



Tandemová výuka



Spolufinancováno
Evropskou unií

Ročník:	9.
Vyučovací předmět:	Občanská výchova
Téma hodiny:	Globální problémy/Global issues
Klíčová slova AJ + ČJ:	Problems, temperature, rubbish, plastic, climate, icebergs, rain forests, hladomor, přelidnění, živočichové, klima, emise.
Anglické fráze:	Where are temperatures changing? What is happening in the Arctic? How does global warming affect our planet?
Časový harmonogram:	5min úvod, 2 skupiny po 35min, 5min závěr
Popis vyučovací hodiny:	<ol style="list-style-type: none"> 1. Úvod – význam slova globální 2. Rozdělení do dvou skupin 3. Jedna skupina (česká část) – Kartičky - přiřazování důsledků k různým globálním problémům (diskuse). Druhá skupina (anglická část) – slovní zásoba, odpovědi na otázky. Skupiny se prohodí.
Reflexe: (jakým způsobem byla provedena)	Zhodnotit, jakým způsobem jsme schopni chránit naši planetu. Je vůbec možné globální problémy vyřešit? A jak?
Odkazy:	<i>Project four edition 3. 4.</i> Oxford University Press, 2014. ISBN: 9780194764674.

1. Climate Change

The long-term changes in Earth's weather patterns, especially the rise in temperature and increased frequency of extreme weather events.

2. Pollution

The presence of harmful substances in the environment, such as air, water, or soil contamination, which can harm living organisms.

3. Deforestation

The cutting down of trees in large areas which leads to the destruction of forests and loss of habitats for animals.

4. Global Warming

The gradual increase in Earth's temperature caused by human activities, like burning fossil fuels, which leads to climate change.

5. Overpopulation

A situation where the number of people living in an area is too large for the resources available, leading to shortages.

6. Endangered Species

Animals or plants that are at risk of becoming extinct due to factors like habitat loss, pollution, or overhunting.

7. Waste

Unwanted materials or garbage, such as plastic, food scraps, or other discarded items that can damage the environment.

8. Renewable Energy

Energy that comes from natural sources like the sun, wind, and water, which can be reused and doesn't harm the environment.

9. Water Scarcity

A lack of sufficient water to meet the needs of people or animals, which can happen due to drought or pollution.

10. Sustainable Development

The process of improving the quality of life for people while protecting the environment and using resources wisely so they last for the future.

2 a *** Answer the quiz questions.

HOW AWARE ARE YOU?

How much do you know about the world's problems? Do the quiz and find out.

- 1 Who or what is causing global warming?
 - a volcanoes
 - b people
 - c animals and plants
- 2 Where are temperatures changing?
 - a in the sea
 - b in the air
 - c in the sea and the air
- 3 Which is the cleanest form of energy?
 - a the sun
 - b oil
 - c wood
- 4 What has happened in the Arctic and the Antarctic?
 - a A lot of the ice has gone.
 - b Seals and penguins have gone.
 - c The ice has got warmer.
- 5 Which form of transport is the cleanest?
 - a taking the bus
 - b flying in a plane
 - c riding a bike
- 6 Which of these things do not decompose when we put them on a rubbish dump?
 - a cardboard boxes
 - b plastic bags
 - c paper tissues

b *** Check your answers below and read your results.

RESULTS

- 0-2 correct: Oh dear! You must learn about the world's problems.
 2-4 correct: Not bad! You know some things.
 4-6 correct: Well done! You know a lot.

Rubbish

3 a *** Put the letters in the correct order to complete the expressions.

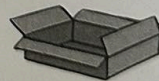
- | | |
|---------------------------|--------|
| 1 a plastic <u>bottle</u> | tbeolh |
| 2 chewing _____ | mug |
| 3 a crisp _____ | cetkaj |
| 4 a foil _____ | rayt |
| 5 food _____ | kacpn |
| 6 a polystyrene _____ | pcu |
| 7 a drinks _____ | nac |
| 8 a cardboard _____ | xbo |
| 9 a plastic _____ | gba |
| 10 a sweet _____ | parwpi |
| 11 a paper _____ | suties |
| 12 a bottle _____ | pto |

b Label the pictures.



1 a bottle top

2



3

4



5

6

Kartičky pro logický řetězec

1 Odlesňování tropických pralesů 🌳✂️

👉 Ničení přírodních ekosystémů, úbytek CO₂ absorbérů.

2 Změna klimatu 🌍🔥

👉 Růst teploty, extrémní počasí, tání ledovců.

3 Sucho a nedostatek pitné vody 🚫💧

👉 Snížení úrody, neúroda v zemědělství, hladomor.

4 Hlad a podvýživa 🍞🌿

👉 Miliony lidí bez přístupu k jídlu, oslabená imunita, nemoci.

5 Nemoci a epidemie 🦠😷

👉 Horší hygienické podmínky, rozšíření malárie, cholery, COVID-19.

6 Migrace a uprchlické krize 🏃🌍

👉 Lidé prchají do jiných zemí kvůli neúrodě, válkám, suchu, ekonomickým problémům.

7 Sociální nepokoje a konflikty ⚔️💣

👉 Boje o zdroje, politická nestabilita, války.



Tandemová výuka



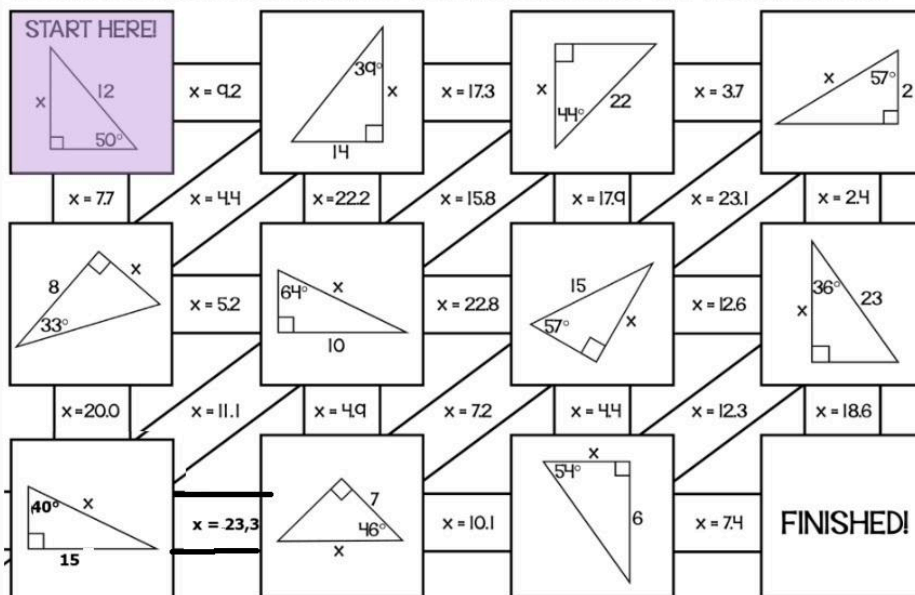
Spolufinancováno
Evropskou unií

Ročník:	9.
Vyučovací předmět:	Matematika
Téma hodiny:	Trigonometry
Klíčová slova AJ + ČJ:	Sinus, cosinu, tangens, cotangens (stejná slova v čj i aj, různá výslovnost)
Anglické fráze:	How many degrees.. ? What is size of...?
Časový harmonogram:	5 min úvod, 25 min. práce ve skupinách (po 3 až 4 žácích) + vyhodnocení, 15 minut matematické bludiště + vyhodnocení,
Popis vyučovací hodiny:	<ol style="list-style-type: none"> 1. Úvod: Seznámení s cílem hodiny, rozdělení žáků do skupin 2. Řešení slovních úloh s goniometrickými funkcemi (skupinová práce) 3. Řešení bludiště
Reflexe: (jakým způsobem byla provedena)	Žáci ústně zhodnotí své matematické a jazykové znalosti.
Odkazy:	https://www.madebyteachers.com/products/right-triangle-trig-ratios-digital-activity-maze/ https://www.cazoommaths.com/maths-worksheet/trigonometry-d-word-problems-with-clues/

More engaging than a worksheet!

Trig Ratios *digital maze*

Directions: Begin at "Start Here!" and find the missing side of the right triangle. Use your answer to move to the next square. Continue until you reach "Finished." Use the pieces on the side to "color" your maze as you go.

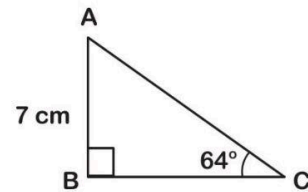


Trigonometry (D) Word Problems (With Clues)

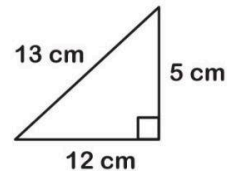


Give answers to 3 significant figures.

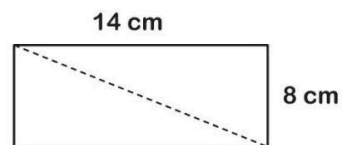
- 1) ABC is a right-angled triangle.
AB = 7 cm, angle ABC = 90° and angle ACB = 64° .
Calculate the length of BC.



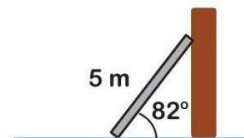
- 2) The lengths of the sides of a right-angled triangle are 5 cm, 12 cm and 13 cm.
Work out the size of the other two angles of this triangle.



- 3) The perimeter of a right-angled triangle is 24 cm. The length of one of the sides is 10 cm, the length of the other side is 8 cm. Calculate the size of the smallest angle of this triangle.
- 4) A rectangle has a length of 14 cm and width of 8 cm.
What angle does the diagonal make with the longest side?



- 5) A ladder is 5 m long. The ladder rests against a vertical wall. The foot of the ladder rests on horizontal ground. The ladder makes an angle of 82° with the ground. How far up the wall does the ladder reach?





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Spolufinancováno
Evropskou unií

Ročník:	9.
Vyučovací předmět:	Chemie
Téma hodiny:	Filtrace / Filtration
Klíčová slova AJ + ČJ:	filtration, mixture, filter paper, laboratory stand, funnel, solid particles, liquid, glass stick, beaker, filtering circle filtrace, směs, filtrační papír, stojan, nálevka, pevné částice, kapalina, skleněná tyčinka, kádinka, filtrační kruh
Anglické fráze:	
Časový harmonogram:	5 min úvod, 3 skupiny po 12 min, 5 min závěr
Popis vyučovací hodiny:	<ol style="list-style-type: none"> 1. Úvod: princip filtrace + slovíčka na tabuli 2. 3 skupiny žáků – slovíčka + princip u filtrační aparatury v češtině, slovíčka + princip u filtrační aparatury v angličtině, doplnění PL
Reflexe: (jakým způsobem byla provedena)	Žáci uvedou, kde se můžeme s filtrací setkat v běžném životě v JČ a AJ
Odkazy:	https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSgPd0h5BHDgEIRt8Fvne-XJcz-0LcdaeIXNQ&s obrázek v PL

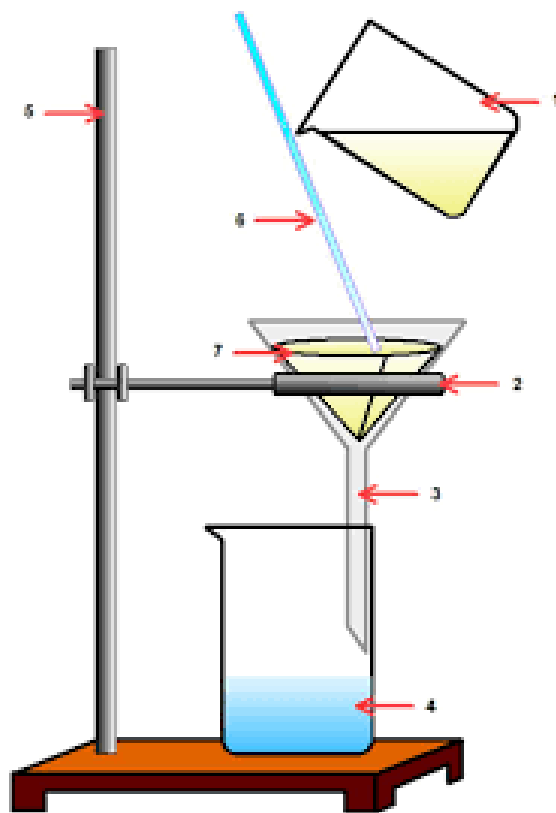
FILTRATION

Names: _____

1. Theory:

When you separate mixture of solid and liquids, you can use filtration process.

2. Describe filtering process:



Use these words: mixture, laboratory stand, funnel, filter paper, solid particles, liquid, glass stick, filtering circle, beaker









Tandemová výuka



Spolufinancováno
Evropskou unií

Ročník:	9.
Vyučovací předmět:	Fyzika
Téma hodiny:	The Solar System Superalives
Klíčová slova AJ + ČJ:	Jupiter, Mercury, the Sun, Neptune, Venus, Saturn, Mars, Uranus, Earth, superlatives
Anglické fráze:	
Časový harmonogram:	10 min úvod, skupiny 20 min, kvízy ve dvojicích 15 min
Popis vyučovací hodiny:	<p>Students complete facts about the solar system with superlatives and then used the sentences in a quiz.</p> <ol style="list-style-type: none"> 1. Úvod: Superlatives and their rules 2. 2 skupiny žáků Students A/B: <ul style="list-style-type: none"> - utvoření správného třetího stupně a zapsání do věty - kontrola v rámci celé skupiny 3. Individuální vyhledávání planety, které se informace týká (práce s chromebooky) 4. Vzájemná kontrola studentů A/B ve dvojicích- quiz
Reflexe: (jakým způsobem byla provedena)	Kontrola vypracovaných listů navzájem student A/B
Odkazy:	https://www.teach-this.com/search?searchword=solar%20system&searchphrase=all&limit=3

Student A

A. Complete each solar system fact below with one of the adjectives in its superlative form.

heavy	high	short	hot	close
deep	dry	frequent	small	dark

1. Lasting less than ten Earth hours, the planet with the day is...
2. Just 4,879 km in diameter, the planet is...
3. 300 times the weight of the Earth, the object in the solar system is...
4. Reflecting the least amount of light, the planet is...
5. With an average temperature of 465 degrees, the planet is...
6. With no rainfall or humidity, the planet is...
7. You wouldn't think it, but the planet to Earth is...
8. With 82 in total, the planet with the number of moons is...
9. With violent weather occurring regularly, the planet with the storms is...
10. With a depth of 2 km, the valley in the solar system is found on...

Student B

A. Complete each solar system fact below with one of the adjectives in its superlative form.

light	cold	large	bright	high
wind	far	wet	long	fast

1. Orbiting at a rate of 47 km per second, the moving planet is...
2. With temperatures of -214 degrees, the planet is...
3. Sometimes visible from Earth, the planet is...
4. More than 4.5 billion km away, the planet from the sun is...
5. With a diameter of 1.4 million km, the object in the solar system is...
6. Mons, the volcano in the solar system, is found on...
7. With 70% water, the planet in the solar system is...
8. Lasting 243 Earth days, the planet with the day is...
9. With a constant breeze, the planet is...
10. Weighing significantly less than the rest, the planet is...

Answer key				
1. Mercury	2. Neptune	3. Venus	4. Neptune	5. the Sun
6. Mars	7. Earth	8. Venus	9. Neptune	10. Saturn



Answer key				
1. Jupiter	2. Mercury	3. the Sun	4. Neptune	5. Venus
6. Venus	7. Mercury	8. Saturn	9. Neptune	10. Mars



Answer key

Student A

- | | |
|-------------|------------------|
| 1. shortest | 6. driest |
| 2. smallest | 7. closest |
| 3. heaviest | 8. highest |
| 4. darkest | 9. most frequent |
| 5. hottest | 10. deepest |

Student B

- | | |
|--------------|--------------|
| 1. fastest | 6. highest |
| 2. coldest | 7. wettest |
| 3. brightest | 8. longest |
| 4. furthest | 9. windiest |
| 5. largest | 10. lightest |





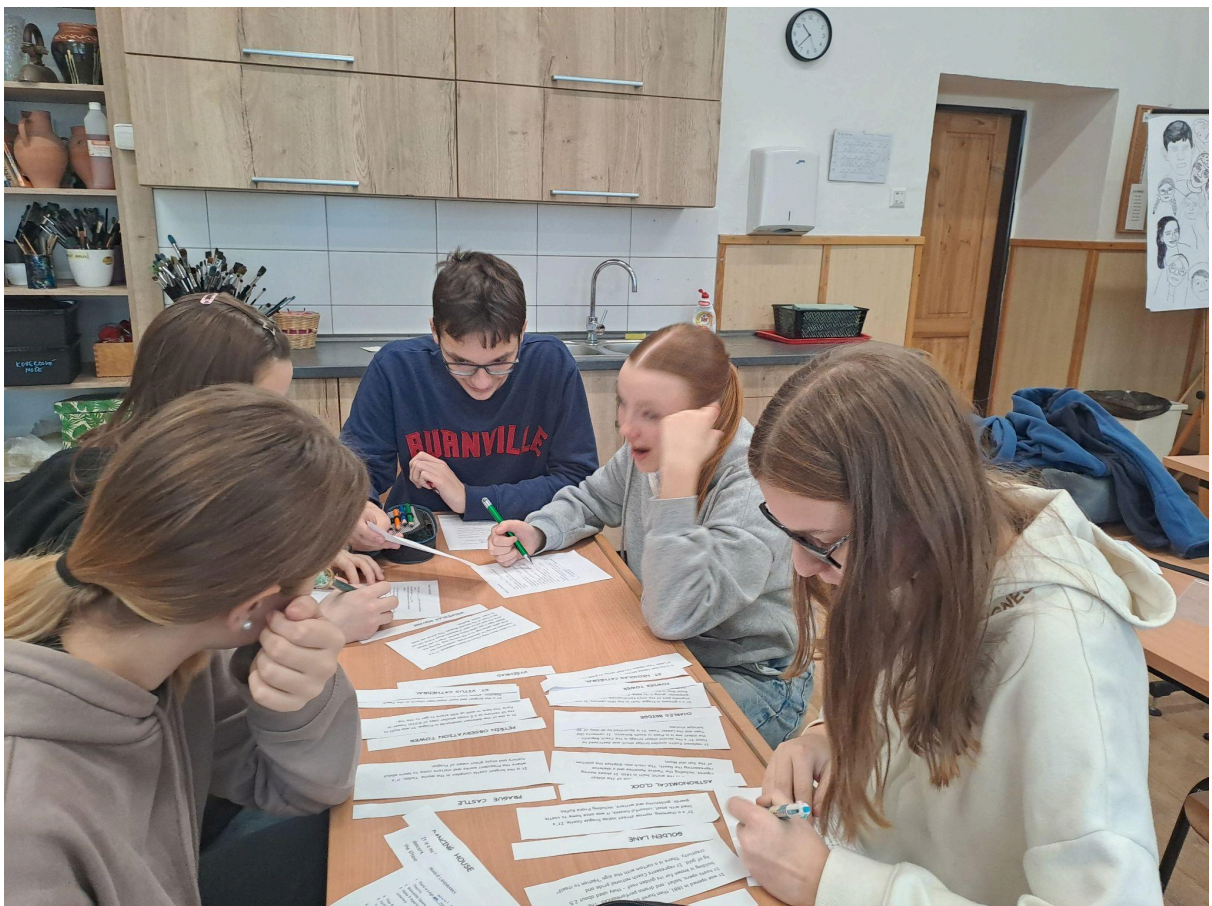


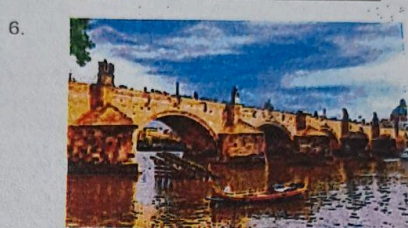
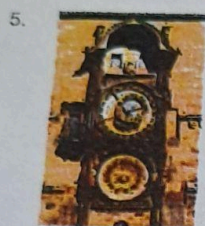
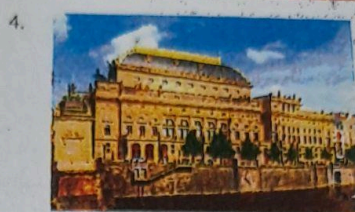
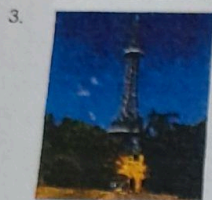
Tandemová výuka



Spolufinancováno
Evropskou unií

Ročník:	9.
Vyučovací předmět:	zeměpis
Téma hodiny:	Prague
Klíčová slova AJ + ČJ:	Prague Castle, Dancing House, The National Theatre, Petřín observation tower, Astronomical clock, Charles Bridge, Golden Lane, Wenceslas Square, Powder Tower, St Vitus Cathedral, St Nicholas Cathedral Apostles, goldsmith, nation to itself
Anglické fráze:	
Časový harmonogram:	5 minut úvod, rozdělení do 2 skupin – po 20 min střídání
Popis vyučovací hodiny:	1. Úvod, rozdělení do skupin 2. Přiřazení anglických názvů pražských památek k obrázku. 3. Čtení a přiřazení popisu památky k obrázku
Reflexe: (jakým způsobem byla provedena)	Doplnění informací z popisu do vět v pracovním listu
Odkazy:	





It is the largest castle complex in the world. Today, it's where the President works and visitors come to learn about history and enjoy great views of Prague.

It is a modern building with a curvy design, resembling two dancers. It's also called "Fred and Ginger." It's located by the Vltava River.

It's the largest and most important church in the Czech Republic, where kings were crowned and are buried. It is also the home of Crown Jewels.

It was opened in 1881, then burnt out and rebuilt again. It hosts opera, ballet, and drama performances. The building is known for its golden roof - they used about 2.5 kg of gold. It represents Czech national pride and creativity. There is a curtain with the sign "Nation to itself"

It is an ancient fortress in Prague overlooking the Vltava River. It dates back to the 10th century and is associated with Czech legends about Horymír, Šemík and Libuše. There is a historic church and the famous cemetery where notable Czech figures are buried.

It's a charming, narrow street inside the Prague Castle. It's lined with small, colourful houses, and it was once home to castle guards, goldsmiths and writers, including Franz Kafka.

It's located in the Old Town Hall - one of the oldest working clocks in the world, built in 1410. It shows moving figures, including the Twelve Apostles and a skeleton representing Death. The clock also displays the position of the Sun and Moon.

It's a gateway in Prague, built in the 15th century. It was originally part of the city's fortifications and stored gunpowder, giving it its name. It is the beginning of the Royal Way to the Prague Castle - it was the traditional coronation route of Czech kings.

It is one of the dominant landmarks in Prague. It was built in the 19th century as a 5 times smaller copy of the Eiffel Tower in Paris. You need to walk up 299 stairs to get to the top.

It replaced Judith's wooden bridge, which was destroyed by a flood. It's the second oldest bridge in the Czech Republic - the oldest one is in Písek in South Bohemia. It connects Old Town and the Lesser Town. It is decorated by an alley of 30 baroque statues.

It's a place where many historical events happened. It is a traditional setting for demonstrations, celebrations and other public gatherings. It is 750 metres long. During the Middle Ages, it was called the Horse Market. Later, it was named after the main patron saint of Bohemia, whose statue you can see in front of the National Museum. This statue was made by Josef Václav Myslbek.

It is the most famous baroque church situated in the centre of the Lesser Town Square. You must notice its green roof.

PRAGUE LANDMARKS

1. There is a sign _____ on the curtain in the National Theatre.
2. Wenceslas Square is _____ m long.
3. Name 5 important people who are buried at Vyšehrad cemetery:
4. The Royal Way starts at _____
5. Petřín observation tower is _____ times smaller than the Eiffel Tower in Paris.
6. It was used _____ kg of gold to decorate the roof of the National Theatre.
7. The Dancing House is also called _____ after two famous dancers.
8. The statue of St. Wenceslas was made by _____.
9. St. Vitus Cathedral is a home of _____ and Czech _____ are buried here.
10. _____, _____ and _____ lived in Golden Lane.
11. Wenceslas Square was originally called _____
12. _____ Apostles go round at the Astronomical Clock.
13. _____ has a green roof.

14. Charles Bridge replaced _____ bridge and there are _____ baroque statues.

DANCING HOUSE

PRAGUE CASTLE

PETŘÍN OBSERVATION TOWER

THE NATIONAL THEATRE

ASTRONOMICAL CLOCK

CHARLES BRIDGE

GOLDEN LANE

VYŠEHRAĐ

WENCESLAS SQUARE

ST. NICHOLAS CATHEDRAL

POWDER TOWER

ST. VITUS CATHEDRAL



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Evropskou unií

Ročník:	9.
Vyučovací předmět:	Přírodopis
Téma hodiny:	Volcanoes
Klíčová slova AJ + ČJ:	lava chamber, main vent, side vent, lava flow, volcanic bombs, crater, ash fall, steam, secondary cone, eruption cloud
Anglické fráze:	
Časový harmonogram:	5 minut úvod, nácvik výslovnosti + doplnění diagramu - 10 min, vyhledávání informací - 20 min, kontrola
Popis vyučovací hodiny:	<ol style="list-style-type: none"> 1. Úvod 2. Trénink výslovnosti 2. Přřazení anglických názvů k obrázku sopky 3. Vyhledávání informací o zajímavých světových sopkách + doplnění do anglických vět 4. Kontrola
Reflexe: (jakým způsobem byla provedena)	K názvu sopky říci informaci a vyjmenovat části sopky
Odkazy:	<p>https://www.superteacherworksheets.com/volcanoes.html</p> <p>chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.superteacherworksheets.com/rocks-earth/volcano-diagram_CA_NOD.pdf</p>

1. In 1815 the eruption of volcano..... in Indonesia was the largest, deadliest in recorded human history. About people died.
2. The largest volcano we know is on Mars. Its name is It is tall.
3. Volcano is famous for its eruption in 79 AD. Roman Empire cities like and were completely destroyed.
4. on the continent is the southernmost volcano on the Earth.
5. Volcanoes are named after Roman mythology. Vulcan was a god of He made weapons in a volcano. If he got angry and hit his hammer too hard, it would erupt.
6. in 1883 might have made the loudest sound ever. Even km away. It was about decibels.
7. Many islands are made thanks to volcanoes. For example on the equator in Ecuador or Spanish near Africa. The biggest volcano-made island is
8. is a world famous volcano. It is the highest point in Japan.
9. The Ring of Fire stretches around the Ocean. It is nearly miles long and there are about volcanoes.
10. Earth has about active volcanoes.





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Ročník:	9.
Vyučovací předmět:	dějepis
Téma hodiny:	Studená válka – Cold War
Klíčová slova AJ + ČJ:	The Iron Curtain – železná opona, The USA, The USSR, democratic regime – demokratický režim, low/high standard of living – nižší/vyšší životní úroveň, personal freedom – osobní svoboda, persecution of political opposition - pronásledování politické opozice, state ownership – státní vlastnictví, private ownership - soukromé vlastnictví market economy -tržní ekonomika capitalism - kapitalismus
Anglické fráze:	Say what is typical for the WEST and EAST
Časový harmonogram:	5 min – úvod do hodiny 15 min – anglické a české výrazy - tvoření správných dvojic 15 min – vojenské a hospodářské pakty 10 min kontrola a hodnocení lekce
Popis vyučovací hodiny:	<ul style="list-style-type: none"> - úvod do hodiny, téma, rozdělení do skupin - skupinová práce – každý žák dostane PL s českými a anglickými výrazy a společně ve skupině žáci tvoří správné dvojice výrazů. (Match two phrases together) - práce s učebnicí – vojenské a hospodářské pakty Západu a Východu, doplnění do tabulky - kontrola, hodnocení hodiny
Reflexe: (jakým způsobem byla provedena)	Say what is typical for the WEST and EAST Podrobná reflexe v následující hodině dějepisu
Odkazy:	

English	Czech

USA nižší životní úroveň soukromé vlastnictví

potlačování lidských práv state ownership The Iron Curtain

The USSR (The Union of Soviet Socialist Republics private ownership

persecution of political opposition high standard of living

státní vlastnictví SSSR demokratický režim

vyšší životní úroveň the USA market economy

disregard for human rights osobní svoboda pronásledování politické opozice

tržní ekonomika kapitalismus democratic regime železná opona

low standard of living capitalism personal freedom

WEST		EAST
	Vojenské sjednocení	
	Hospodářské sjednocení	