyping possibilities, limited only by creativity.

Some objects are too intricate for traditional methods like CNC milling or molding, making 3D printing a cost-effective alternative. Post-design, the model is digitally sliced, a crucial step as 3D printers lack human-like conceptualization of 3D models. Slicing dissects the model into layers, with each layer's design sent sequentially to the printer head. Special slicer programs like CraftWare or Astropoint handle this process, including creating internal lattice structures for added stability if needed.

3D printers excel at incorporating air pockets within strong materials, ensuring objects are both lightweight and robust. The printer then executes the model's printing based on specific slicer program instructions, utilizing different methods based on the printer type.



3 Discuss the questions about the text.

1. "How does CAD software contribute to creating a 3D model for printing?"
2. "Why is simulating products vital in 3D printing, especially for complex items? How does it vary for decorative objects, and what's crucial in defect detection during simulation?"
3. "How does 3D printing act as a cost-effective alternative for intricate objects compared to traditional methods? Can you share examples?"
4. "What's the significance of the slicing process in 3D printing? How do slicer programs like CraftWare or Astropoint impact this step?"
5. "How do air pockets enhance 3D-printed materials? What role do they play in the final product, and why are they crucial in manufacturing?"

Vocabulary

4 Match the antonyms.

Initiates	Simple
Thoroughly	Terminates
Prototyping	Shaking
Intricate	Fails
Slicing	Combining
Sequentially	Randomly
Lattice	Superficially
Stability	Solid
Executes	Final Version



Grammar Focus



Linking with Past Participle.

Equipped with state-of-the-art technology, our 3D printers revolutionized the manufacturing industry.
Developed by leading engineers, the new 3D printer model broat unparalleled precision and speed.
Inspired by sustainable practices, the company introduced a line of eco-friendly 3D printers.
Recognized for its innovative design, the 3D printer has been used by architects and designers worldwide.
Powered by advanced software, our 3D printers have been integrated into schools and universities.

5

Get information from the text to create sentences linked with Past Participle.

3D Printing Process:



The 3D printer's print bed moves or the print head moves (depending on the type of printer) in accordance with the instructions from the G-code. The printer deposits the melted material layer by layer onto the print bed. It starts from the bottom and works its way up, cooling and solidifying the material with each layer.

Layer-by-Layer Construction:



The printer continues this process, stacking one layer on top of another. Each layer fuses with the preceding one, gradually building the object. Complex geometries that would be difficult or impossible to create with traditional manufacturing methods can be achieved through 3D printing.

Cooling and Solidifying:



As each layer is deposited, it begins to cool and solidify. Some 3D printers have heated print beds or temperature-controlled chambers to ensure that the object doesn't warp or lose its shape as it cools down.

Completion and Removal:



Once the printing is complete, the object needs to cool down and harden fully. After that, it can be carefully removed from the print bed. Depending on the complexity and size of the object, support structures might have been printed alongside the object to prevent sagging during the printing process. These supports are removed manually after printing is done.



