UDA CLIL – THE SOLAR SYSTEM

1. IDENTITÀ

👩‍🏫 **Insegnante titolare:** [Da compilare]
👥 **Eventuale compresenza:** [Da compilare]
🏫 **Scuola:** [Da compilare]
👧 **Classe:** Seconda Secondaria di Primo Grado
🗣️ **Lingua veicolare:** Inglese
📚 **Discipline:** Scienze e Inglese
GB **Livello linguistico / Pre-requisiti**: A2 – comparativi, superlativi, present simple, lessico base dello spazio.
🗓️ **Periodo:** [Es. Marzo–Aprile 2026]
⏰ **Monte ore:** 6 ore
📘 **Risorse adottate:** NASA Kids, ESA Education, modelli 3D, schede operative, quiz digitali
• Sitografia:
https://www.bbc.co.uk/bitesize/topics/zvrrd2p
https://spaceplace.nasa.gov/
https://spaceplace.nasa.gov/menu/solar-system/
https://science.nasa.gov/solar-system/
https://education.nationalgeographic.org/resource/designing-solar-system/

🧪 **Titolo del modulo:** *The Solar System*

2. MODALITÀ

🧠 **Strategie**
Cooperative Learning • Learning by Doing • Role Play • Edutainment • TPR • Problem Solving
🛠️ **Strumenti**
LIM • PC/tablet • modelli 3D • video • Kahoot
📦 **Materiali**
Schede dati operative • immagini astronomiche • glossario bilingue • mappe concettuali
🏫 **Ambienti**
Aula • laboratorio di scienze e informatica • spazi aperti

3. PROGETTAZIONE

🔍 **Input e motivazioni**
Interesse naturale verso lo spazio • uso dell'inglese per contenuti scientifici • approccio cooperativo • stimolo alla curiosità
🎯 **Output**
Obiettivi generali
Comprendere il Sistema Solare • usare il lessico astronomico • sviluppare abilità linguistiche • lavorare in gruppo

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Obiettivi disciplinari
Riconoscere pianeti e caratteristiche • comprendere rotazione e rivoluzione • distinguere pianeti rocciosi/gassosi • ruolo del Sole
Obiettivi linguistici/comunicativi
Comprendere parole chiave • produrre frasi descrittive • comprendere istruzioni • rispondere a domande • usare comparativi/superlativi

4. LE 4 C

LE 4 C	Descrizione Attività	Obiettivi Specifici
Content	Analisi della struttura del Sole e dei pianeti.	Classificare i corpi celesti e descriverne le caratteristiche fisiche.
Communication	Discussione sui dati planetari usando comparativi e superlativi.	Produrre descrizioni tecniche e confrontare oggetti astronomici in L2.
Cognition	Analisi e interpretazione di tabelle di dati scientifici.	Sviluppare abilità analitiche e deduttive partendo da dati numerici.
Culture	Esplorazione delle missioni internazionali (NASA/ESA).	Riconoscere l'astronomia come sforzo scientifico globale e interconnesso.

⭐ ORA 1 – Introduction with Glossary + Concept Map + Video Exploration

Solar System	Sistema Solare	🌌
Sun	Sole	🌞
Planet	Pianeta	🪐
Orbit	Orbita	🔄
Rotation	Rotazione	🔁
Revolution	Rivoluzione	🌀
Rocky planet	Pianeta roccioso	🪨
Gas giant	Gigante gassoso	🌪️
Ice giant	Gigante ghiacciato	❄️
Asteroid	Asteroide	🪨
Comet	Cometa	☄️

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Dwarf planet	Pianeta nano	🟤
Gravity	Gravità	🧲
Atmosphere	Atmosfera	🌫️
Surface	Superficie	🗺️
Temperature	Temperatura	🌡️
Moon	Luna	🌙
Star	Stella	⭐
Telescope	Telescopio	🔭
Space probe	Sonda spaziale	🚀
Galaxy	Galassia	🌌
Milky Way	Via Lattea	🌌
Light-year	Anno luce	💡
Crater	Cratere	🕳️
Axis	Asse	📏
Eclipse	Eclissi	🌘
Meteor	Meteora	☄️
Meteorite	Meteorite	🪨
Nebula	Nebulosa	🌈
Hydrogen	Idrogeno	H
Helium	Elio	He
Solar wind	Vento solare	🌬️
Magnetic field	Campo magnetico	🧲
Spacecraft	Navicella spaziale	🛸

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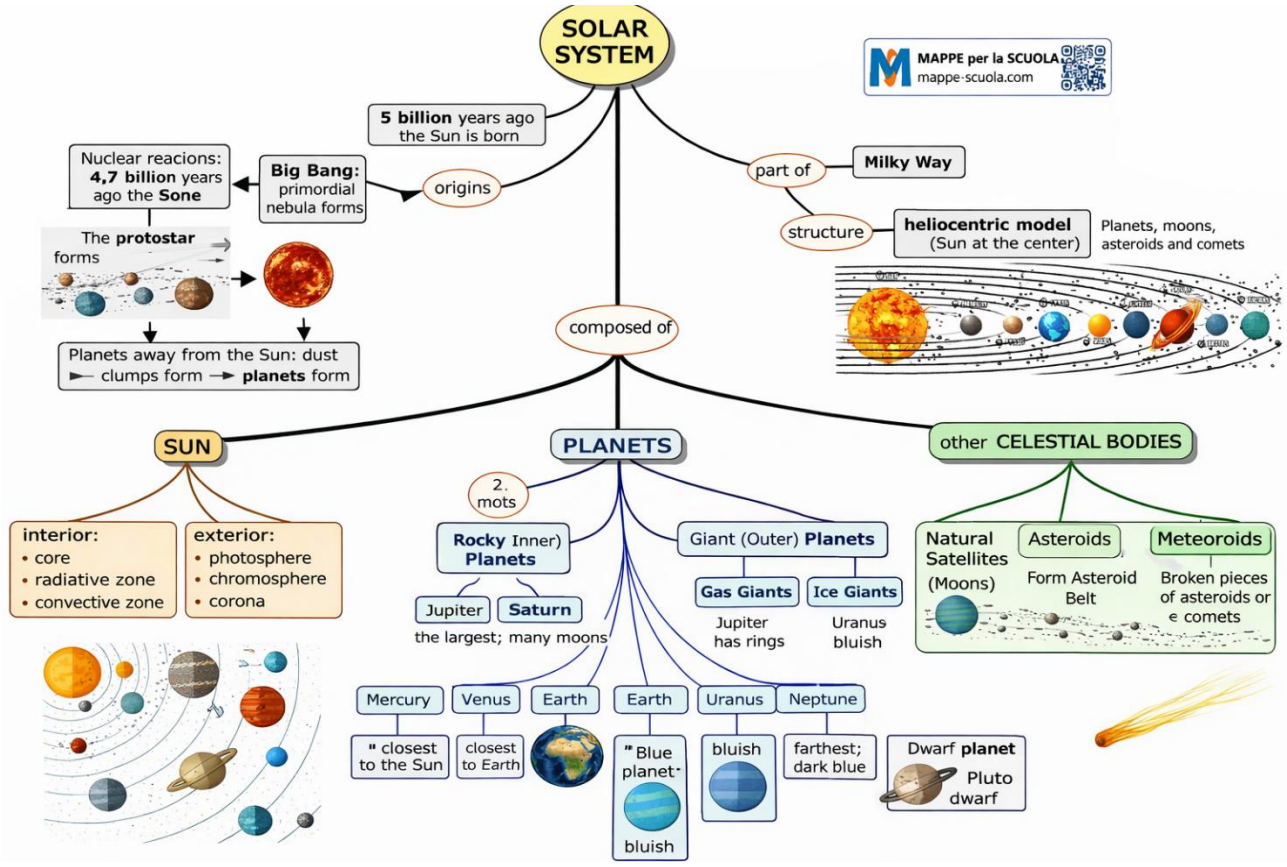
Rover	Rover	🤖
Observatory	Osservatorio	🏛️
Ice	Ghiaccio	❄️
Dust storm	Tempesta di polvere	🌪️
Volcano	Vulcano	🌋
Atmosphere pressure	Pressione atmosferica	📉
Radiation	Radiazione	⚡
Minerals	Minerali	🪨
Frozen water	Acqua ghiacciata	🧊
Orbit path	Percorso orbitale	🔄
Solar flare	Brillamento solare	🔥

🧠 Mappa concettuale per ricerca su ChatGpt



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🎥 **Video** “The Solar System” https://www.youtube.com/watch?v=libKVRa01L8

📘 **Homework: Creazione di una mappa concettuale utilizzando dati da: NASA Solar System Explorer.**

⭐ ORA 2 – Kahoot Quiz

Choose the correct option (a, b, or c) for each question.

1. **Which planet is known as the "Red Planet"?** a) Venus b) Mars ✅ c) Saturn
2. **What force keeps planets in orbit?** a) Magnetism b) Wind c) Gravity ✅
3. **Which is the smallest planet?** a) Mercury ✅ b) Jupiter c) Earth
4. **What is the name of our galaxy?** a) Andromeda b) Milky Way ✅ c) Orion
5. **Does Saturn have rings?** a) Yes, many ✅ b) No c) Only one
6. **What does "Rotation" mean?** a) Moving around the Sun b) Spinning on its axis ✅ c) Moving to another galaxy
7. **Which planet is closest to the Sun?** a) Venus b) Earth c) Mercury ✅
8. **Where is the "Great Red Spot" located?** a) Mars b) Jupiter ✅ c) Neptune
9. **What is the Earth’s natural satellite?** a) The Moon ✅ b) The Sun c) Titan
10. **Which of these are Gas Giants?** a) Earth and Mars b) Jupiter and Saturn ✅ c) Mercury and Venus
11. **The Sun is mainly made of:** a) Oxygen and Carbon b) Hydrogen and Helium ✅ c) Iron and Rock
12. **How does Uranus rotate?** a) Vertically b) It doesn't rotate c) On its side ✅
13. **What is an orbit?** a) A path around the Sun ✅ b) A type of star c) A planet’s moon
14. **What is Venus’s nickname?** a) The Red Star b) The Morning/Evening Star ✅ c) The Cold Planet
15. **Where is the Kuiper Belt?** a) Near the Sun b) Beyond Neptune ✅ c) Between Mars and Jupiter
16. **Comets are made of:** a) Only gas b) Metal and fire c) Ice and dust ✅
17. **Which planet has the strongest winds?** a) Neptune ✅ b) Earth c) Mars
18. **A dwarf planet is:** a) A giant star b) A small planet-like body ✅ c) A moon
19. **What is the hottest planet?** a) Mercury b) Venus ✅ c) Mars
20. **How long does Earth’s revolution take?** a) 24 hours b) 30 days c) One year ✅

⭐ ORA 3 – Space Investigation (better in open space-outdoor)

NASA Space Place – Solar System Explorer https://spaceplace.nasa.gov/menu/solar-system/

*Read the clues for each station. Use the NASA link as a digital map to find the answers. Identify which planet, star, or object is speaking. Example: 'I produce heat and light': **The Sun**.*

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Sun Station 🌞

- I am at the center of the Solar System.
- My gravity controls all planets.
- I produce heat and light.
- I am made of hot gases.
- I use nuclear fusion to create energy.

Rocky Planets Station 🪨

- We have solid surfaces.
- One of us has volcanoes.
- One rotates very slowly.
- One has no atmosphere.
- One has extreme temperatures.
- One has liquid water.
- One has dust storms.

Gas Giants Station 🌪️

- We are made of hydrogen and helium.
- We have no solid surface.
- One has more than 80 moons.
- One has a giant storm.
- We rotate very fast.

Ice Giants Station ❄️

- We contain frozen gases.
- One is deep blue.
- We are far from the Sun.
- We have strong winds.

Small Bodies Station ☄️

- We include icy objects.
- Some of us have tails.
- We orbit in belts.
- Some burn in Earth's atmosphere.

⭐ ORA 4 – Oral Team Quiz

1. What is the difference between a planet and a star?
2. What is the asteroid belt?
3. Why is Earth called the Blue Planet?
4. What is the atmosphere?
5. What is the name of Saturn's largest moon?
6. What is a solar eclipse?
7. What is a lunar eclipse?
8. Why does the Moon change shape?
9. What is the name of the galaxy we live in?
10. What is the difference between rotation and revolution?
11. What is a constellation?
12. Why can't humans breathe on Mars?

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13. What is a solar flare?
14. What is the Oort Cloud?
15. What is a meteor shower?
16. Why is Neptune blue?
17. What protects Earth from radiation?
18. What is the name of Jupiter's biggest moon?
19. Why does Earth have seasons?
20. What is a light-year?

🚀 ORA 5 – Comparative Data Analysis

Section 1 - Fill in with comparative or superlative:

1. Mercury is _____ (close) planet to the Sun.
2. Jupiter is _____ (large) than Saturn.
3. Venus is _____ (hot) than Mercury because of its atmosphere.
4. Neptune is _____ (far) planet from the Sun.
5. Mars is _____ (small) than Earth.
6. The Sun is _____ (big) object in our system.
7. Saturn's rings are _____ (visible) than Neptune's.
8. Uranus is _____ (cold) than Mars.
9. Earth has a _____ (thick) atmosphere than Mars.
10. Jupiter has _____ (many) moons than Earth.
11. Gravity on the Moon is _____ (weak) than on Earth.
12. Venus is _____ (bright) object in the night sky after the Moon.
13. A year on Pluto is _____ (long) than a year on Earth.
14. Mercury has _____ (short) orbit.
15. The Gas Giants are _____ (massive) than the Rocky Planets.

✅ 1. the closest, 2. larger, 3. hotter, 4. the farthest, 5. smaller, 6. the biggest, 7. more visible, 8. colder, 9. thicker, 10. more, 11. weaker, 12. the brightest, 13. longer, 14. the shortest, 15. more massive.

Section 2 - 🌌 SPACE TRAVEL AGENCY
Fill in with comparative or superlative. Use the following adjectives (not in order):

easy – weak – hot – large – far – friendly – close – bright – cold – good – long – many – short – beautiful

1. Visit Mercury: it's the _____ planet to the Sun.
2. Choose Venus if you want the _____ holiday in the Solar System.
3. Jupiter is _____ than any other planet – perfect for explorers!
4. Mars is _____ than Earth, so pack warm clothes.
5. Saturn has the _____ rings of all the planets.
6. Neptune is the _____ destination for true adventurers.
7. The Moon has _____ gravity than Earth – great for jumping!
8. Earth is _____ than any other planet for humans.
9. Uranus is _____ than Saturn during most of the year.

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10. Jupiter has _____ moons than Mars.
11. A trip to Pluto is the _____ journey in our space catalog.
12. Mercury has the _____ year of all the planets.
13. Saturn is _____ than Jupiter for taking amazing space photos.
14. Mars is the _____ planet to explore after Earth.
15. The Sun is _____ than any planet in the Solar System.

✅ 1. closest, 2. hottest, 3. Larger, 4. colder, 5. most beautiful, 6. farthest, 7. weaker, 8. more friendly, 9. colder, 10. more, 11. longest, 12. shortest, 13. better, 14. easiest, 15. brighter

⭐ ORA 6 – Verifica finale

📋 *Section 1 – True/False*

1. The Sun is a star. → **True**
2. Jupiter is smaller than Earth. → **False**
3. Comets are made of ice and dust. → **True**
4. Mercury is the closest planet to the Sun. → **True**
5. Neptune is an ice giant. → **True**
6. Venus is the coldest planet. → **False**
7. Earth has one moon. → **True**
8. Saturn has rings. → **True**
9. Mars is a gas giant. → **False**
10. The Sun produces light through nuclear fusion. → **True**
11. The Sun is bigger than all planets combined. → **True**
12. Venus is hotter than Mercury. → **True**
13. Saturn's rings are made only of rock. → **False**
14. Earth completes one revolution in 24 hours. → **False**
15. Neptune is the farthest planet. → **True**
16. Mars has two moons. → **True**
17. Jupiter is a rocky planet. → **False**
18. Comets come from the Kuiper Belt or Oort Cloud. → **True**
19. Uranus rotates on its side. → **True**
20. The Moon produces its own light. → **False**

✏️ *Section 2 – Writing Task*

Write a short text on a planet involving the following tips:

- Position
- Type (rocky / gaseous / icy)
- Atmosphere
- Temperature
- Moons
- Interesting facts
- Why you chose that planet

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🎭 *Section 3 – Role-play*

🧑‍🔬 **Scientist**

1. How was your mission?
2. What did you observe on the planet?
3. Describe the atmosphere?
4. Is there water?
5. Would humans survive there?
6. What instruments did you use?
7. Did you detect volcanic activity?
8. How strong was the gravity?
9. Did you observe storms?
10. What minerals did you find?
11. Was the terrain flat or mountainous?
12. Did you record temperature variations?
13. Is there frozen water?
14. How long did your mission last?
15. Would you recommend sending a rover?
16. Did you see any signs of erosion?
17. Was the visibility good or poor?
18. Did the dust affect your equipment?
19. Did you find any unusual formations?
20. How dangerous is the environment?

🧑‍🚀 **Astronaut**

a) The surface was rocky and uneven.
b) I noticed strong winds during the mission.
c) The temperature was extremely low at night.
d) I saw interesting minerals on the ground.
e) Communication with the base was stable.
f) The gravity was weaker than on Earth.
g) I collected several rock samples.
h) The atmosphere was too thin to breathe.
i) I saw dust storms on the horizon.
j) My sensors detected radiation in some areas.
k) The ground was unstable in certain regions.
l) I had to adjust my equipment for low gravity.
m) The mission was challenging but successful.
n) The visibility was reduced because of dust.
o) I didn't find any signs of life.
p) The terrain was mostly mountainous.
q) I detected frozen water under the surface.
r) My instruments worked well despite the cold.
s) I observed erosion on some rocks.
t) I think this planet has scientific potential.

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🔄 Final test for BES / BILS / DSA

1. What is the Sun?
   A. A planet
   B. A moon
   C. **A star**
2. Which planet is closest to the Sun?
   A. Venus
   B. **Mercury**
   C. Earth
3. Earth is a:
   A. Gas planet
   B. **Rocky planet**
   C. Ice planet
4. Which planet is the biggest?
   A. Mars
   B. Earth
   C. **Jupiter**
5. How many moons does Earth have?
   A. Two
   B. **One**
   C. None
6. Which planet is famous for its rings?
   A. Jupiter
   B. **Saturn**
   C. Neptune
7. What are comets made of?
   A. Fire and gas
   B. Rock only
   C. **Ice and dust**
8. Which planet is called the Red Planet?
   A. Venus
   B. **Mars**
   C. Uranus
9. Can humans breathe on Mars without help?
   A. Yes
   B. **No**
   C. Only at night
10. Why is Venus very hot?
    A. It is very small
    B. It has many moons
    C. **It has a thick atmosphere**
11. A gas giant is a planet made mostly of:
    A. Rock
    B. Ice
    C. **Gas**

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12. Which planet is an ice giant?
    A. Mars
    B. **Neptune**
    C. Mercury
13. What gives light to the planets?
    A. The Moon
    B. **The Sun**
    C. The stars
14. What does the Moon do?
    A. Makes its own light
    B. **Reflects the Sun's light**
    C. Is a planet
15. What do astronauts need in space?
    A. Water only
    B. Normal clothes
    C. **Special suits and equipment**

⭐ RUBRICA DI VALUTAZIONE

Criterio	Descrizione	Punteggio
Comprensione orale	Comprende istruzioni e contenuti scientifici in LS	1–5
Produzione orale	Descrive pianeti e fenomeni in modo chiaro	1–5
Comprensione scritta	Comprende testi scientifici brevi	1–5
Produzione scritta	Produce testi descrittivi coerenti	1–5
Conoscenze disciplinari	Riconosce pianeti, caratteristiche, fenomeni	1–5
Uso del lessico	Usa correttamente il vocabolario astronomico	1–5
Collaborazione	Lavora in gruppo in modo costruttivo	1–5
Creatività	Realizza elaborati personali e accurati	1–5

Totale massimo: 40 punti

1 (4-5) = INSUFFICIENTE	**2** (6) = SUFFICIENTE	**3** (7) = DISCRETO	**4** (8) = BUONO	**5** (9-10) = OTTIMO

Ottimo: l'alunno porta a termine compiti in situazioni note e non note, mobilitando una varietà di risorse sia fornite dal docente sia reperite altrove, in modo autonomo e con continuità.

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Buono: l'alunno porta a termine compiti in situazioni note in modo autonomo e continuo; risolve compiti in situazioni non note utilizzando le risorse fornite dal docente o reperite altrove, anche se in modo discontinuo e non del tutto autonomo.
Discreto: l'alunno porta a termine i compiti in situazioni note in modo abbastanza autonomo, anche se non sempre continuo. Nelle situazioni non note utilizza principalmente le risorse fornite dal docente, mostrando un'autonomia parziale e una gestione delle risorse discontinua.
Sufficiente: l'alunno porta a termine compiti solo in situazioni note e utilizzando le risorse fornite dal docente, sia in modo autonomo ma discontinuo, sia in modo non autonomo, ma con continuità.
Insufficiente: l'alunno non sempre porta a termine i compiti o soltanto in situazioni note e unicamente con il supporto del docente e di risorse fornite appositamente.

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