

# A Greek Discovery

## Topic

Electricity

## Target group

School students aged between 8 and 14

## Working language

English and German (A1/A2)

## Contents

- Experiments, discoveries, improvements
- Amber experiment performed by the Ancient Greeks
- Elektron and electricity
- Kite experiment performed by Benjamin Franklin
- Invention of the lightning rod
- Electricity in daily life

## Objectives

The students can

- acquire new knowledge about the topic
- learn selected German words in context
- actively listen
- actively take part by thinking, speaking, and doing
- use the Internet as a source of information
- select and categorize information
- present results
- work in groups
- expand their skills through online learning (depending on how this is implemented in the classroom)

## Material

Christoph Biemann's film: A Great Greek Discovery

## Student materials

- My Words *A Greek Discovery*
- Answer sheet - My Words *A Greek Discovery*

## Time

60 minutes

## Realisation

Live-Online or Live in Classroom

## A Greek Discovery

Welcome the students and name the title of the session in English *A Greek Discovery* and in German *Eine griechische Entdeckung*.

Explain to the students that you will show a short film to the topic in several parts.

Tell the students that Christoph Biemann will be talking to them in the film, and that he presents *Die Sendung mit der Maus* in Germany, a children's TV show that has been popular for decades.

Show the students the program homepage and the mouse that stars in it.

Give the floor to Christoph, i.e. show the first sequence of the film (up to 01:09 - „... and finding out things makes life better, makes improvements.“

Next talk to the students about the context in which Christoph is using the words *experiment/experimentation*, *discovery/discover* and *improvement/making improvements*.

Ask the students to give examples of how they gain experiences, find out new things and always strive to make improvements.

Make a connection to the next film sequence in which Christoph explains how simple observations can result in ground-breaking discoveries.

Show the second sequence of the film (up to 02:57 - „So that was the first experiment with electricity.“)

Discuss with the students the balloon experiment that Christoph performs and invite them to do a similar experiment with salt and pepper.

### More about Christoph

[https://en.wikipedia.org/wiki/Christoph\\_Biemann](https://en.wikipedia.org/wiki/Christoph_Biemann)



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### More about the Sendung mit der Maus

[https://en.wikipedia.org/wiki/Sendung\\_mit\\_der\\_Maus](https://en.wikipedia.org/wiki/Sendung_mit_der_Maus)  
<https://www.wdrmaus.de>



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### Salt and Pepper Experiment

<https://www.komm-mach-mint.de/schuelerinnen/experimente/alle-experimente/mit-elektrizitaet-experimentieren>



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## A Greek Discovery

Ask the students to prepare the materials they will need.

Give the students instructions about how to perform the experiment and also do it yourself.

1. *Mix together the salt and pepper on the plate.*
2. *Rub the plastic pen vigorously against the woolen scarf/woolen pullover.*
3. *Move the pen slowly over the plate.*
4. *Observe how the grains of pepper jump up to the pen and stick to it.*

### Materials

- Plate
- Plastic pen
- half a teaspoon of salt
- half a teaspoon of finely-ground black pepper
- woolen scarf/woolen pullover

Ask the students to report on their observations and together try to explain what has happened.

### Explanation

„Rubbing the pen against the wool gives it an electric charge. This electric charge allows the pen to attract salt and pepper. Because the ground peppercorns are lighter than the salt, they jump up onto the pen first.“

### Source

<https://www.komm-mach-mint.de/schuelerinnen/experimente/alle-experimente/mit-elektrizitaet-experimentieren>



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Explain to the students that the Ancient Greeks did not follow up on what they experienced with amber (in Ancient Greek is called elektron). This is because it had no practical benefits for them. It was only many centuries later that scientists began investigating this phenomenon again.

Mention the name Benjamin Franklin, which the students will already be familiar with from American history, and ask them to research in groups (e.g. breakout session) what Franklin has to do with electricity.

Present the following key questions (e.g. on a slide):

- *When did Franklin live?*
- *In which areas did he mainly work?*
- *What did he discover with respect to electricity?*

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Ask the students to jot down the results of their research in bullet-point form and to report on them (e.g. main meeting).

Show the students the third sequence of the film (from 02:57 bis 04:00 - „He was a very clever man, this Benjamin Franklin.“), in which Christoph talks about Benjamin Franklin.

### Recommended Sources

<https://www.wonderopolis.org/wonder/Who-Discovered-Electricity>  
<https://kids.britannica.com/kids/article/Benjamin-Franklin/353147>



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Explain to the students that Franklin obtained some insights from his kite experiment that led him to come up with an important invention.

Ask the students whether they know or can guess what it is. Gather together the students' ideas (e.g. chat).

Show the last sequence of the film (from 04:00).

Ask the students to think about what they need electricity for in their daily lives.  
Use all the ideas to create a word cloud (e.g. Mentimeter).

### Recommended Source

<https://www.mentimeter.com>



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Talk to the students about how on the one hand electrification is becoming increasingly widespread, yet on the other more than a billion people still live without electricity.

Show them the map of the world in the source under „Die Elektrifizierung geht weiter“.

### Map

[https://praxistipps.focus.de/seit-wann-gibt-es-strom-elektrifizierung-im-zeitverlauf\\_98898](https://praxistipps.focus.de/seit-wann-gibt-es-strom-elektrifizierung-im-zeitverlauf_98898)  
Part "Die Elektrifizierung geht weiter"



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Provide the students with the sheet My words A Great Greek Discovery (interactive pdf).

## A Greek Discovery

Show the entire film again and ask the students to enter the German words into the sheet *My words A Great Greek Discovery*, either while watching or afterwards. Encourage them to draw a simple picture, symbol or the like next to each word to help them remember it.

Then ask the students to complete the sentences. These briefly summarize the topic.

Talk to them about how it is worth learning new words in context and memorizing short, interesting texts. Making relevant connections that can be easily recalled from memory is helpful when speaking freely.

**Further project:**  
History of Electricity

### Possible Source

[https://www.energiegeschichte.de/content/dam/revu-global/energiegeschichte/images/BilderNeu/DieAusstellung/Sonderausstellungen/BernsteinBlitzundBatterie/BBB\\_Begleitheft.pdf](https://www.energiegeschichte.de/content/dam/revu-global/energiegeschichte/images/BilderNeu/DieAusstellung/Sonderausstellungen/BernsteinBlitzundBatterie/BBB_Begleitheft.pdf)



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## A Greek Discovery

### My Words A Greek Discovery

#### English

#### Deutsch

#### Merkhilfe

discovery

experiment

improvement

the old Greeks

amber

electricity

thunderstorm

lightning

kite-experiment

lightning rod

invention

Eine griechische \_\_\_\_\_

Menschen machen schon seit mehr als einer Million Jahre \_\_\_\_\_.

Experimente bilden die Grundlagen für \_\_\_\_\_.

\_\_\_\_\_ haben beobachtet, dass Bernstein Federn anzieht, wenn man ihn an einem Tierfell reibt.

\_\_\_\_\_ heißt im Altgriechischen „elektron“. Elektron wurde später zum Namensgeber der Elektrizität.

In der Geschichte der \_\_\_\_\_ spielte Benjamin Franklin, der amerikanische Staatsmann und Naturwissenschaftler eine besonders große Rolle.

In seinem berühmten \_\_\_\_\_ ließ er einen Drachen beim \_\_\_\_\_ in den Himmel steigen.

Franklin wies nach, dass ein \_\_\_\_\_ eine Entladung statischer Elektrizität in der Atmosphäre ist.

Der \_\_\_\_\_ ist eine \_\_\_\_\_ von Benjamin Franklin.

## A Greek Discovery

### Answer sheet - My Words A Greek Discovery

English	Deutsch	Merkhilfe
discovery	DIE ENTDECKUNG	
experiment	DAS EXPERIMENT	
improvement	DER FORTSCHRITT	
the old Greeks	DIE ALTEN GRIECHEN	
amber	DER BERNSTEIN	
electricity	DIE ELEKTRIZITÄT	
thunderstorm	DAS GEWITTER	
lightning	DER BLITZ	
kite-experiment	DAS DRACHENEXPERIMENT	
lightning rod	DER BLITZABLEITER	
invention	DIE ERFINDUNG	

Eine griechische ENTDECKUNG

Menschen machen schon seit mehr als einer Million Jahre EXPERIMENTE.

Experimente bilden die Grundlagen für FORTSCHRITT.

DIE ALTEN GRIECHEN haben beobachtet, dass Bernstein Federn anzieht, wenn man ihn an einem Tierfell reibt.

BERNSTEIN heißt im Altgriechischen „elektron“. Elektron wurde später zum Namensgeber der Elektrizität.

In der Geschichte der ELEKTRIZITÄT spielte Benjamin Franklin, der amerikanische Staatsmann und Naturwissenschaftler eine besonders große Rolle.

In seinem berühmten DRACHENEXPERIMENT ließ er einen Drachen beim GEWITTER in den Himmel steigen.

Franklin wies nach, dass ein BLITZ eine Entladung statischer Elektrizität in der Atmosphäre ist.

Der BLITZABLEITER ist eine ERFINDUNG von Benjamin Franklin.