



CLIL method lessons scenarios

Scenariusze lekcji metodą CLIL.

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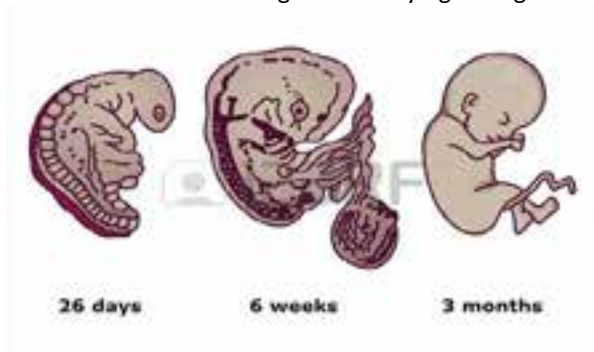
CLIL LESSON PLAN 1

1. TOPIC: How you began

2. AIMS:

To know:

- what is fertilisation and when it occurs
- what are the chromosomes and how many of them do we have
- what determines a baby's sex
- what are the stages of embryo growing



3. LANGUAGE:

vocabulary: EMBRYO, CHROMOSOMES, FERTILISATION, CROWN, CRUMP,

OVUM, SPERMATOZOID, PREGNANCY, PLACENTA, UTERUS, VAGINA, WOMB, LABOUR, FRATERNAL TWEENS, IDENTICAL TWEENS

verbs: to enable, to occur, to measure, to inseminate, to give birth, to swallow

4. MATERIALS:

- models of embryos (at 6, 12, 20, 24, 36 weeks of pregnancy)



- activity sheets for students
- video „How you began“

5. PROCEDURE:

1. Warm up:

- pre-teaching the vocabulary (like above)
- watching the video
- questions and answers activity about the video

2. Hand out the activity sheets:

- ss discuss and answer the questions:
 - What is the ovum and spermatozoid
 - Where does the fertilisation normally take place?
 - What substances enable cells to pass on to you some of your parent's characteristics?
 - How many chromosomes does a man have?
 - What determines a baby's sex?
- ss examine the models showing the embryos at 6, 12, 20 and 36 weeks of pregnancy and do the tasks:
 - Measure the models and make a graph to show the length of a baby in the womb at: 12, 20, 36 weeks of pregnancy (remember that babies in the womb are measured from crown to rump)
 - Compare and describe the differences between the smallest and the largest models:
 - Look at the size of the uterus, the size of the placenta and what can be seen on the baby's body
 - Examine the model showing the embryo at 6 weeks – which parts of the body are now formed and starting to form?
 - How many weeks after fertilisation does full-time delivery occur?
 - Construct a table to show when each of the following stages in fetal development occur:
 - the baby's heart starts to beat
 - the baby's fingers are visible
 - the baby's cartilage skeleton begins to turn into bone
 - the baby starts to swallow
 - the baby starts to hear

3. Follow up:

Discussion points:

- What should a mother try to avoid during pregnancy?
- Can the health of a pregnant woman affect the health of the fetus?
- What food and drink is good for a pregnant woman and her baby?
- What checks does the doctor make at the ante-natal clinic?
- Find out and describe the differences between fraternal and identical twins
- What are some of the signs of labour?
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CLIL LESSON PLAN 2

1. TOPIC: DNA extraction.



2. AIMS:

To know:

- how to extract DNA from the plants' cells
- that in plants, animals and fungi DNA is located mainly in the nucleus of the cell
- that it is necessary to break down the tough outer cell wall and emulsify the lipids in the cell and nuclear membranes
- that detergent breaks down the lipids
- that sodium ions in the salt neutralise the DNA so that it can precipitate out
- the role of DNA: in what way DNA is the recipe of life that is passed on from generation to generation

3. LANGUAGE:

vocabulary: INHERITANCE, NUCLEUS, DETERGENT, IONS, MEMBRANES, LIPIDS, PROTEINS, MUTATIONS, CELLULOSE WALL, PROTEASE ENZYMES, GENE, ETHANOL, SYRINGE

verbs: to extract, to emulsify, to neutralise, to precipitate, to dissolve, to filter

4. MATERIALS:

- activity sheets for students (with the stages and procedures of the DNA extraction)
- materials necessary for the experiment:
 - peas (about 50g) – can be frozen but thaw them first
 - washin-up liquid (10ml)
 - table salt (3g)
 - water (90 ml)
 - very cold ethanol (10 ml) – straight from the freezer
 - protease (enzyme) – 2-3 drops (optional)

- ice in a jug with cold water
- filter paper (like for coffee)
- plastic syringe 1ml, without a needle
- plastic funnel (large)
- boiling tube (or plastic graduated tube)
- glass rod for stirring

5. PROCEDURE:

1. Warm up:

- pre-teaching the vocabulary
- discussion points:
 - the role of the DNA in living organisms
 - DNA as the recipe of life that is passed on from generation to generation
 - location of DNA in cells (mainly in the nucleus)
 - how to break down tough outer cell wall
 - stages of DNA extraction
 - safety – ethanol in freezer (must be placed in a sealed, vapour-tight plastic container)

2. Hand out the activity sheets:

- preparation: place ethanol in a plastic bottle in a freezer at least 24 hours before attempting this activity
- timing: isolation of the DNA takes about 35 minutes, including an incubation period of 15 minutes
- activity:
 - dissolve the salt in 90 ml of distilled water, add the washing-up liquid and mix
 - mash the peas using the glass rod or spoon, add the pulp to a beaker with the salty washing-up liquid solution
 - stand the beaker in a water bath at 60 degrees for 15 minutes
 - cool the mixture (in cold water bath) stirring frequently
 - pour the mixture into a blender and blend it for about 5 seconds
 - filter the mixture into a second beaker
 - add 2-3 drops of protease (optional)
 - very carefully pour ice-cold ethanol down the side of the boiling tube to form a layer on top of the peas extract
 - leave the tube undisturbed for a few minutes:
DNA WILL PRECIPITATE INTO THE UPPER LAYER

3. Follow up:

- to make sure that the precipitate we obtained is really DNA (it can be also RNA) you would need to carry out a number of chemical tests – can you suggest types of chemical tests that you might carry out that would help you to decide?
- research one of two from the list and next week share with the rest of the class:
Gregor Mendel, Thomas Morgan, James Watson and Francis Crick, Herman Muller

CLIL LESSON PLAN 3

1. TOPIC: Charles Darwin – a natural tourist



2. AIMS:

To know:

- what Charles Darwin's expedition on HMS Beagle was for
- the value of observation in scientific discovery
- how living organisms are adapted to their environment
- how geographical isolation is leading to the formation of new species
- how has our experience of the natural world changed since Darwin's time

3. LANGUAGE:

vocabulary: SPECIES, EVOLUTION, ISOLATION, COMPARISONS, OBSERVATIONS,

ECOSYSTEMS, ENVIRONMENT, RARE, HABITANTS, DISRUPTION,

THREATENS, GEOLOGY, LANDSCAPE

verbs: to threaten, to adapt, to influence, to preserve, to contribute, to appear, to ban, to suit

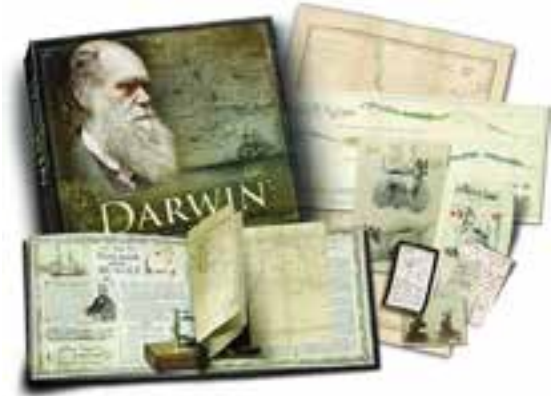
4. MATERIALS:

- activity sheets for students
- paper to produce poster
- ruler
- colouring pens, pencils
- access to a library or the internet

5. PROCEDURE:

1. Warm up:

- pre-teaching the vocabulary (like above)
- watching the video - short film about Charles Darwin and his theory of evolution
- discussion points:
- Darwin lived in a time when few people were fortunate enough to travel and see the world
- In some ways we can think of Darwin as a tourist – observing both the differences and similarities between places, organisms etc
- After his journey Darwin kept a scientific field journal covering biology, geology, anthropology with detailed notes about plants, animals, birds, insects etc



2. Hand out the activity sheets:

- Charles Darwin observed and made notes about the animals, plants, the geology.
- He was interested in how the animals and plants were suited to the environment in which they lived:

- Imagine that HMS Beagle had brought Darwin to your town or city, where he spent time studying the animals, making records in his journal

- Imagine also that Darwin has asked you to help him write some journal entries.
- Draw a table with the headings:
 - Name of plant/animal
 - Type of plant/animal (e.g. mammal, fish, amphibia etc)
 - Special features (e.g. something that helps it to live in the habitat)
 - You should allow eight rows.

- Discuss with your classmates which animals and plants you think have lived in your local area for a long time and fill in the table

- Now think about how you could use the living things listed to attract tourists – design a colourful and attractive poster (try to use the link with Darwin as a way of attracting people)

CLIL LESSON PLAN 4

1. TOPIC: Make your own fossils.



2. AIMS:

To know:

- what are fossils and how they have been formed
- that fossils are the evidence for evolution
- what is palaeontology
- what are the intermediate forms
- what are the stages of fossilisation

3. LANGUAGE:

vocabulary: PALAEOLOGY, FOSSILS, AQUATIC ORGANISMS, TERRESTRIAL ORGANISMS, REMAINS, FRAGILE, MORPHOLOGY, BONES, SOFT-BODIED ORGANISMS

verbs: to diverse, to preserve, to contain, to evaporate, to mineralise, to dissolve, to solidify

4. MATERIALS:

- activity sheets for students
- for the experiment:
 - a small, light plastic container to make the fossil in (e.g. yoghurt pot)
 - a sponge (natural or synthetic, with more holes work better)
 - some fine sand, enough to half-fill the container
 - bath salts (magnesium sulphate) or as an alternative can be mix of baking soda and table salt (bicarbonate of soda NaHCO_3)
 - a saucer or small tray

5. PROCEDURE:

1. Warm up:

- pre-teaching the vocabulary (like above)
- questions and answers activity - discussion points:
 - Fossils are the remains of long-dead organisms that have, over time been preserved

- and turned to stones
- All kinds of organisms can become fossilised – animals, plants, even bacteria
- Charles Darwin used the fossil record to provide evidence of his theory of evolution by natural selection
- Fossilisation is a gradual process whereby living material is replaced by minerals
- The use of fossils in comparative morphology – assessing in detail how different species resemble one another physically – provided evidence for evolution

2. Hand out the activity sheets:

This activity explores a process similar to the early stages of fossilisation – you will mimic this process by making a solution similar to groundwater and letting it solidify into fossil shape:

- create a shape from your fossil by cutting it out from the sponge – it could be a shell, a bone etc
- make 2 or 3 small holes in the bottom of your container, place it on the saucer or tray
- put some sand in the container about 1 cm of the way up, then place your sponge shape on top and cover with another 2 cm of sand
- mix 4 spoons of bath salts in 4 spoons of warm water and pour into your container, leave it somewhere safe and warm
- add more of the water and salt mix at least once a day for at least 5 days (the longer you leave it, the more the more fossilised it becomes)
- leave the sand to dry out for 2 days before removing the „fossil” sponge
- the holes in the sponge trap the salts, mineralising the sponge, as they dry out they solidify to create a fossil

3. Follow up:

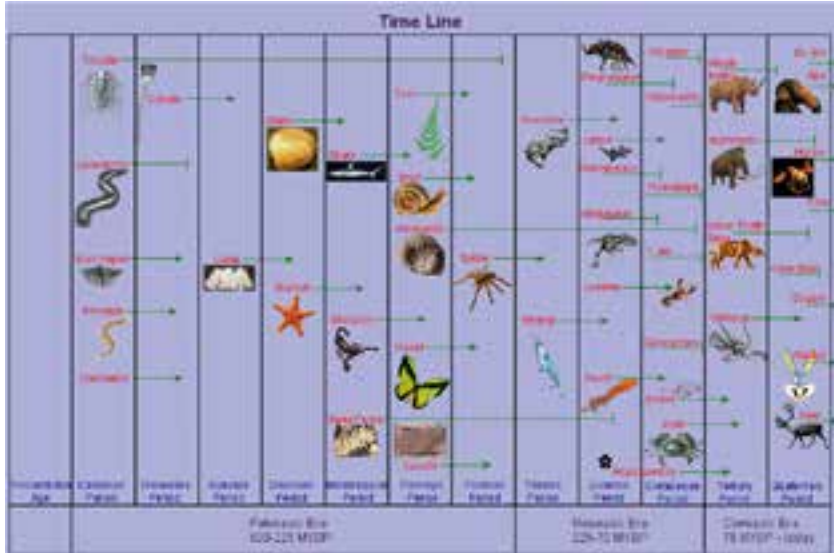
Discussion points:

- Decide whether what you are left with is the original sponge in a changed form or a new „print” of the sponge
- Do all living things that die become fossilised?
- Find out more about the real fossilisation process in animals with bones, soft-bodied animals and plants
- Research some of the key transitional forms that have been discovered, e.g.:
 - Archaeopteryx
 - Tiktaalik
 - Heteronectes



CLIL LESSON PLAN 5

1. TOPIC: Life in the past



2. AIMS:

To know:

- the major periods of the Earth's history
- position of the particular forms of life on the timeline
- what forms of life have disappeared (become extinct)
- the correct order of the geological periods

3. LANGUAGE:

vocabulary: PROKARYOTES, EUKARYOTES, MULTICELLULAR ORGANISM, NUCLEUS, RADIOACTIVITY, TIMELINE, NICHE, SPECIES, RADIOMETRIC DATING, FOSSILS, DINOSAURS

verbs: to evolve, to appear, to occur, to calculate, to measure, to elapse, to provide, to extinct, to capture

4. MATERIALS:

- activity sheets for students
- a pair of scissors
- sticky tape or a gluestick

CLIL LESSON PLAN 2: PARTS OF A PLANT LESSON

Learning Objective

After reading about the parts of a plant students will be able to identify each part and describe its function.

Vocabulary

Plants, fungi, monera, protista, stem, leaf, flower, seeds, roots

Lesson Materials

- Rectangular Cardboard Piece
- Green Markers
- Leaves
- Parts of a Plant Worksheet Printable
- Glue, Scissors, & Pencils
- Brown pipe cleaners
- Colored Construction Paper

Parts of a Plant Lesson Introduction

Read aloud from the [Parts of a Plant Worksheet](#). Older students can read directly from the worksheet lesson. Have students discuss:

- What are the three types of plants?
- What are the parts of a plant?

Ask your students about the lesson they have just read. Use the following questions as a guide:

- What is the plant cycle?
- What are the differences between the three types of plants??

Have students answer the questions after completing the reading on the parts of a plant. Once everyone has answered the questions have students exchange papers and grade them. Go over each answer and encourage students to ask questions.

Some questions may have a similar answer so make sure to emphasize this allowing every child to give the answer they believe is correct.

MINI PROJECT

Once students have completed the Parts of a Plant worksheet pass out pre-cut, rectangle cardboard pieces, green leaves that have been gathered prior to class, five brown pipe cleaners per student, and construction paper. Students will need the following art supplies: pencils, green markers, glue, and scissors.

The cardboard rectangle pieces should emulate the appearance of a plant stem. The green markers can be used to color the cardboard green. Have students be creative as they create their own plant. They can use the pipe cleaners as the tree roots, cut flowers out of construction paper, and glue leaves onto the stem. Each student should design something different. However, by putting each part of the plant together themselves they will be able to remember each part easily.

Closure

Have a discussion on the identification of the various parts of a plant. Ask the students to describe the importance of each part and what would happen to a plant that is missing a specific part. Pass out flowers you've picked or purchased and discuss how the flower will die without its roots now that it has been picked/purchased. The Parts of a Plant Plants are similar to humans. Just like us, plants need food, water, and energy (from sunlight) to survive. These things are called necessities. The parts of a plant, much like the body parts of a human, each have their own function in order to help plants to attain the necessities of survival. The plant kingdom is comprised of three main types. You've most likely seen each type of plant and haven't even realized they were a different type of plant. The three types of plants are: Plant, Protista, and Monera. The group of plants the fit the category of Protista are multi-cellular. This means they are made up of more than one cell. There are approximately 60,000 living species including algae. One member of the algae family is seaweed. Technically Monera is not a type of plant. However, the species that fit into the Monera group can be found on plants. Monera is bacteria. Bacteria are found on every living thing. Some bacteria are good and help ward off diseases. Other bacteria can be transplanted from plants to humans if the plant is touched by the human hand. These bacteria can cause diseases. The Parts of a Plant Every plant is made up of four main parts: roots, stem (or trunk), branches, and leaves. Life for a plant begins with a seed, turns into roots, and then expands to leaves, flowers or fruit to complete a cycle. Try to find each part of a plant by placing a seed on a cotton ball and watching it grow. Now let us see the parts of the plant one by one with their functions:

The Root



The root is the beginning and main source for the growth of a plant. The roots are very strong and help the plant to remain healthy. If the roots have a disease, normally the entire plant has a disease. Sometimes plant roots find their way to the surface where they can be seen. Those are called taproots, or shoots. In many plants, these shoots can turn into new plants of the same kind a few feet away. Some plant roots have several tiny hairy-like roots reaching out from the stem. If it looks like a bunch or clusters, they are called fibrous roots. Grass has a fibrous root system, as do onions. Some plants grow in marshy places and have a special type of root called respiratory or air roots. These plants do not normally root in the soil, but grow upon other living. Some of these plants are orchids, cattails, the Indian Pipe, and Rhizophora. The function of the root system is to attach the plant firmly to the soil. This is called fixation. The other function is to suck water and mineral salts from the soil. This is called absorption.

The stem

The absorbed water and mineral salts are carried to the rest of the plant through use of the stem. The stem is also responsible to carry the nutrients absorbed by the leaves to other parts of the plant. Leaves and roots will take in nutrients and disperse them throughout the entire plant. The stem also helps the plant to stand erect. Some plants have hard and strong trunks, while others are soft and flexible. There are still other plants that are too weak to be erect and normally travel across the ground such as a pumpkin. Other plants are weak, but need to have support and usually attach themselves to stronger elements. These plants include vines, tomatoes, and weeds, and are termed as climbers.

Leaf



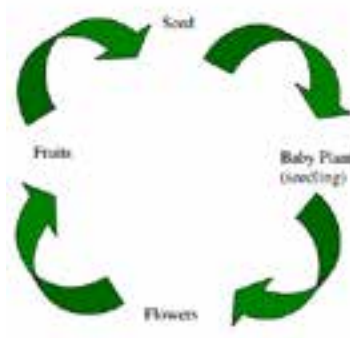
Have you ever observed a leaf? It is a very busy part of the tree. It is the chief food manufacturing organ of a plant. The typical leaf consists of a stalk (petiole) and a blade the thin, flat, expanded Part of the plant. It is normally green in color in the mid-term of the season’s cycle. When the days become shorter, they begin to turn into fall colors. The green indicates the presence of the chemical chlorophyll and while it is green, it manufactures food using the sun, water and a gas called CO₂. The lower side of the leaf has many tiny openings called stomata. Air enters the leaf through stomata. The leaf takes CO₂ (carbon dioxide) from the air, which is its main nutrient. The process by which plants prepare their own food from air, water and sunlight is called photosynthesis. Since leaves are the main part, they are better known as the food factory

Flowers, fruits and seeds: There are two types of flower plants, flowering and non-flowering. Flowering plants include Roses, jasmine, tulips, trees and wildflowers. Non flowering plants include ferns, algae, grass and some weeds.

Examples of fruit trees that are flowers are apples, oranges, peaches and pears. Plants on the ground can also have flowers that turn into fruit or vegetables like the watermelon, or pumpkin. Inside the fruits and vegetables are seeds. These seeds are used to start a new plant that will grow into a fruit or vegetable just like the parent plant. This process is called germination.

Plant Cycle

Flowers change into fruits and fruits have seeds inside them. Seeds grow and turn into plants and this is known as the plant cycle. The plant cycle goes from a seed to seedling (baby) to flowers, to fruits, and back to seeds again.



Parts of a Plant Worksheet

1. What are the two types of roots? _____
2. Where are roots found? _____
3. What are stomata? _____
4. Why are leaves called the food factory of plants? _____
5. What are the four stages in the life cycle of plants? _____

Fill in the blanks:

- 1.The _____ are not seen above ground
- 2.Seeds are produced by _____
- 3.Name the different types of roots. _____

- 4._____ is the chief cook of the plants

Name these:

- 1.The tiny openings in a leaf are _____
- 2.The type of root seen in a grass plant is _____
- 3.The flat part of the leaf is the _____
- 4.The gas that plants use for making food: _____

Answer Key –

Parts of a Plant

- 1.The two types of roots are taproot and fibrous root.
- 2.The roots are found under the ground.
- 3.They pores present in the leaves are called stomata.
- 4.A plant’s food is made inside the leaf. Hence, it is called food factory of plants.
- 5.The four stages in the life cycle of a plant are seeds, baby plant (seedlings), flowers, and then the fruits for which the tree has its purpose.

Fill in the blank:

- 1 The (roots) are not seen above ground
- 2.Seeds are produced by (fruits and vegetables)
- 3.Name the different types of roots. (taproots and fibrous)
- 4...(Leaves) are the chief cook of the plants

Name these:

- 1.The tiny openings in a leaf are: (stomata)
- 2.The type of root seen in a grass plant is (fibrous root)
- 3.The flat part of the leaf is the (leaf blade)
- 4.The gas that plants use for making food: (carbon dioxide)

CLIL LESSON PLAN 1: Viruses

Objectives

Students will understand the following:

- A virus is an infectious organism that reproduces within the cells of an infected host.
- A virus is not alive until it enters the cells of a living plant or animal.
- A virus contains genetic information wrapped in a protein coat.
- Viruses can be useful as well as harmful.
- A virus that mutates ensures its own survival by making itself unrecognizable to immune systems and vaccines.
- Even viruses engineered for useful purposes can be harmful if unchecked.

Materials

For this lesson, you will need:

- Computer with Internet access
- Research materials on viruses
- Research materials on local weeds in your area

Procedures

1. Review with your students what they know about viruses. Be sure they understand that viruses occur in plants, as well as animals. (You might cite the tobacco mosaic virus, which kills tobacco plants.)

2. Tell your students that they are going to work on a project in which they will suggest a useful purpose for a virus, but first they need to know more about how viruses work.

3. Have students use print research materials and the Internet to add to their knowledge about viruses. (See Vocabulary and Links.) Students should understand the following before they continue with the activity:

- A virus is an infectious organism that reproduces within the cells of an infected host.
- A virus is not alive until it enters the cells of a living plant or animal.
- A virus contains genetic information wrapped in a protein coat.
- A virus that mutates ensures its own survival by making itself unrecognizable to immune systems and vaccines.

4. Divide your class into groups. Ask group members to imagine that they are part of a team of scientists assigned to stop a local weed epidemic by genetically engineering a virus that will target a local pest plant, or weed.

Discuss with the class how such a way of using a virus, while useful in some ways, could create dangers to the environment. Challenge students to suggest ways of safeguarding against such dangers.

Allow time for students to research the names and characteristics of local weeds, if necessary.

Instruct groups to perform the following tasks to complete their assignment:

- Make a sketch of the target weed.
- Make a sketch of how the virus will look.
- Make a series of sketches showing the stages in the virus's life cycle and the end result of its infection.
- Describe safeguards you would take to keep the virus localized, make sure it isn't harmful to animals or nontarget plants, and ensure that it doesn't persist in the environment once the weeds are gone.
- Make a display of your invention and post it in the classroom.

Discussion Questions

- 1.Explain the way in which a virus is able to reproduce and cause disease in a host.
- 2.Explain how World War I contributed to the flu pandemic of 1914. If there were no war, what probably would have happened to the flu strain? Give supporting statements to back your explanation.
- 3.Compare and contrast the work of Edward Jenner to that of Jonas Salk. How can the triumphs of these two virologists set an example for modern scientists researching new threats?
- 4.How might viruses help cure genetic diseases?
- 5.Describe two instances from the documentary in which disease was used as a weapon. How effective were the weapons? Is this practice still in use today? What are some of the potential consequences of using viruses in this manner?

How might the destruction of rain forests help spread new viral diseases?

Vocabulary

Click on any of the vocabulary words below to hear them pronounced and used in a sentence.

Adversary: One who opposes, especially with animosity

Virus: Infectious organism that reproduces in the cells of an infected host. Viruses are not alive until they enter cells of the body where they grow and reproduce, causing viral illnesses.

pandemic: Occurring or prevalent over a wide geographic area as a disease; widespread.

vaccine: Medication used to provide immunity by vaccination. Vaccines are given mostly by injection or by mouth.

Antibody: Proteins created in blood and body tissue by the immune system to neutralize or destroy sources of disease.

Standards

Mini project

Viruses make a model

LESSON PLAN

Subject: SCIENCE – Biology

Topik: Vertebrates, From FISH and FROGS

Age of students: 16-17

Language level: B1/B2

Time: 90/120 minutes

CONTENT AIMS:

After completing the lesson, the student will be able to:

- Identify the parts of frogs.
- Describe the life cycle.
- Illustrate the life cycle of frogs.
- Explain how the evolution works.
- Compare the life in water and land.
- Prepare a simple aquarium.
- Keep journals or records of scientific investigations
- Use graphic organizing tools.

Language aims:

After completing the lesson, the student will be able to:

- Apply the correct scientific language.

CLIL MultiKey lesson plan

- Use scientific inquiry through questioning, predicting, observing, recording and interpreting data, and communicating results.
- Develop group work skills such as working together and listening to each other

Pre-requisites:

- Biology of organisms and their structures.
- Introduction to the interactions between organisms
- Structural and functional mechanisms underlying life processes and organ systems in vertebrates
- Evolutionary approach to the study of vertebrate structure (Comparative vertebrate Anatomy)
- Developmental processes of animals, including reproductive cycles, gametogenesis, fertilization
- Taxonomy

Materials:

- Books
- Computers
- Aquarium in class for tadpoles, with rocks and plants
- Magnifying glass

Procedure steps:

TEACHER activity:

- A Frontal lesson
- B Supporting observations of the life in the aquarium
- C Supporting discussion with students

STUDENT activity:

- Capture of tadpoles in a mountain pond
- Taking of water, rocks and plants from the pond
- Review instructions on how to set up an aquarium and care for tadpoles.
- Preparation of a simple aquarium
- Feeding the tadpoles and control of temperature and light in the aquarium
- Observation and discussion

Materials that could be used as homework assignments or tests:

- Scientific Relation about experiment in Laboratory

Students posing questions, hypothesizing, observing, collecting and recording data, and communicating results

EXERCISE:

Questions and answers that reflect an understanding of what tadpoles need to survive, as well as an understanding of the life cycle of frogs.

Example:

- You are planning to use a tank as a Model Pond to study tadpoles.
- Describe two ways using the Model Pond instead of a real pond might affect the tadpoles.
- In your description, be sure to:
 - Describe two ways the Model Pond is different from a real pond.
 - Describe how each difference could affect the tadpoles

LESSON PLAN FORMAT FOR A CLIL LESSON:

MATERIAL FOR TEACHER'S WORK

- Blackboard
- Interactive Digital Board
- Power Point Presentation
- Posters

MATERIAL FOR PUPILS:

- School material (notebook, pen/pencil, crayons, colour cards...)
- Microwave oven
- Ice
- Freezer
- Water
- Plastic bags
- paper towels

CONTENT OBJECTIVES:

With the completion of the Unit students will be able to

1. Learn what water is and how water changes state.
2. Know what the water cycle (Both urban and natural) consist of.
3. Understand and explain how water is recycled throughout the natural water cycle and learn about contamination..
4. Relate the change of states to the different levels of the water cycle.
5. Define the most important processes involved in the water cycle (evaporation, condensation, precipitation and collection)
6. Characteristics of water
7. Uses of water

LANGUAGE OBJECTIVES:

Language Obligatory:

Students will

1. Acquire key vocabulary:
2. Group new words into the semantic family of water related words. River, sea, lake, pond, spring, fall, puddle, flake, ocean, creek, faucet, leak, fountain, waterfall, cloud, boiling, lagoon...

ELEMENTS INVOLVED IN THE WATER CYCLE:

Sea, river, lake, rain, fog, hail, snow, ice, water, cloud, ocean, sun, droplet, mountains, valley, Icicle, thunder, lightning, storm... .

VERBS:

to evaporate, to condense, to freeze, to melt, to change, to form,
to heat, to drop, to cool, to fall, to snow, to rain, to hail

STATES:

liquid, solid, vapor, gas.

TEMPERATURE AND SIZE ADJECTIVES:

hot, cool, freezing, Warm,

cold, big, small...

3. Use present simple/ present continuous to describe, define and explain
the processes involved in the water cycle.

4. Use effectively zero conditional sentences for cause/ effect processes.

5. Use correctly the structures:

6. Use comparative forms of the adjective: bigger than/ smaller than....

7. Use the superlative: The biggest/ the smallest...

Language Compatible:

Students will be able to:

1. Understand the language of describing, defining and explaining the
processes involved in the water cycle.

2. Understand the percentages collocation.

3. Understand more specific vocabulary thanks to context.

INSTRUCTIONAL STRATEGIES:

Brain storming: (Using pictures to prompt them if necessary) Useful to give us
indicator of their previous knowledge and start grouping those words in Semantic
fields.

Semantic families. Students will decide which words to include on what groups.

Adjectives: Temperature, water properties (transparent, odourless, tasteless...),

capacity (litre, cubic litres, cubic centimetres...) and measurements

Static verbs/ action verbs: To be/ to fall, to rain, to flow, to rush, to gush...

CULTURAL OBJECTIVES:

Students will :

- Be conscious of the influence of water in the history and cultural behavior of people and in their quality of life.
- Understand that Water is present in many cultural, historical, religious and literary aspects of a country.

- Become aware of the importance of water for everyday life.

MAKING CONNECTIONS:

Crosscurricular extensions

Math

Explaining volume and how to measure it.

Hands on problems: “getting wet” Bring a big bucket of water and different containers (plastic bottle, yoghurt container, can, actimel pet...) and measure their capacity. Compare and fill in a chart.

Music:

Making music through water (Activity on Anex II: Water chimes): listening to music made with water (Playing with a virtual water bottle xylophone:

<http://www.philtulga.com/water.html#virtual>)

Literature:

Students are still working in three groups.

Each group will prepare and act a different poem related to the topic.

For example: Water (Rain)

Water, water everywhere, water all around,

Water in the ocean, water in the ground.

Water in a river, water in a creek,

Water in a faucet with a drip-drip leak!

Water in a fountain, water in a lake,

Water on a flower, as day begins to break.

Water from a waterfall, rushing down from high,

Water from a dark cloud, raining from the sky.

Water boiling hot, water frozen ice,

Water in a blue lagoon, clean and clear and nice.

Water at a fire, gushing through a hose,

Water in a garden, so every flower grows.

Water for the animals swimming in the sea,

Water, water everywhere for you and for me

Introduction and practice

Lesson1

Activity 1) As an introduction of the unit we put the title of the unit: “the water cycle” on the

blackboard and draw clouds, a river, a lake, a pond, the sea...and we do a brainstorming in order to know how much they know about it. We direct the brainstorming so we get all the vocabulary needed for the unit.

Once we clarify all the vocabulary for everybody we make a general introduction of the unit explaining the contents.

We can cut out words and make different shaped posters (cloud/ mountain/ ocean/ lake...) where to stick the words. Also if we are lucky enough and it is raining that day we can just show them looking out of the window!!

Activity 2) Exposition of the power point: "Water cycle" And showing the short video: (Water boy we will rock you)

http://www.youtube.com/watch?v=_VGoE5Gcy-A&feature=related

We explain the process prompting them to help with the vocabulary they already know(or should know) and quizzing them to assure they understand. Then they can quiz each other working in pairs or in small groups.

Activity 3) Concreting concepts: We ask them to write down on their notebooks these concepts in red. They should answer the questions individually first and then we complete a big poster on the board with the whole class. The result should be something like this:

- Why do we need the water cycle?
The Earth is covered by water, however, almost 97% is salt water found in the oceans. We can not drink salt water or use it for crops because of the salt content. We can remove salt from ocean water, but the process is very expensive.
- How many processes make up the water cycle?

There are six important processes that make up the water cycle.

1. Condensation - A gas changes into a liquid: for example when it is very cold outside and we are in the car sometimes you can "draw" on the window glass. (This is because of condensation)

2. Infiltration - Infiltration is an important process where rain water soaks into the ground, through the soil and underlying rock layers. (Bring a bucket with water and a sponge to show if necessary)

3. Runoff - Much of the water that returns to Earth as precipitation runs off the surface of the land, and flows down hill into streams, rivers, ponds and lakes. (Make your sponge "rain" over an upside down bowl so water runs off it!)

4. Evaporation – The opposite to condensation. the process where a liquid, in this case water, changes from its liquid state to a gaseous state. (Ask them to tell you how this could occur)

5. Precipitation - When the gas water condensed in the clouds becomes small droplets of water that turn into larger droplets and precipitation (rain) occurs. The raindrops fall to Earth.

6. Transpiration - As plants absorb water from the soil, the water moves from the roots through the stems to the leaves. Once the water reaches the leaves, some of it evaporates from the leaves, adding to the amount of water vapor in the air. This process of evaporation through plant leaves is called transpiration.

Activity 4) We give them a sheet of paper with this photocopy that they will stick on their notebook. They should draw the change of the cloud on their notebook.

<http://www.biology.ualberta.ca/facilities/multimedia/uploads/alberta/watercycle.html>

Lesson 2

Content practice: hands on water!

Activity 1) If there is a kitchen in the school we take the children to the kitchen. Otherwise we can bring a camping gas and a pot or a microwave oven to the class and some ice as well.

We divide them in groups . Every student will take a piece of ice and they will put it in a glass of water. In groups , we will then put the glasses in the microwave and warm them. With this process children will see fusion. When all of them have melted, we will talk about the fusion and temperature, and the children will have to explain what happened with the ice.

Activity 2) In groups again, we will put the glass in the microwave and boil the water so they will see the vapor of water: cover the glass with a small plate so they will appreciate the drops of water forming on the plate. What is the name of this process? Explanation and consolidation of ideas.

Activity 3) If there is a freezer at the school , the groups will put all the water left on the in a plastic bag and store the plastic bag in the freezer again. We will leave it there and in the next lesson we will come to check what happens. If there is no freezer, they can do the same individually in their houses as homework and bring their ice the following day....

Lesson 3 (Practice and consolidation)

Activity 1) Go to the kitchen again and have a look of the Kitchen again and check in the freezer how water is now. Or get their own ice cubes. We review the

whole process again with the help of our poster.

Activity 2) We go back to the class and they work in groups. Each group gets one copy of the different poems cut out into stripes. The teacher reads the poems out loud and the students have to recognize the verses and put them in order.

Activity 3: The students are given the different words in cards and they have to find the words in the poems, the group that finds all the words first gets to choose the poem they want to work with first.

Activity 4: (Language and literature)The students will turn the poems into posters, using calligrams or simply drawing the words and the corresponding pictures. While they do this, the teacher walks around asking them about the words and the water cycle process. At the end they will have a reciting contest and each member of the group will memorize a part of the poem or all of it.

If they don't have enough time to finish it in class they can do it at home as homework or in their spare time in the school. Because they will show the result to the rest of the class in the next lesson.

CLIL LESSON PLAN 3: RECYCLE

Content

Recycling

Vocabulary

Garbage: Things that you throw away because you do not want them

Environment: The situation that you live or work in, and how it influences how you feel

Earth: The planet that we live on

REDUCE: to make something less

REUSE: To find a new use for something so that it does not have to be thrown away

RECYCLE: To put used paper, glass, plastic, etc through a process so that it can be used again

Paper: Thin, flat material used for writing on, covering things in, etc

Glass: A hard, transparent substance that objects such as windows and bottles are made of

Plastic: A light, artificial substance that can be made into different shapes when it is soft and is used in a lot of different ways

Preparation

Prepare one copy of the worksheet per pupil. Alternatively, in the spirit of recycling, copy (or project) the worksheet on the board and get pupils to copy it in their notebooks or on the back of a used sheet of paper.

Procedure

Ask pupils what they know about recycling. Brainstorm on the board types of materials that can be recycled. Pupils may need help with this vocabulary (E.g. paper, plastic, metal, glass).

Give out the worksheet to pupils and ask them to write as many things as they can think of made of these materials (e.g. bottles, magazines, boxes etc). "Other" could include clothes or vegetable waste (biodegradable) depending on the facilities in your area. This can be done with pupils working individually, in pairs or in groups.

Collect their ideas on the board and make sure that all pupils have a good list of recyclable items on their worksheets.

Tell pupils to talk together in groups about how to recycle these things and what problems they will have. Monitor and help with vocabulary and ideas.

Pupils take their lists home and for one week keep count of how much they (or their families) recycle. You might want to give pupils stickers to put on the sheet every time they recycle something. Tell pupils to bring their worksheets back next week.

Next week see which pupil recycled the most. You might like to give the winner a green prize, for example a small bag made from recycled materials.

PROJECTS

recycling projects are always cool, especially when you can turn your trash into something new and useful. We talking about ways to recycle before, The PET plastic that most plastic beverage bottles are made of is a fairly useful material – it's resilient, flexible, transparent and food safe. As such, there are probably countless applications for these bottles that will give them second lives. WHAT CAN WE DO FOR IT?

Extension

Pupils can go on to write about their experience of recycling – what, when and how they did it. You could even set up a school project – get pupils to brainstorm how to do it.

RECYCLE WORKSHEET

Name:Date:.....

Directions: Reduce, Reuse, and Recycle.

Three great ways you can eliminate waste and protect the environment. Draw a picture or write ways that you can Reduce, Reuse, and Recycle in the columns below.

REDUCE	REUSE	RECYCLE

Physics

The Moon- our natural satellite

The aims of the lesson: Students are able to explain:

- the cause of the Moon phases
- why the Moon looks different in different phases,
- the mechanism of the Moon and the Sun eclipse.

Teaching methods used during the lesson:

- teacher centered,
- problem solving,
- activating.

Teaching aids:

- presentation The Moon- natural satellite of the Earth -<http://scholaris.pl/resources/run/id/107024>,
- the film – the sky observation- <http://scholaris.pl/resources/run/id/105327>,
- slides- Moon phases- <http://scholaris.pl/resources/run/id/105326>,
- the schemes of shadow and penumbra appearance- http://static.scholaris.pl/resource_imp/107/107025/PLIKI_1/spe_ore_f_04_01.jpg,
- the film- the eclipse of the Sun and the Moon- <http://www.dlanauczyciela.pl/161,film-2.flv>,
- the film - the Moon phases- <http://www.dlanauczyciela.pl/161,film-1.flv>.

The lesson :

1. Before the lesson starts the teacher checks the register and prepares teaching aids.

2. Short introduction to the lesson. The following revision questions are asked:

- Why do we see the Moon? Does it shine with its natural light? ; with the usage of multimedia projector the teacher show the presentation-“ The schemes of shadow and penumbra appearance” and asks the students to point the area where the shadow and penumbra appears.

3. Using the multimedia projector students watch the following films: “The Moon phases”, “The sky observation” then the teacher shows the slides connected with the Moon phases and the presentation “ The Moon – our natural satellite”. The teacher points out the most important pieces of information.

4. Using the multimedia projector the teacher show a film about the eclipse of the Sun and the Moon and sums up the phenomena presented in the film.

5. As a follow up to this class the students are asked to check when the next total eclipse of the Sun and the Moon will appear and where it will be observed. The students also check when the next eclipse of the Sun or Moon will be observed in Poland.

6. The students are required to check the following page: fizyka.zamkor.pl/wirtualne_observacje there are three animations connected with the topic, for homework the students do the exercises from the page.

Exercise 1.

After watching a film describing total eclipse of the sun change the place of observation in the menu of the Stellarium program. We are now in the following place in the south of Poland longitude E 20 degree, latitude N 49 degree and set the date 13th July 2075 6 a.m. This day the Moon is the furthest from the Earth and its

How do we measure the distance from the Earth to the Moon, the other planets and the stars?

Aims :

the student:

- is able to describe the rule of measuring the distance from the Earth to the Moon, or to the other planets based on geocentric parallax
- is able to describe the rule of measuring the distance from the Earth to the stars based on annual parallax
- knows the phenomenon of astronomical unit and the light-year

Metody pracy :

- teacher centered,
- training,
- activating.

Teaching aims:

- <http://fizyka.zamkor.pl/kategoria/66/wirtualne-observacje-astronomiczne> - watching an animation „*How to measure the distance from the Earth to the Moon – geocentric parallax*”;
- The photo of:
- the phenomenon of the parallax ;
- geocentric parallax;
- heliocentric parallax.

The lesson :

- The teacher prepares the teaching aids in advance.
- Introduces the units used in astronomy of the of astronomical unit, parsec and the light-year.
- Using the multimedia projector the teacher explains the phenomenon of the parallax and explains where it is used.
- Using the multimedia projector the teacher explains the phenomenon of the geocentric parallax.
- Using the multimedia projector the teacher explains the phenomenon of the heliocentric parallax.
- The students solve the following tasks.
 - Exercise 1. The star Sirius is 5,85 light-year from the Earth. Give the distance in parsecs and measure the heliocentric parallax.
 - Exercise 2. The distance between the laser devices located in the Earth and the reflector device in the Moon is $d = 384400$ km, count the time which passes from sending the laser beam to reaching the Earth surface by the reflected beam.
 - Exercise 3. The star Proxima Centauri is the nearest star (except the Sun). We can see it on the north hemisphere. Its parallax is $0,769''$. Measure the distance from this star to the Earth and present the result in parsecs and light-year units.

The first space velocity.

Aims : the student :

- knows the concept of the first space velocity
- knows the formula on the the first space velocity
- counts the first space velocity for the Earth and other orbs
- describes the movement of the artificial satellites around the Earth
- explains the difference between the artificial satellites and geostationary satellites

Teaching methods :

- teacher centered,
- training,
- activating.

Teaching aims :

- application „Space velocity” „Prędkości kosmiczne’ (www.edukator.pl/Predkosci-kosmiczne,8047.html),
- application „The Satellite ” „Satelita” (www.edukator.pl/Satelita,8375.html),
- application “The orbit” „Orbita geostacjonarna” (www.edukator.pl/Orbita-geostacjonarna,8376.html),
- application “Geostationary satellites” „Satelity geostacjonarne” (www.edukator.pl/Satelity-geostacjonarne,8048.html).

The lesson :

- Introducing the topic by asking the following questions: How does horizontally thrown body behave? What happens with the range of the throw when we increase the velocity?
- A multimedia projector to use a computer program “ Space velocity” to demonstrate different trajectory of the body thrown from the Earth surface with different velocities. Combining the changes observed with the velocity of the thrown object.
- Introducing the concept of the first space velocity.
- Introducing the formula on the first space velocity
- Counting the first space velocity for the Earth
- Counting the first space velocity for different orbs- group work
- Introducing the concept of the artificial Earth satellite or geostationary satellite
- A multimedia projector to use the following computer programs:” The Satellite”, “Geostationary satellites” and “ The orbit” to demonstrate the movement of the artificial Earth satellites around the Earth.
- Brainstorming: In what way do we use satellites?
 - Exercise 1. The radius of the orbit of the stationary communication satellites located above the equator is $r = 42000$ km. Is it possible for such satellites to be located nearer or further the center of the Earth? Explain your answer.
 - Exercise 2. Prepare your own materials to prepare a presentation about the artificial Earth satellites or space travels. Project-based learning, group-work.

Topic: How to measure sound.

The student knows:

- how to compare the frequency of the vibrating physical body emitting sound, on the basis of the pitch of this sound
- on the basis of the frequency given how to calculate the frequency and the period of the vibration of the physical body
- how to measure time and frequency on the basis of the graphic diagram
- knows the relation between colour of the sound and the difference in the graphic description of the sound emitted by different instruments
- how to compare the length of the sound wave on the basis of the graphic description

During the lesson the following equipment is needed:

- pitchfork with a resonation box
- a guitar, a flute or other instrument
- a microphone, an oscilloscope, a system which cooperates with a computer or a graphing calculator

The lesson:

The teacher starts the lesson with asking the following questions:

1. Which bodies emit sound?
2. What are the characteristic features of sound?
3. Which physical body emits sound of a different tone?
4. When two physical bodies have different tone?
5. What is the phenomenon of spreading of sound in the air?
6. Why in the vacuum is there no such a phenomenon?
7. Explain the phenomenon of the length of sound and the frequency of the sound?
8. Why is the sound wave called longitudinal wave?

Examining of sound:

1. The teacher carries out the following experiment: Experiment 1
2. The graphic description is analyzed, joining the upper and lower part of the diagram with the thickening and thinning of the air
4. The students describe the period and the frequency of the sound on the basis of the diagram
5. The teacher introduces the unit of frequency 1Hz
6. The students record and compare the sound produced by the pitchfork and the guitar, on the basis of the two diagrams explain the phenomenon of tone of sound and the colour of sound
7. The registration and comparing of sound produced by two guitar strings. Discussing the relation between the pitch of sound and the the frequency of the vibration of the source of sound
8. Explaining the relationship between the length of sound wave and the distance between the vertexes of a curve on a diagram. On the basis of a diagram students can see the period of the vibration not the length of the sound wave.

Sound wave as a source of energy.

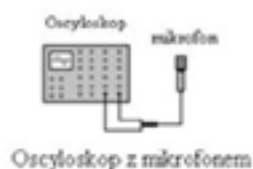
1. Students record two sounds of the same pitch and colour , but of different sound volume. They are able to explain the correlation between the amplitude of the vibration and the sound volume.
2. Showing on the examples that the sound wave is the source of energy
3. Explaining the correlation between the energy of the sound wave and amplitude of the vibration and frequency

The velocity of the sound wave emitted in the air

- Students measure the distance of the lightning hit if the sound effect (thunder) is heard a few seconds after we see the lightning

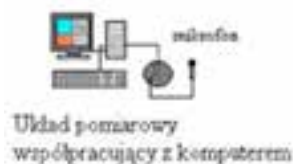
Experiment 1

Join an oscilloscope and an inductive microphone- slot Y. This way of measuring sound has a serious disadvantage namely it cannot be recorded permanently. The experiment needs to be repeated a few times and the students need to remember the shape of the graph. However we can adjust the time period and the sensitivity of the instrument



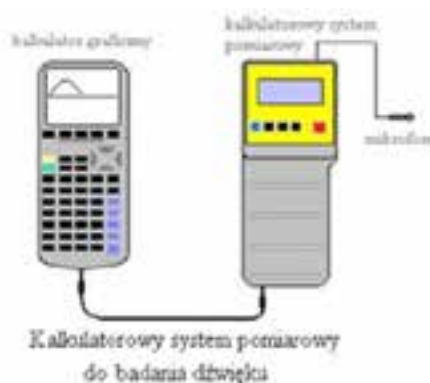
Experiment 2

Join a computer and a proper measuring system. The results achieved in this way are in a form of a graph or diagram.

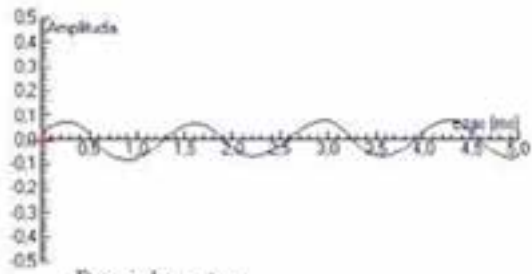


Experiment 3

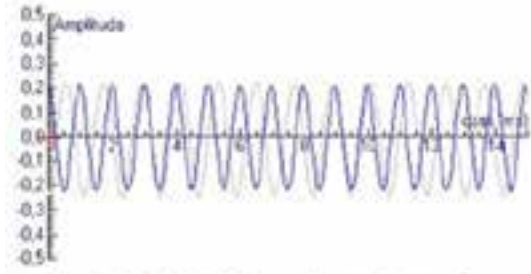
Similar results are obtained by means of a graphing calculator and a proper measuring system which enables different physical measurement using a lot of probes. If you join it with a microphone you can see the visual picture of sound.



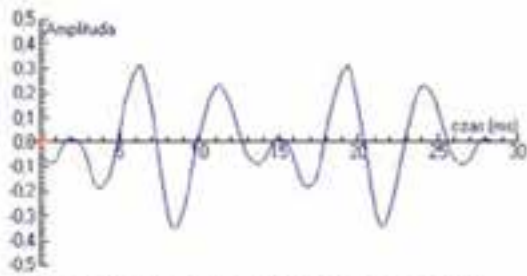
The graphs needed:



Drgania kamertonu



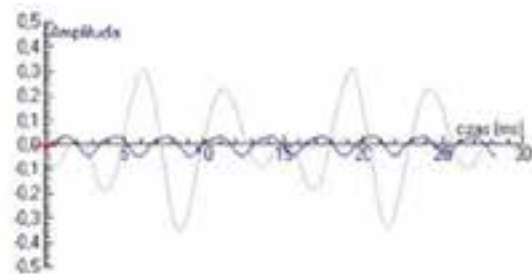
Zapis dwóch dźwięków wydawanych przez flet



Zapis dźwięku wydawanego przez strunę od gitary



Zapis mowy ludzkiej



Zapis dźwięku wydawanego przez strunę cieniłą i grubą gitary.

Topic: Body inertia

Work method:

- experimental,
- problem solving

What is needed: a coin, sheet of paper, plastic mugs, magnets, a pin board, felt tip pens

Coloured drawings prepared earlier by the teacher:

- six vector arrows (velocity- yellow arrow)
- four vector arrows (acceleration- red arrow)
- four vector arrows (force- white arrow)
- four containers of the same size on wheels
- two flat identical blue liquid surfaces (horizontal)
- two identical symmetrically declined blue surfaces
- a picture of a bus (a- the bus is standing; b- the bus is moving with the same speed, uniformly accelerated motion)
- a picture of a bus with the people falling backwards (a situation in which a bus speeds up urgently)
- a picture of a bus with the people falling forward (a situation in which a bus brakes suddenly, slows down)
- Signs in English:

INERTIA, (v) VELOCITY, (F) FORCE, (a) ACCELERATION, (m) MASS

Aims of the

The student;

- knows that unpredictable force which has an effect on the body changes the acceleration arrow
- knows that in order to move the body net force is needed
- knows the Newton's first dynamic law
- can give the examples of the body inertia in everyday life
- knows why the drivers need to fasten seatbelts while driving
- knows why airbags are used in cars
- knows why special children car seats are used
- knows the safety rules connected with using overhead car compartments

The new vocabulary

- INERTIA, (v) VELOCITY, (F) FORCE, (a) ACCELERATION

The lesson

What teachers and students do	Tips
<p>Introduction:</p> <p>What measures are needed to describe a physical body in the move?</p> <p>The students give physical measures such as acceleration, velocity and force on the board</p> <p>F- force(N), v - velocity (m/s), a - acceleration (m/s²),</p> <ul style="list-style-type: none"> • above (F, v, a) they draw a symbol of vector arrow „→” 	<p>Discussion</p> <p>Students use the flesh cards with the English names of the physical measures : (F) FORCE, (v) VELOCITY (a) ACCELERATION</p>

<p>The students do the experiment with a coin</p> <ul style="list-style-type: none"> • they make notes of their observation • compare their observation with their peers • conclude by writing that they observed the phenomenon of the body inertia 	<p>Students compare their results using English.</p>
<p>The students watch a film about body inertia. The film is in Polish</p> <p>The students describe the drawings</p> <ol style="list-style-type: none"> 1. The cart is standing, water doesn't spill out 2. The cart is moving in uniformly accelerated motion, water doesn't spill out 3. The cart is accelerating, water spills out 4. The cart brakes, water spills out. 	<p>Film nr 2 CD Ciekawa fizyka.</p>
<p>Students read a fragment of a text about body inertia in the bus.</p>	<p>Ciekawa fizyka Cz .2. s.67 wiersze 9-16. ...Bezwładność sprawia, że w gwałtownie ruszającym autobusie pasażerowie i różne nieprzymocowane przedmioty poruszają się do tyłu względem pojazdu. W rzeczywistości pozostają na swoich poprzednich miejscach względem powierzchni Ziemi. Analogicznie podczas hamowania, pasażerowie wewnątrz autobusu z powodu bezwładności poruszają się nadal do przodu...</p>
<p>Students analyze a cartoon story in the bus and match the missing parts of a sentence with a given picture. They read the correct sentences aloud.</p>	<p>Each row of students gets a cut text of a bus story. The beginning of the sentences is given under the picture.</p>
<p>The teacher asks the following questions: In what way can we prevent the phenomenon of inertia in a car? Why is it obligatory to use seat belts while driving a car? What is the role of air bag during an accident? Why is it obligatory to use special children car seats?</p>	<p>Discussion</p>

Viking expansion

Source 1

Anglo-Saxon Chronicles

1066. [...]And Earl Harold succeeded to the kingdom of England just as the king granted it him - and also men chose him for it - and was blessed as king on Twelfth Night. And the same year in which he became king, he went out against William with a raiding ship-army. And meanwhile Earl Tostig came into the Humber with 60 ships. Earl Edwin came with a land-army and drove him out, and the boatmen deserted him; and he went to Scotland with 12 cutters, and Harald, the king of the Norwegians, met him with 300 ships, and Tostig submitted to him. And they both went into the Humber until they came to York; and Earl Morcar and Earl Edwin fought with them, and the king of the Norwegians had the victory. And King Harold was informed what had happened and was done there, and he came with a great raiding-army of English men, and met him at Stamford Bridge, and killed him and the earl Tostig and courageously overcame all that raiding-army. And meanwhile Earl William [came] up at Hastings on the Feast of St Michael and Harold came from the north, and fought with him before all his raiding-army had come; and there he fell, and his two brothers, Gyrth and Leofwine. And William conquered this land, and came to Westminster, and Archbishop Aldred consecrated him as king. And men paid him tribute, and gave hostages, and afterwards bought their lands.

<https://classes.v2.yale.edu/access/content/user/haw6/Vikings/AS%20Chronicle%20Peterborough%20MS.html>

Source 2

The Russian Primary Chronicles

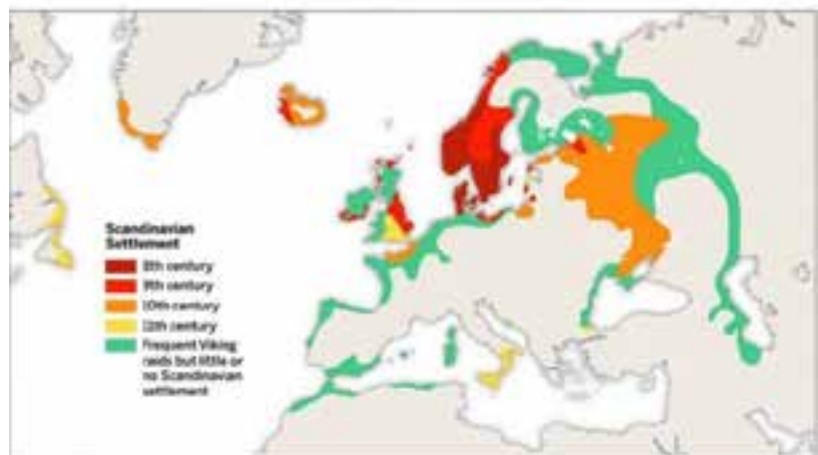
860-862 (6368-6370) [The four tribes who had been forced to pay tribute to the Varangians--Chuds, Slavs, Merians, and Krivichians] drove the Varangians back beyond the sea, refused to pay them further tribute, and set out to govern themselves. But there was no law among them, and tribe rose against tribe. Discord thus ensued among them, and they began to war one against the other. They said to themselves, "Let us seek a prince who may rule over us, and judge us according to custom". Thus they went overseas to the Varangians, to the Rus. These particular Varangians were known as *Rus'*, just as some are called Swedes, and others Normans and Angles, and still others Gotlanders, for they were thus named. The Chuds, the Slavs, the Krivichians and the Ves then said to the Rus, "Our land is great and rich, but there is no order in it. Come reign as princes, rule over us". Three brothers, with their kinfolk, were selected. They brought with them all the *Rus'* and migrated. The oldest, Rurik, located himself in Novgorod; the second, Sineus, in Beloozero; and the third, Truvor, in Izborsk. From these Varangians, the Russian land received its name. Thus those who live in Novgorod are descended from the Varangian tribe, but earlier they were Slavs. Within two years, Sineus and his brother Truvor died. Rurik gathered sole authority into his own hands, parceling out cities to his own men, Polotsk to one, Rostov to another, and to another Beloozero. The Varangians in these cities are colonists, but the first settlers in Novgorod were Slavs; in Polotsk, Krivichians; in Beloozero, Ves; in Rostov, Merians; and in Murom, Muromians. Rurik had dominion over all these folk.

<http://pages.uoregon.edu/kimball/chronicle.htm>

Source 3

<https://www.google.pl>

1. Give a nickname of William mentioned in source 1.
2. What is the name of dynasty that William started in England?
3. According to source 2 explain why we could not call all the Russians *Slavics*.
4. Based on sources, write in which countries the influence of the Vikings can be seen.
5. Tell why the Vikings could plunder lands that were far away from the sea.



The beginnings of the United States

Read the texts and solve the tasks.

Text 1.

United States Declaration of Independence

“We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness. (...)”

<https://www.archives.gov>

- In which year was the Declaration of Independence established?
- Give a proof that this text was formed in the age of Enlightenment.

Text 2.

“As president (...) sought to unite the nation and protect the interests of the new republic at home and abroad. Of his presidency, he said, “I walk on untrodden ground. There is scarcely any part of my conduct which may not hereafter be drawn in precedent.” He successfully implemented executive authority, made good use of brilliant politicians such as Alexander Hamilton and Thomas Jefferson in his cabinet, and quieted fears of presidential tyranny. In 1792, he was unanimously re-elected but four years later refused a third term. In 1797, he finally began a long-awaited retirement at his estate in Virginia. He died two years later. His friend Henry Lee provided a famous eulogy for the father of the United States: “First in war, first in peace, and first in the hearts of his countrymen.”

<http://www.history.com>

- This text is about... (write name and surname)
- What was the length of one term of the presidency?

Text 3.

Obverse of the Great Seal of the United States

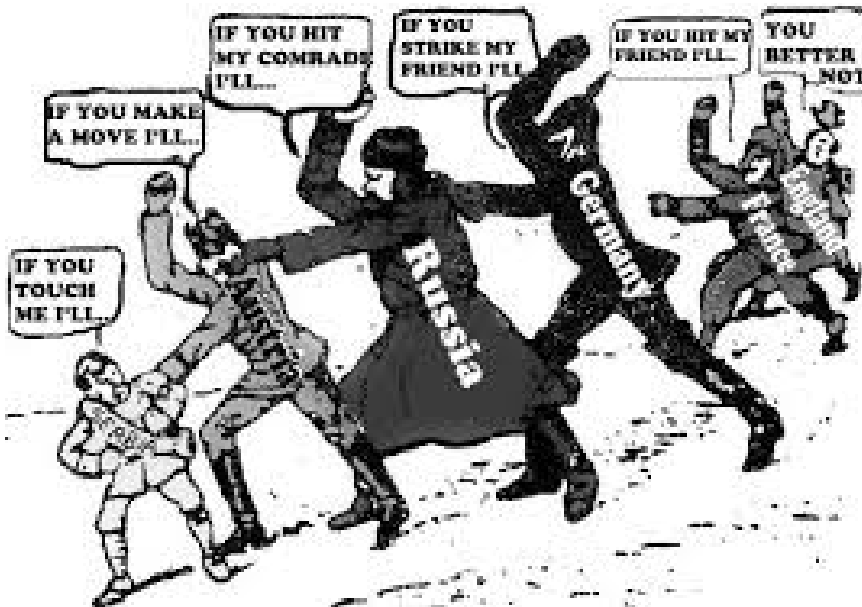


<https://upload.wikimedia.org/>

- What does a constellation of thirteen stars symbolize?

The outbreak of World War I

- A.



- B. Serbian response to Austria-Hungary ultimatum, July, 1914.

...[Serbia] cannot be held responsible for manifestations of a private character, such as articles in the press and the peaceable work of societies ... [The Serbian government] have been pained and surprised at the statements, according to which members of the Kingdom of Serbia are supposed to have participated in the preparations of the crime...

[However, Serbia is] prepared to hand over for trial any Serbian subject . . . of whose complicity in the crime of Sarajevo proofs are forthcoming [as well as officially condemn all propaganda against A-H]

- C. „Results of British ultimatum” – The Daily Herald, August 5, 1914

The following official statement was issued at early this morning. „Owing to the summary rejection by the German Government of the quest made by H.M. Government for assurances that the neutrality of Belgium will be respected, Majesty’s Ambassador to Berlin has received his passports, and His Majesty’s Government declared to the German Government that a state of war exists between Great Britain and Germany as from 11 p.m. on August 4th.” The King has already signed certain documents which naturally follow the existence of a state of war.

- 1. Explain why so many countries were engaged in World War I? (based on picture in source A and your knowledge)
- 2. What were the names of alliances that existed during World War I and which countries belong to which of them? (based on picture in source A and your knowledge)
- 3. Who was killed in Sarajevo on June 1914 and what were the consequences? (based on source B and your knowledge)
- 4. What was the condition given by Great Britain to Germany in the ultimatum? (based on source C)
- 5. Which day did Great Britain declare war with Germany? (based on source C)

The ideology of the racism, the policy of the Nazi Germany.

Adolf Hitler, *Mein Kampf*, 1925 r.

(...) What we can see today from human culture of achieving the play, learning, technique, is almost an exclusive product of the Aryan. The very fact allows to take out justified retrospective (resulting from analysis of the past) conclusion that the Aryan was an author generally speaking of higher society, being a prototype of what we understand by the notion "human".

(...) Lower nations with Germanic organisers and men, as their managers, (...) they stayed as long as a core of the artistic national race continued. Russia fed its upper layers this Germanic core for centuries. It is possible today to regard rooted up and dead them. To their place a Jew stopped by.

The same as the Russian he cannot shake off with own powers from the Jewish yoke, this way for the Jew keeping the powerful state by the longer time is an impossibility. He isn't describing the element of the organization, but only an unrest and the disintegration. The gigantic state in the East saw to the breakdown, and the end of the Jewish rule in Russia will be also an end of Russia as you. The fate chose us so that we were witnesses of the disaster which will constitute hugest confirming the national rightness of theory of races. (...)

Nazi legislation:

The act on the protection of German blood and reverences from 15 September 1935

NUREMBERG RACE LAWS, SEPTEMBER 15, 1935

Moved by the understanding that purity of the German Blood is the essential condition for the continued existence of the German people, and inspired by the inflexible determination to ensure the existence of the German Nation for all time, the Reichstag has unanimously adopted the following Law, which is promulgated herewith:

Article 1.

1. Marriages between Jews and subjects of the state of German or related blood are forbidden. Marriages nevertheless concluded are invalid, even if concluded abroad to circumvent this law.
2. Annulment proceedings can be initiated only by the State Prosecutor.

Article 2.

Extramarital intercourse between Jews and subjects of the state of German or related blood is forbidden.

Article 3.

Jews may not employ in their households female subjects of the state of German or related blood who are under 45 years old.

Article 4.

1. Jews are forbidden to fly the Reich or National flag or to display the Reich colors. They are, on the other hand, permitted to display

the Jewish colors. The exercise of this right is protected by the State.

Article 5.

1. Any person who violates the prohibition under §1 will be punished by a prison sentence with hard labor.



Questions:

1. What means did Hitler prepared against Aryans? What was the historical justification of the mission which the Germanic race suppose to serve?
2. What direction of the politics towards Russia is the quoted fragment announcing?
3. What did the enforcement of the Nuremberg acts mean for the German Jews?
4. Compare the contents of the Nuremberg acts with the fragment of "Mein Kampf" and make a conclusion about racism?

Topic: Volhyn massacre

- Volhyn massacre

The Volhynian massacres were anti-Polish genocidal ethnic cleansings conducted by Ukrainian nationalists. The massacres took place within Poland's borders as of the outbreak of WWII, and not only in Volhynia, but also in other areas with a mixed Polish-Ukrainian population, especially the Lvov, Tarnopol, and Stanisławów voivodeships (that is, in Eastern Galicia), as well as in some voivodeships bordering on Volhynia (the western part of the Lublin Voivodeship and the northern part of the Polesie Voivodeship – see map). The time frame of these massacres was 1943–1945. The perpetrators were the Organization of Ukrainian Nationalists–Bandera faction (OUN-B) and its military wing, called the Ukrainian Insurgent Army (UPA). Their documents show that the planned extermination of the Polish population was called an “anti-Polish operation.”

- Polish-Ukrainian Historical Disputes over the Volhynian Massacres

The anti-Polish drive of the pro-Bandera Ukrainian underground during World War II, together with the subsequent Polish retaliation it largely spawned, undoubtedly mark the bloodiest period of the Polish-Ukrainian conflict in the 1940s. This conflict raged in territories which were within Poland's interwar borders (basically, the country's south-east), and which, taken as a whole, had nearly co-equal Polish and Ukrainian populations. We use the word “conflict” because there was obvious antagonism between Poles and Ukrainians, and they waged a fight for land – even though they had been citizens of the same state (the Second Republic of Poland, 1918–1939). “Conflict” is thus one of the terms used to describe what happened between Poles and Ukrainians during World War II.

The perpetrators — Bandera's Organization of Ukrainian Nationalists (OUN-B) and its military wing, that is, the Ukrainian Insurgent Army (UPA) — used the codename “anti-Polish operation” in their documents in to refer to the planned extermination of the Poles. Bandera's followers carried this aim out during 1943–1945 on the disputed territories of Volhynia, Eastern Galicia, and the south-eastern Lublin region (centered on Chełm), which they regarded as “indigenously Ukrainian.” The present-day state of the Polish-Ukrainian historical debate on the topic is therefore but one proof of how complex the matter is. The endless publicist discussion, which is often accompanied by negative emotions, continues to heat up the historical debate. Thus, the echoes of those tragic events continue to have a significant influence on political decisions in Poland and Ukraine with regard to commemoration of the victims – for indeed, they have become an element of the Polish-Ukrainian conflict of memory.

- The Genesis of the “Anti-Polish Operation” of the OUN-B and the UPA

All governments of the Second Republic of Poland made mistakes in their policy toward the Ukrainian minority, especially on the eve of the war (e.g., the Polonization operation in the Chełm Region and in Volhynia). It seems, however, that the “anti-Polish operation” was a direct result of the OUN's ideology of integral nationalism (until 1939) and its radical faction's fascination with fascism (at least until 1942/1943). The ethnic policies of the Soviets and Germans (1939–1942) on the occupied south-eastern territories of the Second Republic of Poland were surely another factor. The former conducted deportations during 1940–1941, while the latter systematically exterminated the Jewish population, with help from some Ukrainians, beginning with the summer of 1941. In consequence, the Banderites concluded that they could follow the example of the two totalitarian powers to successfully solve the ethnic problems standing in the way of the establishment of a radically nationalist Ukrainian state. At the end of the war and in its immediate aftermath, however, the OUN-B was anxious to cover up the traces of the massacres and to “democratize” the organization through a new political platform — the Ukrainian Supreme Liberation Council. Most probably the aim of the Council was to avoid embarrassment in the eyes of the West, which as early as 1943 was recognized as a potential ally in the struggle against the USSR for the establishment of an independent Ukrainian state on all “ethnically Ukrainian” territories.

Nationalities in Poland 1918-1939, territory the Volhynian massacres.

- Red- Polish
- Yellow- Ukrainians
- Green - Belarusians



Questions:

- Explain the causes of the massacre in Volyn.
- Specify the circumstances, which made it possible to carry out the massacre in Volyn ?
- Who has committed the massacre in Volyn?



THE ORGANIZATION OF AHI



It is an organization educating Muslim Turkman people living in Anatolia in various professional fields such as arts, trade, economy and also improving them economically as well as morally by regulating the working environment on the basis of best human virtues. It has its own rules and system. The Ahi organization shows similarities to today's trade rooms.

Turks began settling in Anatolia in the second half of the 11th century. But they mainly preferred rural areas. Seljuk government on the other hand encouraged those who preferred a settled life in cities. After the Mongols began occupying Khorosan in the early 13th century, people from Khorosan took refuge in Anatolia and Seljuk government settled some of the newcomers in the cities. So, Muslim craftsmen and merchants appeared in the history of Anatolia.

Ahi Evren, a Muslim preacher came to Anatolia before the Mongol invasions in Khorosan. He worked as a leather dealer in Kayseri and began organizing Muslim craftsmen in the cities. This organization was named after him. He moved to Konya and after Mongol invasions to Denizli and Kırşehir.

GLOSSARY: fraternity: kardeşlik trade: ticaret

refuge: sığınak trade room: ticaret odası

craftsmen: usta brotherhood: kardeşlik

mercant: tüccar preacher: hatip

invasion: istila benevalance: yardımseverlik

1. Complete the gaps

1. This organization was after him.
2. Turks began settling in in the second half of the 11th century.
3. Ahi organization has its own
4. Ahi organization shows similarities to

2. Are the sentences true or false? Write





T or F

1. The Ahi organization was an organization in 13th century Turkey.(.....)
2. Ahi Evren came to Anatolia before the Mongol invasions in Khorosan(.....)
3. Seljuk government settled some of the newcomers in the village.(.....)
4. Ahi, is a socio- economic system that combines morality, correctness, brotherhood (.....)

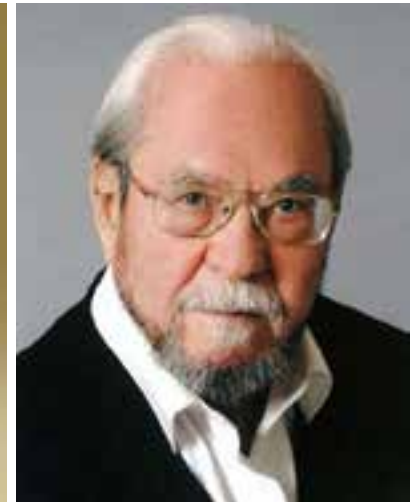
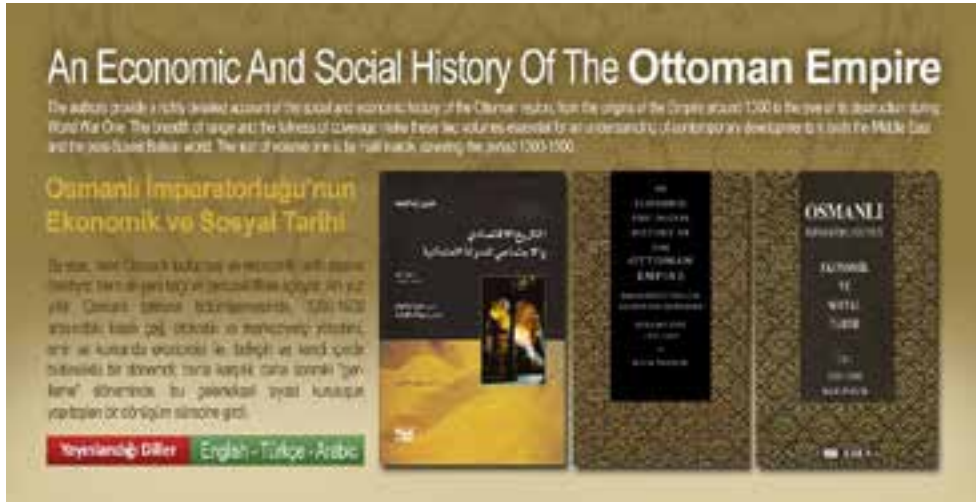
3 Find and mark the given words in the table.

Mercant Invansion
 Khoros Mongols
 Century

f	e	k	s	v	a	b	n
m	a	h	e	f	b	c	d
i	e	o	i	r	t	p	ş
n	s	r	c	b	n	k	l
v	b	o	c	e	m	a	c
a	d	s	e	a	o	b	l
n	i	a	n	y	n	o	p
s	a	n	t	e	g	t	c
i	d	n	u	k	o	l	b
o	ç	y	r	u	l	o	k
n	d	a	y	i	s	b	m



POLE OF THE HISTORIANS



Halil İnalcık (26 May 1916 – 25 July 2016) was a Turkish historian of the Ottoman Empire. His highly influential research centred on social and economic approaches to the empire.

He was born in Istanbul on 26 May 1916 to a Crimean Tatar family that left Crimea for the city in 1905. He attended Balıkesir Teacher Training School, and then Ankara University. His academic career started at Ankara University, where he completed his PhD and worked between 1940 and 1972. Between 1972 and 1986 he taught Ottoman history at the University of Chicago. From 1994 on he taught at Bilkent University, where he founded the history department. He was a founding member of Eurasian Academy.

İnalcık's work was centred upon a social and economic analysis of the Ottoman Empire. He aimed at both countering what he saw as the hostile, biased narrative presented by western sources at the onset of his work and what he saw as an exaggerated, romanticised and nationalistic historiography in Turkey itself. He exemplified the biased western narrative he tried to dispel as Franz

Babinger's depiction of Mehmed the Conqueror as a bloodthirsty, sadistic personality. He criticised generalising approaches to Ottoman history as such approaches, he argued, lacked social or economic insight due to a lack of research. He was the first historian to study Ottoman judicial records in depth to deduce elements of the socio-economic factors in the Ottoman society. When he first started his research in the 1940s, such documents were believed to be useless due in part to the recent change of alphabet and were being stored in unfavorable conditions or altogether destroyed.

İnalcık corrected a number of wrong convictions about Ottoman and Turkish history. One such instance was his discovery that the proposition that the Ottoman dynasty belonged to the Kayı tribe was fabricated in the 15th century. According to Immanuel Wallerstein, İnalcık shaped the discipline of historical research with his unique methodology and led to many students in his school of thought approaching issues from a number of socio-economic and cultural perspectives.

GLOSSARY:

- | | | |
|---|----------------------------|--------------------|
| Ottoman Empire: Osmanlı Devleti | historiography: Tarihçilik | conviction: Kanaat |
| historian: Tarihçi depiction: Tanımlama | dynasty: Hanedan | |
| Crimean: Kırımli conqueror: Fatih | society: Toplum | |
| Nationalistic : Milliyetçi | document: Belge | judicial: Adli |



1. Match the two halves of the sentences 1-4 to-a-f to make sentences about Halil İnalcık's life



- | | |
|--------------------------------|---|
| 1. Halil İnalçık was born | a. to study social and economic analysis of Ottoman |
| 2. His academic career started | b. Ottoman judicial records |
| 3. He was the first historians | c. in 1916 |
| 4. His work was centered upon | d. at Ankara University |

2. Write the following events under the correct date.

1916 1940 1972 1984

- a. He founded the history department at Bilkent University
- b. He worked at University of Chicago
- c. He was born in İstanbul.
- d. He worked at Ankara University

3. Why does he called "The pole of historians"? Read the text again and answer the question.

.....

.....

.....

.....

Mini Project: Prepare the biography of another Turkish historian using the internet. Include the following information.

Where and when was he-she born?

His/ her famous work.



WHAT IS HISTORY?



History is the science that examine all human communities activities and events which occur in the past in the cause and effect relationship, specifying time and location based on documents.

The subjects of history are social, economic, cultural activities of human communities who lived in the past. Geographic events as large earthquakes, drought, epidemic diseases are the subject of history too.

- Main properties historical events;
- The human communities' interactions with each other.
- Events experienced in the past
- Cause and effect relationship.
- Taking place in a specific place and time
- Based on documents
- Doesn't use experiment and observation method.
- It is not able to be repeated.

Historical events are classified according to subject, location and time. The First Historical Eras is an example to time classification, European History is an example to location classification ,Diplomatic History is example to subject classification.



GLOSSARY:

Science: Bilim property: Özellik

Human communities: İnsan toplulukları observation: Gözlem

Document: Doküman, belge classification: Sınıflandırma

1. Answer the questions.

1. What is history?

.....

2. What is the subject of history?

.....

2. Why doesn't use experiment and observation method?

.....



3. Complete the sentences.

- 1. Historical research is based on
- 2. Historical events are not able to
- 3. Historical events occur in a specific

4. Insert the following data correctly in the table.

- a. Cultural History
- b. Anatolian History
- c. 19th. century History
- d. History of Medicine
- e. History of Art
- f. Egyptian History
- g. Middle Age History
- h. Education History
- i. Indian History

subject	time	location



HITTITES



1. How much do you know about Hittites? Chose the correct alternative

1. Hittites came to Anatolia from Caucasus / Mesopotamia
2. Their capital was Hattusas / Gordion
3. They settled at Kızılırmak / Sakarya broadcast
4. Tavananna was given the title of queen / king of the Hittites
5. Battle of Kadesh is the first known written / verbal treaty in history

Hittites were one of the most important civilizations in Anatolia. They came to Anatolia over the Caucasus in 2000 BC. They settle at Kızılırmak broadcast and established the first known center state at Anatolia.

The Hittite *king* was supreme ruler, military commander, judicial authority and high priest. Throughout, the government of the most important cities and provinces was assigned by the *king* to members of his own family, each bounded to him by ties of homage and fealty.

A notable characteristic of the Hittite state is the prominent part played by women, especially the queen. tavananna was given the title of queen of the Hittites. Pudupepa, wife of Hattusilis III, is regularly associated with her husband in treaties and documents of the state and she even carried on correspondence with foreign kings and queens

in her own right.. There is some reason to believe that a matrilineal system once prevailed in Anatolia and the independent position of the Hittite queen could be a result of this.

The Hittite state was a military organization. Daily life was closely regulated by law. The price of plowed field and vineyard, of cattle and their hides, was fixed. So were the wages of free man and slave. Punishments for breaches of the law were mild, but crimes such as murder and theft were made prohibitively expensive by heavy fines. The spirit of Hittite law was more humane than that of the Babylonian or Assyrian legal codes

The Hittite economy was based on agriculture. The main crops were barley, emer, wheat, grapes and olives. Beekeeping was their sugar industry and honey was a significant item in the diet. They raised horses, cattle, sheep, goats and perhaps water buffalo. Donkeys were used as pack animals,. *dogs* as their best friends. Loom weights and spindle whorls found in great numbers show that they manufactured cloth.

The Hittite population would largely have consisted of peasants. There was a recognized class of craftsmen especially potters, cobblers, carpenters and smiths, and though metal principally worked was bronze, the smelting of iron was already understood and a high value was set on this metal. The medium of exchange was silver, of which the Taurus Mountains contained an abundant supply; however, it is not known how this potential source of wealth was controlled by the *Hittite kings*.. The



Hittites were also famous workers in metals. They appear to have been the first to use iron. Their business methods were Babylonian, and for buying and selling they too used the weighed pieces of silver from which the Greeks got the idea for coins. Beautiful cups, jars, and pitchers indicate their interest in graceful and original forms and in convenient contrivances Caravan routes led from town to town. Big game abounded, and hunting was the sport of king and commoner. Traces of metallurgy are found in *Hattusas*. Textual and material ranging from goldsmiths to shoemakers and to pottery..

Slavery was severe. The master had the power of life and death. The Hittite weakness was that they never had a reliable native population. It was solved by the settlements of deportees, who retained royal control even when put beside native communities.

The Hittites themselves write of “the thousand gods of Hatti”. Hittites used cuneiform script on their inscriptions. Also they used the hieroglyph form on some inscription, intended for ordinary people to understand the contents easily.

.Although the Hittite Empire vanished thousands of years ago, it has by no means been forgotten, and its capital Hattusha has been declared a *World Heritage Site* by UNESCO. Moreover, an enlarged copy of a cuneiform tablet found here hangs in the United Nations building in New York. This tablet is a *peace treaty* concluded after the *Battle of Kadesh* between the *Hittite king* Hattusili III and the Egyptian pharaoh Ramses II about 3260 years ago, demonstrating to modern statesmen that international *treaties* are a tradition going back to the earliest civilizations.



GLOSSARY:

Empire: İmparatorluk Annal: Yıllık

State: Devlet Government: Hükümet

Queen: Kraliçe Punishment: Ceza

King: Kral Law: Kanun

2. Complete the gaps left in correctly

1. The Hittite’s capital was.....





2. The first peace treaty in history was.....
3. The Hittite's economy based on
4. Hattusa has been declared a.....
5. The medium of exchange was.....

3. Answer the questions.

1. Why was Battle of Kadesh important treaty for history?

.....

2. What were the names of Hittite's annuals?

.....

3. Where were the Hittite state of affairs discussed?

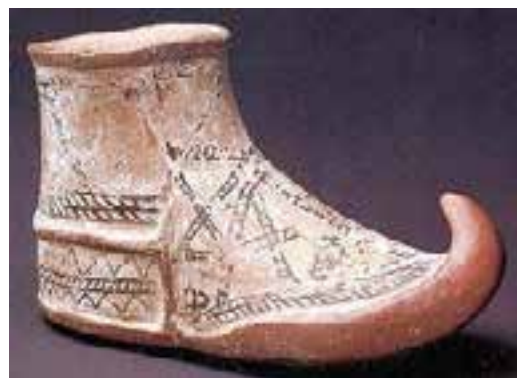
.....

4. What were the duties of the kings of Hittite?

.....

5. What was the importance of laws of Hittite Empire?

.....



4. Match the expressions correctly

- | | |
|------------------------|---|
| 1. Annual..... | a. wife of Hattusili |
| 2. Pankus Council..... | b. being captured |
| 3. Pudupepa..... | c. interstate agreement |
| 4. Slavery..... | d. annual written by Hittite |
| 5. Pharaoh..... | e. Hittite nobility council |
| 6. Treaty..... | f. The title given to rulers of ancient Egypt |

5. Read the sentences. If it is correct write T, if it is incorrect write F.

1. The Hittites were also famous workers in metal.....
2. The Hittites believed in one God.....
3. The Hittites made beekeeping.....
4. Hittite laws were harder than the Babylonian laws.....





5. The Hittite's king's only task was to rule the state

6. Find and mark the words given in the table

EMPIRE
QUEEN LAW

GOVERNMENT
KADESH

HIEROGLYPH

INSCRIPTION

HATTUSA STATE

H	A	C	F	N	U	F	H	M	I
I	E	M	P	I	R	E	Y	H	N
E	D	G	T	Y	L	K	V	A	S
R	S	C	S	T	A	T	E	T	C
O	R	K	H	E	W	F	K	T	R
G	E	V	A	N	O	P	G	U	I
L	A	S	E	D	B	T	U	S	P
Y	B	H	U	L	E	R	E	A	T
P	V	G	A	B	C	S	Y	K	I
H	N	E	E	U	Q	A	H	B	O
G	O	V	E	R	M	E	N	T	N



RENAISSANCE



1. How much do you know about The Renaissance? Look at the picture and say what you think

Renaissance Inventions & Discoveries The Renaissance was a cultural movement that took place in Europe during the period between 14th and 17th century. The epicenter of this movement was in Florence Italy which gradually spread to Rome and the rest of Europe. It was a golden period that led to development in arts, literature and culture. It is often thought to be a movement that led to the birth of the modern era with modern thinking and perspective.

Although Renaissance is better known for its artistic developments as seen by the works of Leonardo da Vinci and Michelangelo, there were many notable inventions during this period. Perhaps one of the most important inventions of the Renaissance period is the printing press, which marked a paradigm shift in education and literature.

During the Renaissance, there were many new inventions and discoveries made, which changed the way people worked or looked at things. Some of the everyday things that we use today are Renaissance inventions and technology. Some of the greatest inventions of all times were made during this period. Renaissance inventions and inventors were truly revolutionary and unique and the world is what it is today, due to these inventions made at that period.

GLOSSARY: Renaissance: Rönesans

revolution: Devrim

Printing pres Matbaa

unique: Benzersiz

Inventions: Buluş

discover: Keşif

2. Match the expressions correctly.

- | | |
|----------------------|---|
| a. Renaissance | a. the epicenter of Renaissance |
| b. Leonardo da Vinci | b. Golden period that lead to development in art, literature and culture. |
| c. printing press | c. painter of Renaissance period |
| d. Florence | d. One of the most important inventions of the Renaissance |

3. Answer the questions?

1. When did the Renaissance cultural movement take place in Europe?



.....

2. Where did the Renaissance begin first?

.....

3. Why are the Renaissance invention important for us?

.....

4. Write celebrities that were trained during the Renaissance period.

Artist	scientist	thinker	architect

Mini Project: Which inventions and discoveries were made during the Renaissance period? Prepare a



chronology of information that you find.

Percentages

In mathematics, a percentage is a number or ratio expressed as a fraction of 100. It is often denoted using the percent sign, "%", or the abbreviations "pct.", "pct"; sometimes the abbreviation "pc" is also used. A percentage is a dimensionless number (pure number).

Examples

For example, 45% (read as "forty-five percent") is equal to $\frac{45}{100}$, or 0.45. Percentages which are not ratios are expressed as a relationship of the part to the whole.

For example, if the whole was the total number of students in a class, when 50% of the students in the class were male that means that 50 out of every 100 students were male. If there were 1000 students then 500 would be male. For example, an increase of \$0.15 on a price of \$2.50 is an increase by a fraction of $\frac{0.15}{2.50} = 0.06$. Expressed as a percentage, this is therefore a 6% increase

Request 1.

Replace the percentage with the number of:	Replace the number with a percent on:
12% =	0,79 =
57,6% =	14 =
0,7% =	6,4 =
125% =	0,008 =
0,04%	12,7 =

- The calculations use rates among other things, three types of tasks:
 - a) calculating the percentage of a given number
 - b) What percentage of one number is another number
 - c) when the number of search is given by the percentage

a) Examples

Calculate 40% number 200

I	II	III
$40\% = 0,4$ $0,4 \cdot 200 = 80$	$40\% = \frac{40}{100}$ $\frac{40}{100} \cdot 200 = 40 \cdot 2 = 80$	$40\% - x$ $100\% - 200$ $100\% \cdot x = 40\% \cdot 200$ $x = \frac{40 \cdot 200}{100} = 80$

Request2

Calculate:

- 25% of number 80
- 140% of number 120
- 8% of number 36,8

b) Examples

What percentage of the number 150 is the number 30

1	2
$\frac{30}{150} \cdot 100\% = \frac{1}{5} \cdot 100\% = 20\%$	$x\% \cdot 30$ $100\% \cdot 150$ $150 \cdot x\% = 30 \cdot 100\%$ $x = \frac{30 \cdot 100\%}{150} = \frac{300\%}{15} = 20\%$

Request 3

Calculate

- What percentage of the number 500 is the number 40
- What percentage of the number 86 is the number 256
- What percentage of the number 25,4 is the number 30

c) Examples

Find the number of which 80% is equal to 120

1	2
$\frac{120}{80\%} = \frac{120}{\frac{80}{100}} = 120 \cdot \frac{100}{80} = \frac{120 \cdot 10}{8} = \frac{1200}{8} = 150$	$80\% = 120$ $100\% = x$ $80\% \cdot x = 100\% \cdot 120$ $x = \frac{100\% \cdot 120}{80\%} = \frac{1200}{8} = 150$

Request 4.

- Find the number of which 150% is equal to 12
- Find the number of which 15% is equal to 450
- Find the number of which 12,7% is equal to 25

Dictionary

percentage – procent

number - liczba

exchange – zamiana

fraction - ułamek

calculate – oblicz

equal - równy

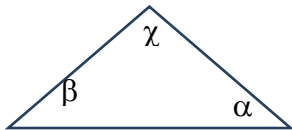
The angles in the triangle

The fact box

- The sum of angles in the triangle equals 180° .
- The sum of both exterior and interior angles is 180° .

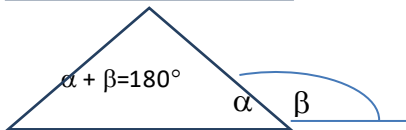
Warm up

Procedure

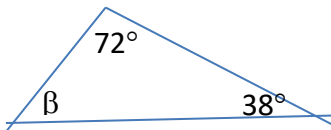


$$\alpha + \beta +$$

The teacher presents the following example;



The teacher explains to the students:



The teacher sets the example. Calculate β .

$$\beta + 72^\circ + 38^\circ = 180^\circ$$

Exercises :

1. Interior angles of a triangle are proportional to 2:3:4. Then the final, the biggest exterior angle of this triangle is?
2. Two angles of a triangle are proportional 4:5. The third angles is 37° bigger than the smallest angles
3. Complete:

	$\beta = ?$
	$\alpha + \beta + \gamma = ?$
	$\alpha = ?$

Follow up:

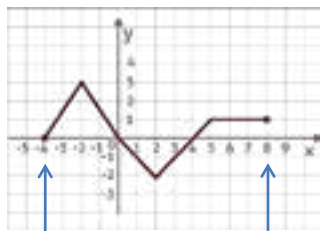
Formulate two similar examples for your classmate.

Domain function

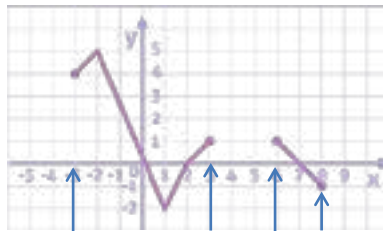
In mathematics, a function is a relation between a set of inputs and a set of permissible outputs with the request that each input is related to exactly one output. An example is the function that relates each real number x to its square x^2 . The output of a function f corresponding to an input x is denoted by $f(x)$ (read "f of x"). In this example, if the input is -3 , then the output is 9, and we may write $f(-3) = 9$. Likewise, if the input is 3, then the output is also 9, and we may write $f(3) = 9$. (The same output may be produced by more than one input, but each input gives only one output.) The input variable(s) are sometimes referred to as the argument(s) of the function.

Domain - a set of function arguments

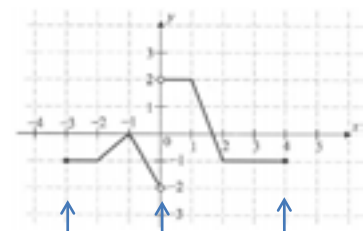
To appoint the field function from the chart, we read the arguments for which the function is determined



$$D: x \in (-4, 8)$$



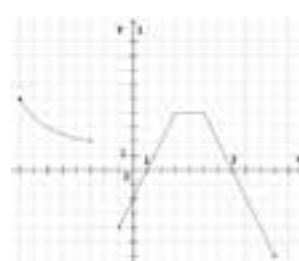
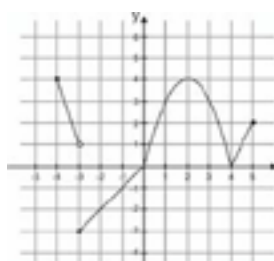
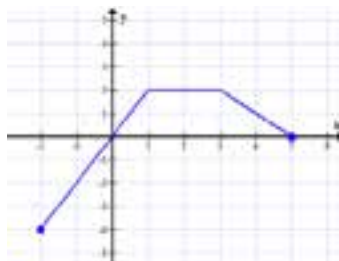
$$D: x \in (-3, 3) \cup (6, 8)$$



$$D: x \in (-3, 0) \cup (0, 4)$$

Exercise 1.

Read the domain of the function



To determine the domain of the function from the formula, you should

a) if you have a polynomial function $D: x \in \mathbb{R}$

b) if you have a fraction :

$$f(x) = \frac{2x-5}{4x-2}, \quad \begin{aligned} 4x-2 &\neq 0, \\ 4x &\neq 2 \quad /: 2 \\ x &\neq \frac{1}{2}, \end{aligned}$$

$$D: x \in \mathbb{R} \setminus \left\{ \frac{1}{2} \right\}$$

$$f(x) = \frac{5}{x-4} + \frac{6x+4}{x^2-9}, \quad \begin{aligned} x-4 &\neq 0 \text{ and } x^2-9 \neq 0 \\ x &\neq 4 \text{ and } x^2 \neq 9 \\ x &\neq 3 \text{ and } x \neq -3 \end{aligned}$$

$$D: x \in \mathbb{R} \setminus \{-3, 3, 4\}$$

c) if you have a square root

$$f(x) = \sqrt{x-4}, \quad \begin{array}{l} x-4 \geq 0 \\ x \geq 4 \end{array}$$

$$D: x \in (4, \infty)$$

$$f(x) = \sqrt{3x-6} + \sqrt{5-x}, \quad \begin{array}{l} 3x-6 \geq 0 \text{ and } 5-x \geq 0 \\ 3x \geq 6 \text{ and } -x \geq -5 \\ x \geq 2 \text{ and } x \leq 5, \end{array}$$

$$D: x \in (2, 5)$$

d) if you have a square root a fraction

$$f(x) = \frac{3x-2}{\sqrt{x+3}}, \quad \begin{array}{l} x+3 > 0 \\ x > -3, \end{array}$$

$$D: x \in (-3, \infty)$$

$$f(x) = \frac{5x+8}{\sqrt{6-x}}, \quad \begin{array}{l} 6-x > 0 \\ -x > -6 \quad / \quad (-1), \\ x < 6 \end{array}$$

$$D: x \in (-\infty, 6)$$

Remember

$$1. \quad f(x) = a_n x^n + a_{n-1} x^{n-1} + \dots + a_1 x + a_0 \quad D: x \in \mathbb{R}$$

$$2. \quad \frac{g(x)}{f(x)}, \quad f(x) \neq 0$$

$$3. \quad \sqrt{f(x)}, \quad f(x) \geq 0$$

$$4. \quad \frac{g(x)}{f(x)}, \quad f(x) > 0$$

Exercise 2.

1. The domain of the function $f(x) = \frac{x+3}{x^2+4x}$ is set

A. $\mathbb{R} \setminus \{-4, 0\}$

B. $\mathbb{R} \setminus \{0\}$

C. \mathbb{R}

D. $\mathbb{R} \setminus \{-2, 0, 2\}$

2. Domain function $f(x) = \frac{x^2-16}{(x-2)(x+4)}$ is set:

A. $\mathbb{R} \setminus \{-2, 4\}$

B. $\mathbb{R} \setminus \{2, -4\}$

C. $\mathbb{R} \setminus \{-4, 4\}$

D. $\mathbb{R} \setminus \{2\}$

3. Determine the domain of the following functions:

a) $f(x) = \sqrt{x+3}$

b) $f(x) = \sqrt{2x-8} - \sqrt{6-3x}$

c) $f(x) = \sqrt{3x^2+1}$

4. Determine the domain of the following function:

$$f(x) = x + \frac{1 - \sqrt{x+1}}{\sqrt{4-8x}}$$

Average

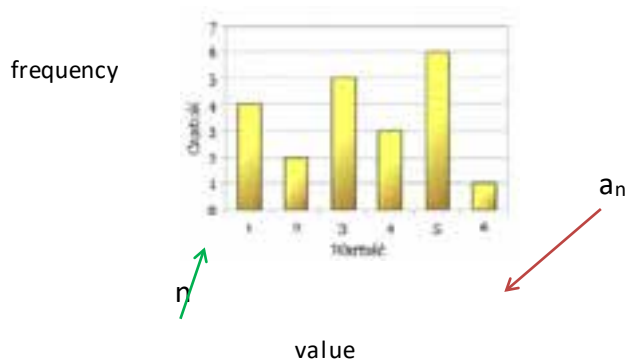
Definition

The arithmetic mean (or mean or average) is the most commonly used and readily understood measure of central tendency. In statistics, the term average refers to any of the measures of central tendency. The arithmetic mean is defined as being equal to the sum of the numerical values of each and every observation divided by the total number of observations. Symbolically, if we have a data set containing the values

a_1, a_2, \dots, a_n The arithmetic mean is defined by the formula $\frac{a_1 + a_2 + \dots + a_n}{n}$

For example:

- let us consider the monthly salary of 6 employees of a firm: 5, 8, 3, 0, 6, 2. The arithmetic mean is $\frac{5+8+3+0+6+2}{6} = \frac{24}{6} = 4$
- the average mean in the chart



$$\frac{1 \cdot 4 + 2 \cdot 2 + 3 \cdot 5 + 4 \cdot 3 + 5 \cdot 6 + 6 \cdot 1}{4 + 2 + 5 + 3 + 6 + 1} = \frac{4 + 4 + 15 + 12 + 30 + 6}{21} = \frac{71}{21} = 3 \frac{8}{21}$$

the average mean in the table

number of siblings (a_n)	0	1	2	3	4	5
number of replies (n)	13	9	4	3	1	0

$$\frac{0 \cdot 13 + 1 \cdot 9 + 2 \cdot 4 + 3 \cdot 3 + 4 \cdot 1 + 5 \cdot 0}{13 + 9 + 4 + 3 + 1 + 0} = \frac{0 + 9 + 8 + 9 + 4 + 0}{30} = \frac{30}{30} = 1$$

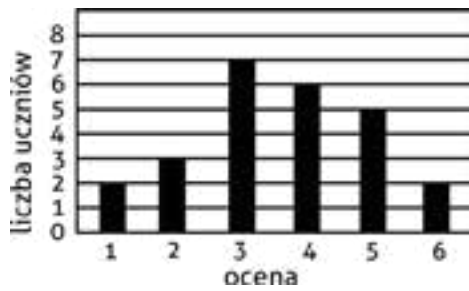
Exercise 1

calculate the arithmetic mean of the numbers:

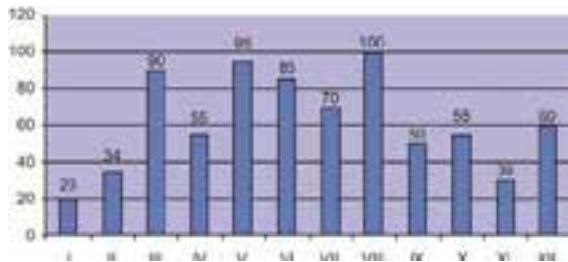
- 2500, 2700, 2400, 2300, 2550, 2650, 2750, 2450, 2600, 2400
- 4, 5, 7, -1, 5, 8
- 0,4; 0,9; 1,2; 0,7; 0,9; 1,5; 1; 1

Exercise 2

a) calculate the arithmetic mean of the students' marks



b) calculate the arithmetic mean of the sale of flowers in 2015r



Exercise 3

calculate the arithmetic mean

a)

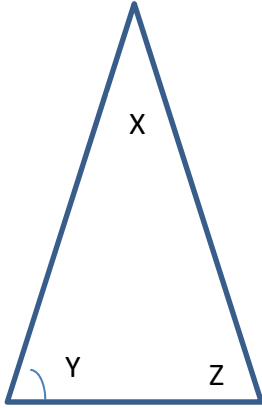
the number of books read	4	3	2	1	0
the number of children	4	5	6	10	11

b)

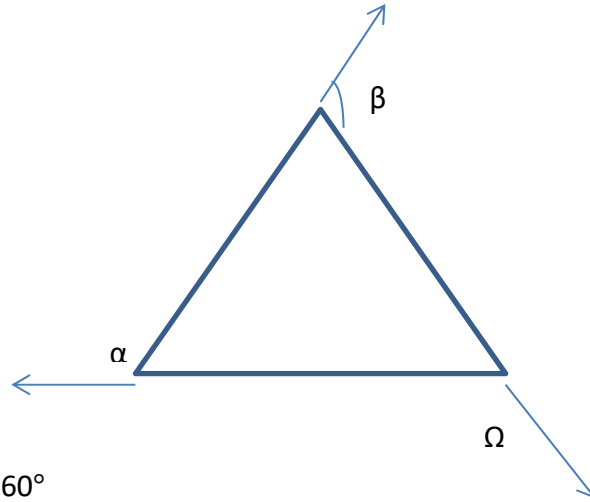
the number of mistakes	8	5	1	11	10
the number of people	12	5	10	5	8

The Sum Of Angles Of A Triangle

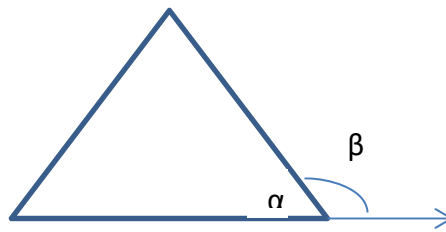
- The sum of interior angles of a triangle is equal to 180° .
- The sum of exterior angles of a triangle is equal to 360° .
- The sum of interior and exterior angles of a triangle at the same corner is equal to 180° .



$$X+Y+Z = 180^\circ$$



$$\alpha+\Omega+\beta = 360^\circ$$

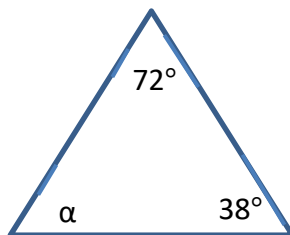


$$\beta+\alpha = 180^\circ$$

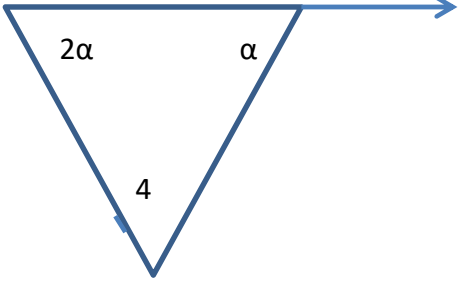
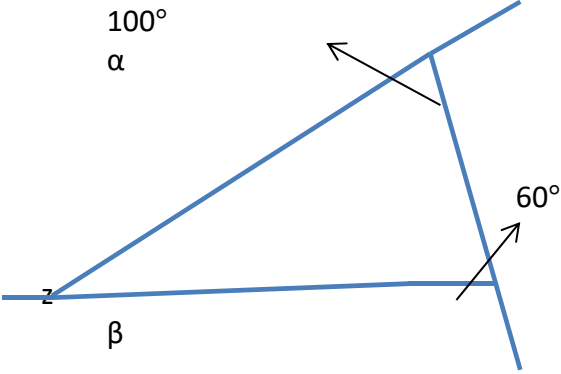
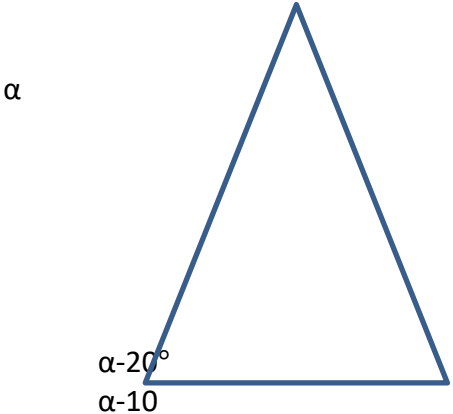
Exercises:

1.

Find $\alpha = ?$



2. Interior angles of a triangle are proportional to 2:3:4. Then find the biggest exterior angle of this triangle .
3. Two angles of a triangle are proportional 4:5. If the third angles is 36° then find the unknown angles .
4. Complete:

	$\beta = ?$
	$\alpha + \beta + z = ?$
	$\alpha = ?$

- Formulate two examples for your classmates.

Fact box:

- The sum of interior and exterior angles of a triangle is 180°
- The sum of interior and exterior angles of a triangle at the same corner is 180°

Vocabulary:

Interior – iç

Exterior – dış

Triangle – üçgen

Angle – açı

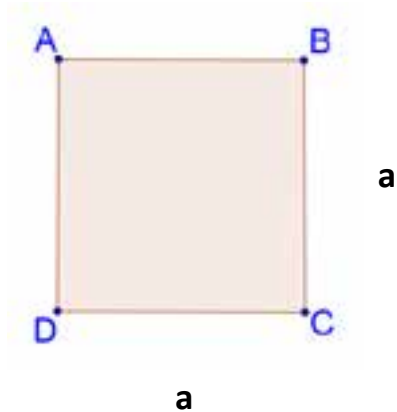
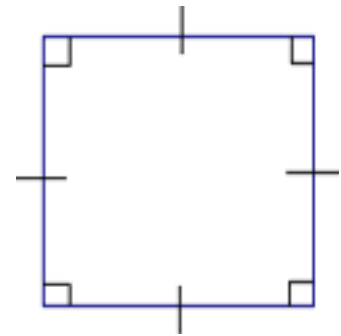
Sum – toplam

Equal – eşit

Corner - köşe

GEOMETRY: SQUARE

Square is a regular polygon which has four perpendicular and equal sides. From the definition it follows that the opposite sides are also parallel.

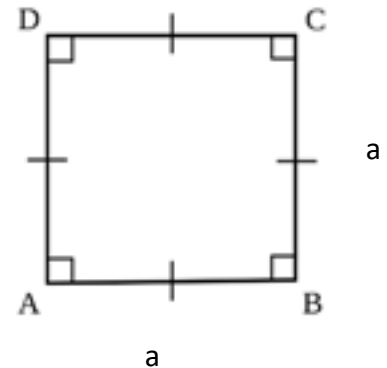


Perimeter: The distance around the square. All four sides are the same length, so the perimeter is equal to four times the length of one side.

Perimeter = $4a$ where "a" is the length of one side.

Area: The area is the length of one side times the perpendicular height.

$$\text{Area} = a * a = a^2$$

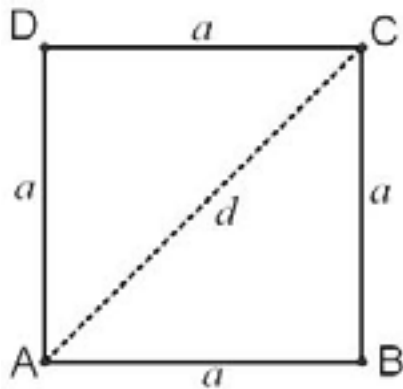
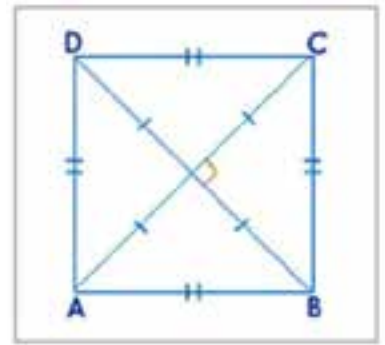


Fill the chart below assuming that you have a square with the provided information given on the chart.

Side	Perimeter	Area
4 cm		
	20 cm	
		49 cm^2

Diagonals: A square has two diagonals which are equal to each other in length.

- ✓ The diagonals are not only perpendicular to each other but also intersect in the middle. Which means, each diagonal cut the other into two equal parts and they cross at right angles.
- ✓ Each diagonal divides the square into two congruent isosceles right triangles.



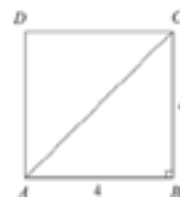
Length of the diagonal: The diagonal of the square is the hypotenuse of the two congruent triangles. So we can use Pythagoras theorem to find the length of the diagonal, if we know one side of the square length.

Diagonal = $\sqrt{a^2 + a^2}$ which is also equal to

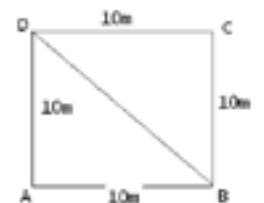
Diagonal = $a \cdot \sqrt{2}$

1) Solve the following questions

a. Find the length of the diagonal AC.



b. Find the shortest way to go from the point D to B .



c. Find the length of "a" in the square below.



GLOSSARY

Square – Kare

Area - Alan

Perpendicular – Dik

Perimeter - Çevre

Diagonal – Köşegen

Middle - Orta

Length - Uzunluk

Congruent - Eş

Fact box:

- Square has four sides
- All sides are equal
- Opposite sides are parallel
- Consecutive sides are perpendicular

MINI PROJECT

Write two questions which are similar to those in the exercise 2 and solve them.

Ratio & Proportion

Ratio: Ratio is a comparison of magnitudes of the same kind that can be measured by dividing one to the other. So the ratio has no unit. All ratios must be written in lowest terms. The ratio of x to y can be expressed in the following ways : $x : y$ or $\frac{x}{y}$



1) C

Check the correct column and give a reason

	It is a ratio	It is not a ratio	Reason
$\frac{25\text{ kg}}{78\text{ kg}}$	✓		The magnitudes of the numerator and the denominator are of the same kind.
$\frac{10^\circ\text{F}}{45\text{ m}}$			
$\frac{20\text{ km}}{100\text{ kg}}$			
$\frac{45\text{ ml}}{17\text{ ml}}$			
$\frac{8\text{ cm}}{3\text{ L}}$			
$\frac{60\text{ dm}}{13\text{ dm}}$			

2) Read the word problems and set up the ratio

a - In a basketball team we have 6 boys and 3 girls,

I - What is the ratio of boys to girls in this team ?

II - What is the ratio of girls to the whole team ?

b - Find the ratio of salt, in a mixture which contains 5 liters of water and 3 liters of salt.

a. Peter had 12 pencils, 7 of them were blue and the rest were red,

i. What is the ratio of the number of blue pencils to the number of reds?

ii. What is the ratio of number of blue pencils to the total number of pencils?

Proportion: The equality of two or more ratios is called proportion. So the proportion is equal to a rational number which we show it by the letter “k” and call it “the proportion constant”.

$$a:b = c:d \text{ OR } \frac{a}{b} = \frac{c}{d} = k \quad \text{Proportion constant}$$

In solving proportion questions:

When two ratios are equal, then the cross product of the ratios are equal. That is, for the proportion

$$\frac{a}{b} = \frac{c}{d} \text{ then } a \times d = b \times c$$

3) Solve the following exercises.

a. Find the value of x for $5:25=3: x$

b. Find the value of x for $\frac{3}{5} = \frac{8}{x}$

c. Find the value of n for $\frac{18}{n+6} = \frac{6}{n}$

d. Find the value of y for $\frac{30}{y+1} = \frac{10}{3y-5}$

e. If $a:b = 5:3$ find,

I - $b : a$

II - $a : (a - b)$

III - $b : (a + b)$

IV - $(a - b) : (a + b)$

4) If $\frac{a}{3} = \frac{b}{4}$ and $2b - a = 40$, find the value of b?

MINI-PROJECT

Write 3 similar proportion problems to those in exercise 3 and try to solve them.

GLOSSARY

Ratio – Oran

Proportion – Orantı

Magnitude – Büyüklük

Constant – Sabit

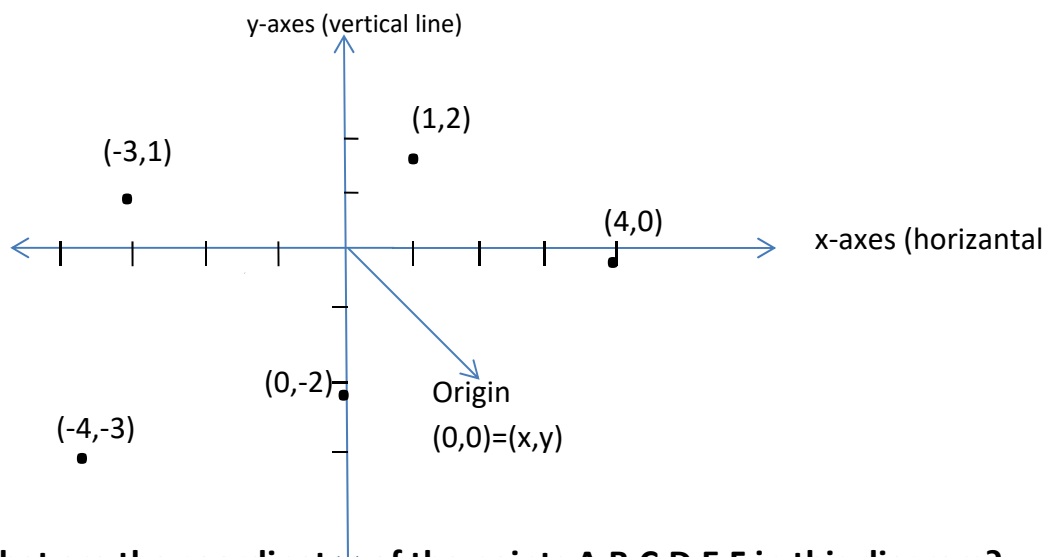
Mixture – Karışım

Salt – Tuz

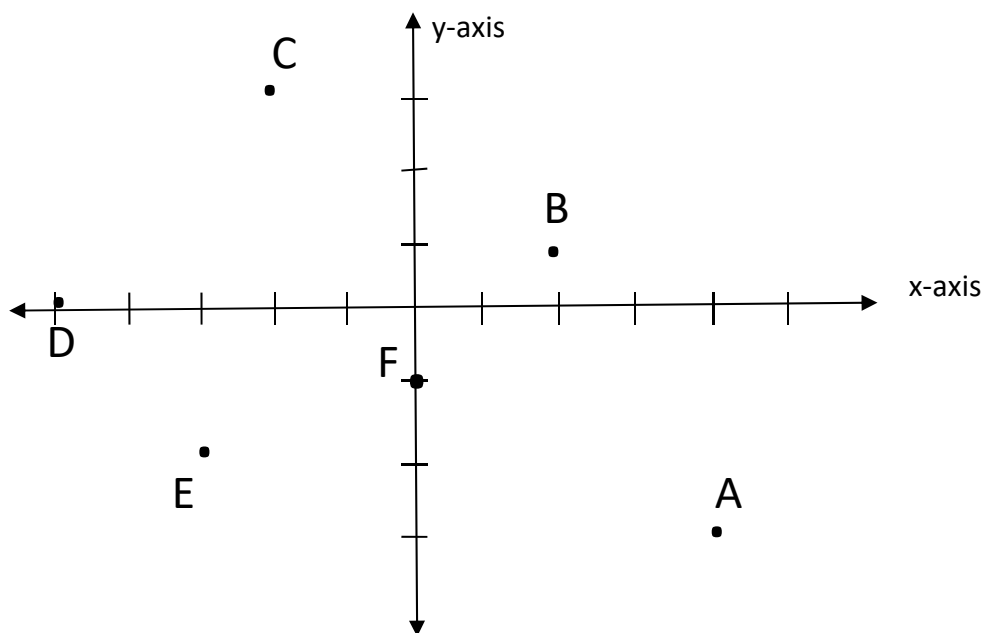
Team - Takım

PLOTTING POINTS ON COORDINATE AXES

- Coordinates (x,y) are also called ordered pairs.
- Coordinates are two numbers which describe the location of a point on a graph.
- X-axis is the horizontal axis of a graph.
- Y-axis is the vertical axis of a graph.
- X coordinate is the first number in the ordered pair. It tells you how far along the x-axis to move.
- Y coordinate is the second number in the ordered pair. It tells you how far up or down the y-axis to move.
- Origin $(0,0)$ is the point where the two axes cross.
- The x-axis and the y-axis divide a plane into four quadrants.
- To plot is to mark the position on a graph using the two coordinates.



1. What are the coordinates of the points A,B,C,D,E,F in this diagram?



Draw axes going from (-5) to (5) in the space below and plot the following points;

X= (3,-1) Y= (-2,-3)

Z= (1,5)

K= (-4,2) L= (0,3)

Mini Project

Fact box

- Intersecting horizontal and vertical number lines create a plane

Vocabulary

Coordinate – Kordinat

Vertical – Dikey

Horizontal – Yatay

Ordered pair – Sıralı ikili

Graph – Grafik

X-axis – x eksen

Y-axis – y eksen

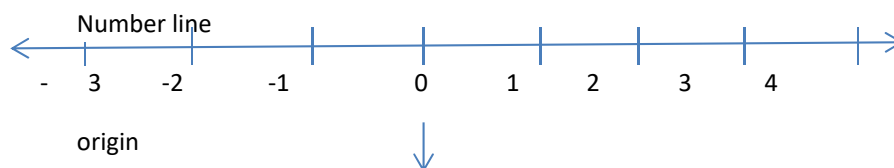
Quadrants – Bölge

Origin – orijin

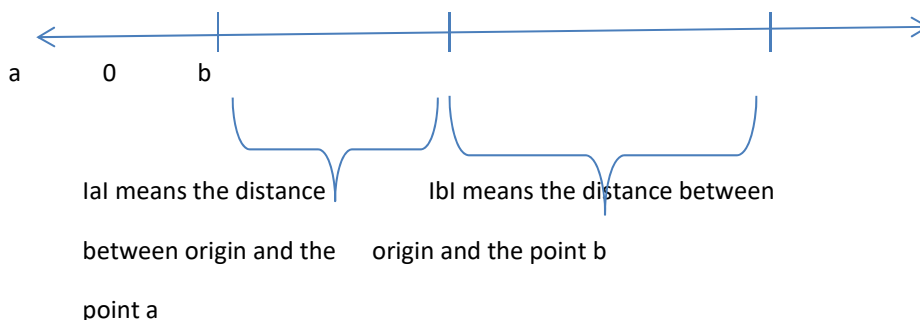
Plot – İşaretlemek

ABSOLUTE VALUE OF A NUMBER

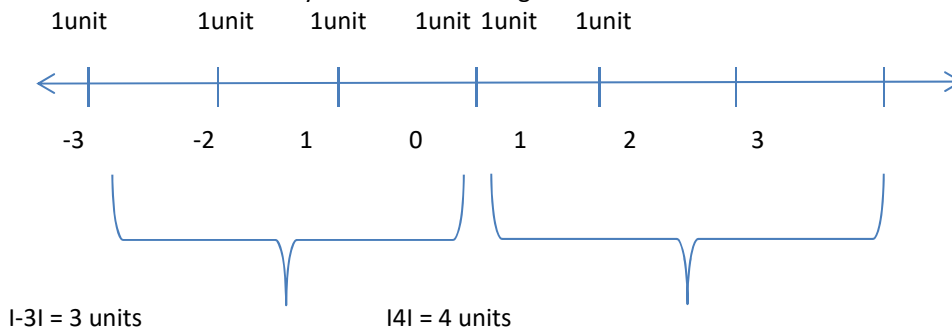
- The distance between a number and the origin on the numberline is called the absolute value of this number. And the absolute value of the number x is shown as $|x|$.



- All the integers are at a specific distance from zero
- All the integers are at a specific distance from each other.



- But be careful; the value of a distance can't be negative!
- So the absolute value of any number can be negative



1) Find the values of the following.

- $|5| = ?$
- $|-4| = ?$
- $|-2| = ?$

- So we can say that if we are trying to find the absolute value of a positive number we have to throw away the absolute value sign only, but if it is a negative number we have to multiply this negative number by (-1) in order to make it positive. And afterwards we don't use the absolute value sign anymore.

2) Solve the following

- $|-4| + |-1| + |3| = ?$
- $|-3| + |7| - |-2| = ?$

c. $| -4| + |5| + | -6| = ?$

d. $| -8| - |2| - | -5| = ?$

- If there is an operation inside the absolute value we have to do operation inside first and afterwards decide what to do about the absolute value

3) Find the results of the following

a. $| -5 + 3| = ?$

b. $| -3 + 5 - 2| = ?$

c. $| 6 - 8| + | 1 - 7| + | -2| = ?$

d. $| -2 + 6 - 1| + | -9 + 3| = ?$

Fact box

- Absolute value shows a distance
- This distance is always between the Origin and the number
- The distance can't be negative

GLOSSARY

Absolute value - mutlak değer

Number line - sayı doğrusu

Distance - uzaklık

Point - nokta

Unit - birim

Between - arasında

Positive number - artı sayı

Negative number - eksi sayı

Badminton preparation

- badminton court or 5 spot marker per pair
- racquet per student
- 1 shuttle per 4 students

Set

- use or create 1 badminton court per pair
- place 1 shuttle and 4 racquet per court
- optional: coach, official for games

Teach

- doubles front-to-side:
- trajectory: low
- target: front court

Doubles front to back:

- trajectory steep
- target: mid-court sideline

Create, practice and play your own version "I got your back". Vary the type of shots (clear, drop, smash, drive), vary the type of serve (long and short).

Space scoring methods to develop rules.

Play until signald.

A boxing workout can increase endurance, strength and speed. Although boxing workouts can be cruel and intense, the risk is worth the reward.

Boxing workouts can consist of:

- Jumping rope
- Shadow boxing
- Heavy bag
- Speed bag
- Sparring
- Weight training
- Running
- Etc.

Workout:

What is the best boxing workout.

Boxing is approximately 80% anaerobic and 20% aerobic. This workout combines strength, power, speed, agility and quickness all into one to ensure you're a well-balanced fighter.

Jumping Rope:

This popular form of cardio will reduce your body fat while providing a fun and intense workout. There are many types of different jump rope skipping styles, but here are the three you will need.

Running In Place:

Remain stationary spot while lifting the knees high with each turn of the rope. This is the basic and easiest style of jumping rope.



Running In Place.

Double Unders:

Make two turns of the rope for every one jump. This style is more difficult to learn so use it only when you have mastered the running in place style.



Double Unders.

Criss-Cross:

Cross the arms at the elbows on the descending swing of the rope and jump through the loop. Uncross the arms on the next descending swing and repeat the process. This style is great when looking for a challenging way of jumping rope.



Criss-Cross.

Shadow Boxing:

This is often performed as a warm-up before using the heavy bag. What you do is punch in the air using the reflection in the mirror as your opponent. Then perform some joint rotation exercises.



Shadow Boxing.

Heavy Bag:

The heavy bag has been around for a long time because it has helped boxers improve their overall skills without the need of a partner. This is also good for beginners, since it will get them ready for sparring.

Many individuals have trouble learning the correct stance and footwork, so here is a brief explanation of the popular orthodox stance.

Stand with your feet about shoulder width apart

Take a step forward with your left foot

Your right foot should be kept at a 45 degree angle

Shift your weight to the balls of your feet

To keep proper balance, distribute your weight equally between your feet

Keep your knees slightly bent

Tuck your elbows to your sides

Place your fists at cheekbone level

Place your chin down and look up

Roll your shoulders slightly forward



Stance & Footwork.

Punches:

Below is a list of some of the punches you can try on the heavy bag.

Jab - A rapid straight punch thrown with the lead hand. The movement begins with a slight turn of the hips and waist followed by a straight punch.



Jab.

Cross - A straight punch thrown with the rear hand, while the lead hand is tucked against the jaw to protect the chin.



Cross.

Hook - A half circled punch thrown with either hand targeted to hit the side of the opponent's head. Keep your rear hand tucked against your jaw to protect your chin.



Hook.

Uppercut - A vertical punch thrown with the rear hand targeted to hit the opponent's chin. When performed correctly, an uppercut can ruin the opponent's balance.



Uppercut.

Bolo Punch - An arm punch where its power comes from the reduction of a circular arc instead of the conversion of your body weight. This punch is rarely used in boxing.



Bolo Punch.

Defense Techniques:

Here are some defense techniques you need to practice.

Slip - When the opponent throws a punch, rotate the hips and shoulders while turning the chin sideways to slip past the punch.

Parry - When the opponent throws a punch, quickly retaliate with a punch of your own to the opponent's wrist or forearm.

Bob & Weave - When the opponent throws a punch, move away from it by bending your legs and moving either right or left while bobbing your head under the punch.

Speed Bag:

One of the most effective ways to improve coordination and punching speed is by training with the speed bag. Beginners will have trouble utilizing the speed bag so keep practicing until you are able to get a steady rhythm for over 2 minutes. Once you are able to do that, divide your training into 3 five minute rounds.

Sparring:

Try to throw jabs, hooks and even uppercuts. Just like heavy and speed bag training, divide it into 3 5-minute rounds.

Weight Training:

Training with weights will increase your strength and muscle size. Boxers need to focus on compound movements such as deadlifts and squats, which virtually work the entire body. Exercises such as shoulder presses, pull-ups and crunches are also included in this program.

Reps:

For compound exercises, your reps will be 5, and for the rest of the exercises, reps will be 8. However, when you perform crunches and hanging leg raises, perform 25 reps. Use correct form on all exercises to prevent injury.

Rest:

In between sets, you should rest between 1 and 2 minutes to ensure your muscles have recovered.

Running:

HIIT should be used when running since it will increase both aerobic and anaerobic endurance capacities, and it will burn calories faster than any other form of cardio. Below is an explanation of how HIIT is performed.

Start with 5 minutes of warming up and stretching to get your body ready. Begin running at a regular pace for 1 minute, then increase the pace to 90 or 95% of your Maximum Heart Rate. Keep the pace going for 15 to 20 seconds, go back to the standard pace for 1 minute, and then repeat. Do this for 15 to 20 minutes and end it with a 5-minute cool down and stretch.

Stretching & Flexibility:

Include stretching in every workout day as it will prevent you from getting injured and increase your flexibility.

- [Standing Toe Touches](#)
- [Seated Butterfly Stretch](#)
- [One Leg Over Stretch](#)
- [Neck Circles](#)
- [Shoulder Circles](#)
- [Arm Circles](#)
- [Elbow Circles](#)
- [Wrist Circles](#)
- [Knee Circles](#)
- [Ankle Circles](#)

Equipment:

- Handwraps- To protect the bones in the hands.
- Gloves- To protect the hands from getting injured.
- Mouthpiece- To protect your teeth.
- Spar with a partner for 10 to 15 minutes.

FITBALL

1. Preparation

- music (cd) a player
- 6 fitballs, 1 rugby ball

2. Set

- divide you group into halves

3. Teach

Fitball is very similar to yoga. Yoga began in India between 5000 and 1000 B.C. It's a form of meditation. Today, many people participate in various form of yoga for strength and relaxation.

Rugby

Rugby was born in England. First rules were written in 1845.

4. Cues

- "Breathe Deep"
- Stay Balanced"
- Stretch & Inhale"
- Fold & Exhale"

Warm up

Rugby rep to five catches, one team must catch the ball 5 times to score the point. The first team who scores 5 points is the winner.

Lesson plan

- stand straight
- take the ball into your hands
- raise your hands above your head
- do overhead chop
- repeat 5 times
- stand straight with your hands above your head a ball in your hands and bend to sides 5 times to each side.
- stand straight
- the ball in both hands in front of you
- hand forward
- arms straight
- roll your ball on the floor in front of you
- arm straight
- flat line head to toes
- send elbows, pause
- extend arms

Hold ball in 2 hand

Step push out

Finish thumbs down

Everybody lie down on the floor, close your eyes and after 1 min stand up. A person who gets up and is the closest to 1 min time is the winner.

Gym Lesson Plan 1

Warm up



• **Body Weight Squat Exercise**

This body weight squat exercise is going to help work on form, flexibility, and developing strength in your legs.



Teach

• **Linear and Lateral Lunge Exercise**

This lunge exercise is going to work on both the players linear and lateral movements. The goal is to strengthen the legs and work on flexibility.



• **Military Press Exercise**

The military press exercise is great for building upper body strength and explosiveness, and is going to focus primarily on the shoulder muscles.



• **Pull Ups Exercise**

This chin ups and pull ups exercise is going to work on developing strength and muscle in the upper back and arms.



• **Push Up Variations**

This video is going to explain some different push up variations and also the correct form and technique for executing them.



• **Resistance Band Hip Abduction Slide Exercise**

This resistance band hip abduction slide exercise is going to work on opening up the hips, and also strengthening the players legs.

Lesson football

Warm up

1. Push-Ups

An "oldie but a goodie." This exercise, when performed correctly - with the elbows close to the trunk and no arching of the lower back - is a great upper body and core strengthening exercise. To build increased muscles size, perform four to five sets of 15 reps. If power is desired, more weight than your body might be needed, so a weighted vest may be used to increase the intensity of the movement. To improve power, three to four sets of five to six reps is the target. There should be total fatigue at the fifth or sixth rep. If there is not, increased intensity/weight will be needed.

2. Side Up

This exercise may look easy to execute, but it is a challenge for your hip muscles. This exercise targets the hip muscles that assist in lateral speed and agility. To perform this drill, lie on one side and separate the legs from each other (about a foot). Then, only using the lower forearm that is in contact with the ground for support, lift the hip off the ground and rise up as high as possible. Then return back down to the floor in a slow, rhythmic fashion. Furthermore, maintain the one-foot distance between the legs consistent throughout the entire movement. Perform three sets of 10 reps on each side.

3. Matrix Multi-Angle Lunges

The matrix multi-angle lunge is a combination of three different lunges. This exercise will strengthen the leg muscles to help improve movements in all directions. First is a lunge to the front, then to the side and then lunge backwards as if you're turning to chase someone. Perform six lunges in each direction for three sets. If bodyweight is too easy, grab some dumbbells or use a weight vest.

4. Single-Leg Squat

This drill will develop leg power to help improve speed on the field. Begin by standing on one leg in front of a sturdy chair then slowly lower the hips down to the seat of the chair. Gently touch the chair with the hips and then return back to the starting standing position. Attempt three sets of eight reps.

5. Triceps Chair Dips

This exercise will strengthen the triceps, which are critical in football because they assist in blocking, throwing and many other fundamental skills. In this exercise, start with your hands on the chair, knees bent and feet on the ground. Gradually lower the body down toward the floor while bending the elbows. Then, while pushing into the chair, return back to the starting position. Attempt three sets of 10 reps.

Teach

1 ball per group of 6 students. Play 2x10 minutes and change. 2 minutes break.

VOLLEYBALL

1) Preparation

- volleyball, a net, volleyball area

2. Divide you group in two halves.

3. Teach

The volleyball originated in the U.S.A.

The first match was held in 1895 in Massachusetts.

Williem G. Morgan a PE teacher for sport education invented the game.

4. Warm up

- teatcher divides a group into two teams,

- one team consists o minimum six persons it's possible to change pubils players during the game,

- the teams mus't stay in a line when they hit the ball they go at me and of the line.

Lesson plan

1. Volleyball exercise

2. Two teams play volleyball one team consists of 6 people. The team wich scores 25 points is the winner.

They play 3 sets an change sides.

Social Networking



1. Vocabulary

Match the words with the definitions. Then go to an Online Dictionary and check your answers by typing the words into the search box.

- | | |
|--------------------|---|
| 1 account | a a number of computers that are connected together so that they can share information |
| 2 network business | b the part of the Internet site where you can find general information about a person or business |
| 3 blog | c a small face that you put in a text message to show how you feel |
| 4 chat | d a way to send written messages from one computer to another |
| 5 email | e an agreement with a SNS or Internet provider to use their service |
| 6 emoticon | f an instant exchange of written messages with someone online |
| 7 home page | g an online diary entry to give news, comments, personal experiences |
| 8 post | h on computers or the Internet, but not in the real world |
| 9 virtual | i to look for information on a computer, especially on the Internet |
| 10 browse | j to put a message on the Internet for other people to read |

2. Pre-reading

What do you know about social networking? Do the quiz.

1 Social networking sites are virtual communities for people who ...

- | | |
|--------------------------------------|---|
| a have common friends and interests. | b have different friends and interests. |
| c live in the same place. | d want to meet face-to-face. |

2 On a social networking site, you can't ...

- | | |
|---|---------------------------------------|
| a find out what your friends are doing. | b look at other people's photographs. |
| c make new friends. | d shake hands. |

3 There is a social networking site called ...

- | | | | |
|------------|------------|------------|----------------|
| a Blogspot | b LinkedIn | c Facebook | d All of these |
|------------|------------|------------|----------------|

4 LinkedIn is a social network which helps people find ...

- | | | | |
|-------------|----------|---------|-------------------|
| a holidays. | b homes. | c jobs. | d family members. |
|-------------|----------|---------|-------------------|

5 On a social networking sites, users communicate with each other through...

- | | | | |
|---------|----------------|-----------|-----------------|
| a posts | b face-to-face | c letters | d None of these |
|---------|----------------|-----------|-----------------|

3. Vocabulary

- | | |
|---------|-----------------------------------|
| 1. :-) | a angry |
| 2. >-@ | b crying |
| 3. :-O | c embarrassed |
| 4. :-) | d sad |
| 5. ;-) | e smiling |
| 6. :-\$ | f sticking your tongue out |
| 7. :'(| g surprised |
| 8. :-P | h winking |

4. Reading

Read the text about Social Networking.

Social networking is an online platform that is used by people to build social networks or social relations with other people who share similar personal or career interests, activities, backgrounds or real-life connections. Social networking services (SNS) are interactive internet-based applications, User-generated content such as text posts, digital photos and videos, "tagging" and online comments are the lifeblood of SNS organisms. Users create service-specific user profiles about themselves for the site or "app" that are designed and maintained by the SNS organization. Social networking services facilitate the development of online social networks by connecting a user's profile with those of other individuals and/or groups who share similar interests or beliefs. Most social network services are web-based and provide means for users to interact over the Internet, such as by e-mail and instant messaging and online forums.

Social networking sites are varied and they incorporate a range new information and communication tools such as availability on desktop and laptops, mobile devices such as tablet computers and smartphones, digital photo/video/sharing and "web logging" diary entries online (blogging). Social networking sites allow users to share ideas, digital photos and videos, posts, and inform others about online or real world activities and events with people in their network. While in-person social networking, such as gathering in a village market to talk about events has existed since the earliest developments of towns, the Web enables people to connect with others who live in different locations, ranging from across a city to across the world. Depending on the social media platform, members may be able to contact any other member. In other cases, members can contact anyone they have a connection to, and subsequently anyone that contact has a connection to, and so on.

Social network services can be split into three types: socializing social network services are primarily for socializing with existing friends (e.g., Facebook); networking social network services are primarily for non-social interpersonal communication (e.g., LinkedIn, a career and employment-oriented site); and social navigation social network services are primarily for helping users to find specific information or resources (e.g., Goodreads for books).

5. Project

Choose a social networking site and prepare a presentation about it.

Talk about these things:

- what kind of network it is (social, film, special interest, virtual reality, etc.)
- special features (settings, etc.)
how users communicate (e-mail, chat, posts, etc.)
- the risks (open profiles, searches open to nonmembers, etc.)
- ways to be safe (age limits, privacy settings, etc.)
- what you like/dislike about it

BLOGGING



1. Pre-reading

Search for blog on the net. Then answer these questions:

- 1 Have you ever read a blog?
- 2 What was it about?
- 3 Have you ever considered writing your own blog?
- 4 What would you tell people about in your blog?

2. Vocabulary

Match the words 1–10 with the definitions a–j. Then do an Internet search for blogging and check your answers.

- | | |
|-------------|--|
| 1 archive | a the link to an individual blog post |
| 2 comment | b a key word used to label similar posts |
| 3 link | c a list, usually at the side of a blog page, that shows other blogs |
| 4 permalink | d a place to store old posts |
| 5 pingback | e a single entry written by the blogger |
| 6 platform | f a written reaction from a reader |
| 7 publish | g hardware or software used to host an application |
| 8 blogroll | h to make information available for everyone to read |
| 9 post | i notification to a blog or website that it is referenced or linked |
| 10 tag | j a connection between documents on the internet |

3. Reading

Read the text about Blogging.

A blog is a discussion or informational website published on the World Wide Web consisting of discrete, often informal diary-style text entries ("posts"). Posts are typically displayed in reverse chronological order, so that the most recent post appears first, at the top of the web page. Until 2009, blogs were usually the work of a single individual, occasionally of a small group, and often covered a single subject or topic. In the 2010s, "multi-author blogs" (MABs) have developed, with posts written by large numbers of authors and sometimes professionally edited. Blog can also be used as a verb, meaning to maintain or add content to a blog.

Many blogs provide commentary on a particular subject or topic, ranging from politics to sports. Others function as more personal online diaries, and others function more as online brand advertising of a particular individual or company. A typical blog combines text, digital images, and links to other blogs, web pages, and other media related to its topic. The ability of readers to leave comments in an interactive format is an important contribution to the popularity of many blogs. However, blog owners or authors need to moderate and filter online comments to remove hate speech or other offensive content. Most blogs are primarily textual, although some focus on art (art blogs), photographs (photoblogs), videos (video blogs or "vlogs"), music (MP3 blogs), and audio (podcasts). Microblogging is another type of blogging, featuring very short posts. In education, blogs can be used as instructional resources. These blogs are referred to as edublogs. According to critics and other bloggers, Blogger is the most popular blogging service used today.

4. Reading

Read the sentences about blogs and write T (True) or F (False).

- 1 A blog is an online diary.
- 2 You don't update it very regularly.
- 3 It gives general news, but not personal opinions.
- 4 Nobody can comment on a blog.
- 5 It has links to other websites or blogs.

5. Project

Research the good and bad blogs available on the Internet. Then make some notes about them.

GOOD	BAD
The Taylor Post tells us about stars, news, social issues...	

COMPUTERS

Why we use it, parts and functions



1. Writing

Write on a sheet of paper,

- Three ways you have used a computer already that day.
- How your lives be different without the computers,
- How much time you saved by using that type of computer

2. Categorize the various components as input, output and both.

Keyboard CD Barcode Reader Plotter DVD Microphone
 USB Speaker Mouse Optical Reader Diskette Printer
 Disk Camera Optical Disk Monitor Scanner

INPUT	OUTPUT	BOTH (INPUT&OUTPUT)

3. Vocabulary

Match the words about computer components to the pictures. Then do an Internet search and check your answers.

DVD READER



MONITOR

HARD DISK



KEYBOARD

RAM MEMORY



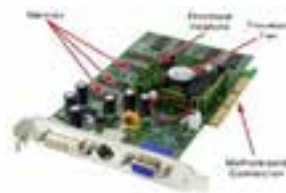
POWER SOURCE

PRINTER



MOUSE

MAINBOARD



FLASH DRIVE

SCANNER



BARCODE READER

GRAPHICS CARD



CPU

COMPUTER CASE

**4. Vocabulary**

Rearrange the letters and write the words

**5. Project**

Observe how computers are being used right here in your environment.

Make a research on how else you will be using a computer today.

USING INTERNET**1. Reading**

Why do we use it?

The Internet has changed our lives. In fact, people spend more and more hours on the Internet. The Internet is the modern source of information, delivered in multiple media: written word, visual graphics and images, video, and audio. People use the Internet to communicate with one another. Many people use the Internet to enjoy themselves and to engage in personal interests. The Internet provides an alternative to 9-5 workdays, as more and more people can work from home, or “telecommute”. More and more elementary, high school and university curricula require use of the Internet for school work. People also use the Internet to research, find and buy services and products.

2. Grammar (Simple present tense review)

Part A: Put the words in the right order to make questions.

1. nationality /of/ Mark Zuckerberg / the / what / is?
2. he /does / where / live?
3. old /how / he / is?
4. he /does / do / what ?
5. got /he / has / children / any ?
6. help /he / how / does / people ?

Part B: Find the answers to the questions above on the Internet. Write the answers down.

1.
2.
3.
4.
5.
6.

3. Vocabulary

Read and complete.

To send you must have an e-mail When you open the account, you must your e-mail and a Many people use their name in their e-mail address. For example, tonypearson@hotmail.com. Your password must be a You can and e-mails all day and all night.

REGISTER	SECRET	E-MAILS	RECEIVE
ADDRESS	SEND	PASSWORD	ACCOUNT

4. Writing

Write an e-mail to your friend. Here is an example for you. You can also get help from the Internet.

Dear Sachiko,

Hope you are well and that the second semester is going smoothly for you.

The other day when we were talking at the bus stop you mentioned a web page on which Linda Holkenson detailed her reasons for leaving.

If you don't mind, would you send me the URL for that web page if you still have it?

Thanks a lot.

Best regards,
Tim Brown

5. Project

Find information about your favourite celebrity on the Internet. Prepare a short presentation about him/her for your friends. Ask your friends to complete the chart while you are making your presentation.

Name:.....	Job:.....
Age:.....	Hobbies:.....
Address:.....	Children/Pets:.....

Setting up a Webpage: layout, design, backgrounds and colors

LESSON
5 (IT)

1. Speaking

Have you ever thought about having your own website to share with your family and friends?

Have you seen any personal websites on the Internet?

What do you like and dislike about personal websites you've seen?

What kinds of information do people tend to include on personal websites?

2. Writing

Make a diagram of what you might want to include on your web page. To get some ideas, you might want to go to Geocities and search through some of the personal websites

Example:



3. Reading

Read the instructions carefully for setting up a web page from the handout given and begin work.

Handout:

Setting up a Webpage

1. Yahoo E-Mail account : If you already have a Yahoo e-mail account, skip to step #2. If you don't have one, go to www.yahoo.com to create one. Once you're at the Yahoo website, under "Personal Assistant," click on "Sign

Up Now.” You’ll be taken to a page entitled “Welcome to Yahoo! Mail.” Under “Free Yahoo! Mail,” click on “Sign Up Now.” Follow all the instructions, and you’ll receive your own e-mail account.

2. Geocities website : Now go to Geocities , and under “Sign In Now,” type in your Yahoo ID and Password. You’ll be taken to a new page. Click on “Yahoo! PageBuilder.” You’ll be taken to another new page — click on “Launch PageBuilder.” The PageBuilder program will now load — it will take a few minutes, so be patient.

Now save your website: PageBuilder will open, and you’ll have the first page of your website — blank. First of all, save it by clicking the “save” disk at the top of the page. A window will open, and type in the word “index” and click on OK. You now have a website.

3. Background : The first thing you’ll need for your website is a background. Open a new browser and go to www.grsites.com . Click on “Absolute Background Textures Archive,” search through the different backgrounds available by color and texture, and choose one you’d like to use. You will need to save the background so that you can upload it to your website.

Now save your background: You’ll need to go into “My Pictures” on your computer and create a new folder for your website. After you’ve done that, right click on the background you chose, and then click on “Save as Picture.” The “Save as Picture” box will open — find the folder you created earlier, open it, name the background in the “file name” box, and save it.

Now upload your background: Go back to your PageBuilder. Go up to the top of the page and click on “Format” and then “Background” and the “Background Properties” box will open. Click on “upload” and the “Upload Files” box will open. Click on “Browse” and the “Choose Files” box will open. Find your folder and then the background you downloaded and double click on it to open it. Now back in the “Upload Files” box, click on “upload.” Your background will now upload — again, be patient because it might take some time. Finally, back in the “Background Properties” box, click on “user files,” find your background as you named it, click on it, and when it appears in the “preview box,” click okay. Finally — you have a background. If you don’t like it, go back to the original website and repeat the process until you find one you like.

4. Second page . On PageBuilder, click on the “New” button at the top of the page and a new page will open. Click on the “Save” button and type in “page2” in the window. Now bring in a background and a logo for your second page as you did for your first. When you’ve done this, click “Save” again to save the page.

5. Logo : Go back to www.grsites.com and click on “GRSites Logo Maker.” Choose a style from the six available logos, click on it, and follow the online instructions. Now save it just like you saved your background into “My Pictures.” Then upload your logo using the “Pictures” button at the top of PageBuilder.

6. Buttons . Now you’re going to create some link buttons for your webpage. Go back to www.grsites.com and click on “GRSites Button Maker.” Follow the online instructions and make at least 3 buttons — 1 to use as a link to your second page, one to use as a link on your second page back to your “home” page, and one to use as a link to another website.

Now save your buttons to “My Pictures” and then upload your buttons to your website using the “Pictures” button as you did in #4 above.

7. Links . Now that you have the buttons you created on your website, you’re ready to link them. To create a link, select or left-click on the button and then click on the “link” at the top of the PageBuilder page. For your link to the second page of your website, click on the down arrow and bring up “My Page” in the box, and then type in “page2.” For a link to another website, click on the down arrow and bring up “Web URL” in the box, and then type the web address such as www.secondspin.com . For the “home” button on your second page, click on the down arrow and bring up “My Page” and then type in “index.”

8. Layered textbox . First of all, in PageBuilder, click on “Format” and “Page Properties,” and then check the “Layered HTML” box. Now click on “Text” at the top of the page. Using the arrows on the text box, make the box larger — at least 2” wide by 3” long. Now click again on the text box, go up to the “Fill” button at the top of the page (bucket with paint spilling out), find a color you like for the background of your text box, and click on

it. Your text box will now fill with that color. Now type in one of 2 letters in the box, and go up to the “Text fill” button at the top of the page (a large T with paint spilling over) and click on the same color you use to fill the text box. You’ll now have a solid-colored box.

Click on “Text” again at the top of the page and type something in a contrasting color to the solid box. Now move your text box of writing on top of the solid-colored box, and you have a layered text box.

9. Photos . Find at least 3 photos on the Internet for each of the 2 pages of your website (6 total), download them to “My Pictures,” and upload them to your website using the “Pictures” button as you did before. For one of your photos, create a frame around it using a “text fill box” as in #8 above. Also, for each of your photos, create a caption using a “text box” as you did in #8.

10. Clip art . Find one or two clip art graphics to put on your website. You can use the “GRSites” you used before or any others you can find on the Internet. Download clip art the same way you downloaded photos.

11. Counter. In PageBuilder, click on “Insert,” “Basics,” and “Counter.” A counter will appear on your webpage (you only need this on one of your pages). Now double-click on the counter and a new box will open. Check the style you like on the left, the font and background colors, the size, and the number of digits you want to appear on your counter. Now click OK. You won’t be able to actually see the numbers until you go to your actual web page. The counter will tell you how many visitors you’ve had to your site.

12. News link . Click on “Insert” and “Headlines” and choose one of the categories listed. Place the link wherever you’d like on one of your webpages.

13. Yahoo!igans . Click on “Insert” and “Yahoo!igans” and choose one of the categories listed. Place the link wherever you’d like on one of your webpages.

14. Page transitions . This means how the page website opens — blend, circle in, etc. Click on “Insert,” “Page Effects,” and “IE Page Transitions.” Click on OK and follow the instructions in the box that opens. Then click OK again and a little icon will appear on your PageBuilder. You’ll have to go to your actual website to view the transition. If you’re not happy with the one you chose, go through the process again and redo it until you find one you like.

15. Other effects . Feel free to experiment with any of the other “Page Effects” under “Insert.” Please use no more than two of these effects.

16. Page size . If you need more room on your page or pages, click on “Format” and “Page Properties” and change the “width” and/or “height” settings.


17. View your website. Go to www.geocities.com/youryahooID and you’ll be taken to the actual website you created. Check to see if all the links work properly and if you’re happy with your layouts. If you need to make changes, go back to your PageBuilder.

4. Project Evaluation

Score yourself in the rubric on how well the elements in the handout were incorporated into your website.

RUBRIC FOR WEB PAGE PROJECT

Student Name _____ Date: _____

	Points				
Category	5	10	15	20	Total
Layout/Design	The pages are unattractive. Text is difficult to read. The backgrounds are distracting.	The pages appear “busy” or “boring”. Text may be difficult to read. The backgrounds are somewhat distracting.	The pages are eye-catching and attractive. Text is easy to read. The backgrounds are subtle and appropriate.	The pages are well organized with tables. Text spacing and alignment make reading easy. The backgrounds enhance the page.	
Graphics	There are no photos, icons or clip art or they are inappropriate or of low quality.	Photos are fuzzy; icons and clip art do not “fit” with the topic. Too many pictures make the download time slow.	Photos, icons, and clip art are appropriate, of high quality, and download fairly quickly.	Photos, icons, and clip art are used creatively and may follow a theme.	
Information	Information is poorly written, inaccurate, or incomplete.	Information could be better written and too much information is given in each section.	Information is well written and interesting to read and is presented in short sections.	Information is creatively written and cleverly presented.	
Navigation/Links	The user may become lost or links may be missing or not working.	The user may become confused when navigating between pages. Some links may not work.	Links are consistent and easy to find so that the user can easily navigate back and forth through pages.	Links are created with images and icons to enhance the text links.	
Creativity	Minimal effort. Poor layout/design. Did not incorporate required attributes, graphics, did not resize pictures, inappropriate graphics.	Was clever at times; incorporated most of the attributes; used a limited variety of appropriate graphics.	Was well done and interesting to the audience; used a good variety of appropriate graphics.	Presented with originality. Excellent layout/design work incorporating all required attributes, great variety of appropriate graphics.	
Final Grade					





Fundusze Europejskie



Erasmus+

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