

TITLE: What's blockchain?

LEARNING SCENARIO	
School:	Duration (minutes): 45
Teacher:	Students age: 15

Essential Idea:	What's blockchain?
------------------------	---------------------------

Topics:

- Pupils have a broad understanding of programming, programs and their role in the modern society. In addition, they understand the importance of programming in influencing and expressing themselves.

Aims:

- Pupils design and implement various automation solutions as well as analyze automation solutions for various hardware and software applications.
- Pupils will explore opportunities to develop mobile operating systems via practical examples.

Outcomes:

- Pupils become familiar with blockchain technology and its applications, they understand the working principles of solutions that simulate block chains and they get acquainted with simple cryptographic principles.
- Pupils get familiar with mobile devices and their operating systems working principles.

Work forms:

- individual work
- work in pairs
- group work

Methods:

- presentation
- discussion
- interactive exercise

ARTICULATION**Course of action (duration, minutes)****INTRODUCTION**

Teacher starts discussion with pupils:

Blockchain and Bitcoin are a complete hit in the world of technology for years, but not many of us know what they're all about.

What is blockchain, really?

MAIN PART**Topics for discussion:**

Blockchain is basically a new way of digital money transfer, but can also be used to transfer contracts or other sensitive data. It was originally invented for the first digital currency – Bitcoin, but today it's used for many other purposes.

Blockchain application goes something like this:

- Somebody requires a transaction, for example changing a digital currency for money.
- That transaction is published on the whole network of computers, and the whole network creates an algorithm that allows the transaction to happen.
- Once the transaction (block) is approved, it's embedded in a chain of similar transactions.
- Once the transaction has been added to the chain it can't be changed in any way.
- The transaction is approved and that's it, what was requested is carried out.

An advantage of this way of money transfer is that there is no central bank that could be hacked, so the transaction can't be changed by an outsider. The whole system is decentralized and is built on thousands of simple users' computers. Another specific thing is that there are no transaction fees.

For example if you use your credit or debit card to pay in a store – the safety of your purchase is guaranteed for by the credit card company. They make sure that the store takes only the amount you think they'll take from your account, but they also guarantee to the store that they'll get their money.

The trick is that the credit card company takes a small fee from the store which finances their work.

Blockchain doesn't have anything similar. The system is decentralized, so there are no fees.

EXERCISE 1

Explore what digital currencies exist. What are the differences between them?
 How can you even buy a digital currency, and how can you use it to pay for something?

EXERCISE 2

Explore who is the founder of Bitcoin and inventor of blockchain.
 What can you find about him on the Internet?

Students in a small team research, discuss and present the results (exercise 1-3) in a joint presentation.

CONCLUSION

Pupils and teacher discuss and evaluate the presented solutions.

Methods

presentation
discussion
work on the text
graphic work
interactive exercise /simulation on the computer

Work forms

individual work
work in pairs
group work
frontal work

Material:

-

Literature

-

PERSONAL OBSERVATIONS, COMMENTS AND NOTES