

What is coal made from?

- A) Dead plants
- B) Dinosaur fossils
- C) A whole bunch of chemicals mixed together by scientists

What does the word “petroleum” mean?

- A) Rock oil
- B) Ancient sea creature
- C) Swamp gas

Burning oil produces most of all...

- A) nitrogen (N_2)
- B) oxygen (O_2)
- C) carbon dioxide (CO_2)
- D) ozone (O_3)

What part of the energy consumption of the space station ISS is covered by solar energy?

- A) Half of it
- B) Three quarters of it
- C) All of it
- D) One quarter of it

Solar, biomass, geothermal, wind, and hydropower energy are all renewable sources of energy. They are called renewable because they ...

- A) are clean and free to use
- B) can be converted directly into heat and electricity
- C) can be replenished by nature in a short period of time

When will the sun stop shining?

- A) Never
- B) In a few billion years
- C) Next week on Tuesday

One kilowatt-hour equals...

- A) 10 kilovolt
- B) 1 000 000 calories
- C) 100 Celsius
- D) 1 000 watt-hours

What are the black spots on the surface of the sun called?

- A) Sunspots
- B) Turbulences
- C) Eruptions
- D) Sun acne

SCOUTS GO SOLAR

A) Rock oil (petra + oleum)

SCOUTS GO SOLAR

A) Dead plants

SCOUTS GO SOLAR

C) All of it.

The solar panels of the ISS produce even more energy than the space station needs.

SCOUTS GO SOLAR

C) carbon dioxide (CO₂)

SCOUTS GO SOLAR

B) The Sun should keep shining like it is now for a few billion years. Then it will gradually run out of fuel and die.

SCOUTS GO SOLAR

C) can be replenished by nature in a short period of time

SCOUTS GO SOLAR

A) Sunspots

SCOUTS GO SOLAR

D) 1 000 watt-hours

SCOUTS GO SOLAR

The distance between the earth and the sun is about 150 000 000 km. How long does light travel to cover this distance?

- A) About 1 second
- B) About 8 minutes
- C) Exactly 24 hours

SCOUTS GO SOLAR

The amount of solar energy poured onto the earth by the sun every hour could cover the world's use of energy for how long?

- A) For 10 years
- B) For 1 year
- C) For 1 month
- D) For 1 day

SCOUTS GO SOLAR

If we would cover the whole world with solar panels, how many times could we cover the worldwide energy consumption with the energy we get?

- A) 5 000 times
- B) 2,5 times
- C) 256,8 times
- D) Once

SCOUTS GO SOLAR

Which of these sources of renewable energy do NOT depend on the weather?

- A) Hydropower
- B) Wind
- C) Geothermal
- D) Solar

SCOUTS GO SOLAR

Green plants convert solar energy into...

- A) hydrogen
- B) uranium
- C) chemical energy
- D) X-rays

SCOUTS GO SOLAR

Which gas in the atmosphere is mainly responsible for global warming?

- A) Ozone (O₃)
- B) Sulphur dioxide (SO₂)
- C) Carbon dioxide (CO₂)
- D) Nitrous oxide (N₂O)

SCOUTS GO SOLAR

In average, how many years does a solar panel normally work before it needs to be replaced?

- A) About 10 years
- B) About 25 years
- C) About 100 years

SCOUTS GO SOLAR

Which of the following declarations about solar panels is NOT true?

- A) A solar panel consists of many small solar cells that are connected with each other
- B) Solar panels produce electricity even if the sky is cloudy
- C) The price for solar panels has been rising heavily in the past years

SCOUTS GO SOLAR

B) For 1 year

SCOUTS GO SOLAR

B) 8 minutes and 19 seconds

SCOUTS GO SOLAR

C) Geothermal

SCOUTS GO SOLAR

D) 5 000 times

SCOUTS GO SOLAR

C) Carbon dioxide (CO₂)

SCOUTS GO SOLAR

C) chemical energy

SCOUTS GO SOLAR

C) The price for solar panels has been rising heavily in the past years.

On the contrary, it has been decreasing heavily.

SCOUTS GO SOLAR

B) About 25 years

Which country produces in total the most renewable energy?

- A) USA
- B) China
- C) Iceland
- D) Germany

What percentage of the energy used around the world comes from fossil fuels (2022)?

- A) None
- B) Ca. 80%
- C) Ca. 40%

To produce an aluminium can from recycled aluminium uses much less energy than to produce one from “new” aluminium. How much less?

- A) 35% less
- B) 65% less
- C) 75% less
- D) 95% less

Electrical energy can be produced from...

- A) mechanical energy
- B) chemical energy
- C) kinetic energy (movement)
- D) all of the above

Most of the energy we use originally came from...

- A) the sun
- B) the ozone layer
- C) the centre of the earth
- D) the oceans

Which of these three has the most energy?

- A) A hurricane
- B) A nuclear bomb
- C) All the oceans' waves together

Electricity is the movement of...

- A) atoms
- B) molecules
- C) electrons
- D) neutrons

How much energy does a bolt of lightning has?

- A) Enough to toast 160,000 slices of bread
- B) Enough to toast one loaf of bread
- C) Enough to toast one slice of bread

SCOUTS GO SOLAR

B) 80%

SCOUTS GO SOLAR

B) China

SCOUTS GO SOLAR

D) all of the above

SCOUTS GO SOLAR

D) Making cans from aluminium scrap uses 95% less energy than making cans from aluminium-bearing bauxite ore, according to US and Swiss Energy Information Agencies

SCOUTS GO SOLAR

A) A hurricane

It has about as much energy as 53 nuclear bombs. All the waves worldwide have about as much energy as a nuclear bomb

SCOUTS GO SOLAR

A) Most of the energy on Earth comes from the sun – but some comes from the centre of the earth, as well. The sun gives us light and keeps us warm. It makes the wind blow and plants grow. And even the energy stored up in the oil, coal and gas that we use today came originally from the sun.

SCOUTS GO SOLAR

A) It would be tricky, but in theory a bolt of lightning has enough energy to toast 160,000 slices.

Now somebody just needs to work out how to transfer that energy to your toaster and how to put all these slices in there!

SCOUTS GO SOLAR

C) electrons

A 100-watt light bulb consumes in 24 hours...

- A) 24 calories
- B) 2,4 kilowatt-hours
- C) 240 electron-volt
- D) 2 400 joules

How many times does the earth fit into the sun?

- A) 3 000 times
- B) 13 000 times
- C) 1 300 000 times

What energy source does the sun use to get it's energy?

- A) Thermal
- B) Nuclear fusion
- C) Biomass
- D) Light

What material is the sun mainly made of?

- A) Water
- B) Hydrogen
- C) Iron
- D) Oxygen

How old is the sun?

- A) 365 days
- B) 4,57 billion years
- C) 10,2 billion years

How hot is the surface of the sun?

- A) About 200°C
- B) About 500°C
- C) About 6 000°C
- D) About 125 000°C

Geysers (periodically spouting hot springs) are examples of ... energy

- A) solar
- B) wind
- C) tidal (low tide and high tide)
- D) geothermal

What's the name of the outermost visible layer of the sun, from where the rays of the sun come from?

- A) Photosphere
- B) Atmosphere
- C) Stratosphere
- D) Cosmosphere

SCOUTS GO SOLAR

C) 1 300 000 times

SCOUTS GO SOLAR

B) 2,4 kilowatt-hours

SCOUTS GO SOLAR

B) 73,5% hydrogen, 25% helium

SCOUTS GO SOLAR

B) nuclear fusion (nitrogen to helium)

SCOUTS GO SOLAR

B) About 6 000°C.
But it seems that in the centre of the sun, there are temperatures of several billion °C.

SCOUTS GO SOLAR

B) 4,57 billion years

SCOUTS GO SOLAR

A) Photosphere

SCOUTS GO SOLAR

D) Geothermal

Cell phone batteries convert ... energy into electricity.

- A) nuclear
- B) chemical
- C) gravitational
- D) kinetic

Which of these declarations about solar energy is NOT true?

- A) Solar energy is highly scalable, so it can be used on a very small, but also on a very big level
- B) In many countries, the production of solar energy is cheaper than the production of other sources of energy
- C) At the moment (status 2022), solar energy is used more than hydropower

In 2020, from which country did 7 out of the 10 biggest producers for solar panels come from?

- A) USA
- B) Japan
- C) China
- D) South Korea

After how much time of functioning a solar panel has compensated the energy that has been used for its production?

- A) 9 months
- B) Almost 15 years
- C) The life span of a solar panel is too short to compensate this energy
- D) About 2 years

How fast does the performance level of a typical solar panel decrease per year?

- A) 10%
- B) 30%
- C) 6%
- D) 1%

The seasons are caused by...

- A) the inclination of the earth axis
- B) the distance to the sun
- C) cold winds from the cosmos

The orbit of the sun has the form of...

- A) a circle
- B) an ellipsis
- C) an egg
- D) a square

How fast is the speed of light?

- A) About 100 km/s
- B) About 365 km/s
- C) About 300 000 km/s
- D) About 1 000 000 000 km/s

SCOUTS GO SOLAR

C) At the moment (status 2022),
solar energy is used more than
hydropower

SCOUTS GO SOLAR

B) chemical energy

SCOUTS GO SOLAR

D) About 2 years

SCOUTS GO SOLAR

C) China

SCOUTS GO SOLAR

A) the inclination of the earth axis.

The earth is not turning around
vertically around its axis, but with a
slight inclination. That's why we
have more insolation on the south-
ern or northern hemisphere and
therefore summer or winter,
respectively.

SCOUTS GO SOLAR

D) 1%

SCOUTS GO SOLAR

D) About 300 000 km/s

SCOUTS GO SOLAR

B) an ellipsis.

This is due to the influence of
other planets. Without this, the
orbit would be an almost perfect
circle.

Which of these declarations about the sun are NOT true?

- A) The sun is an almost perfectly ball-shaped
- B) Astronauts at the ISS can see 16 sunrises and sunsets per day
- C) On the sun, there is no gravitation

The sun is the biggest object in our sun system. What percentage of the overall mass of the sun system does the sun have?

- A) Hardly 28%
- B) Exactly 54%
- C) More than 75%
- D) More than 98%

At what moment there is the smallest distance between the earth and the sun?

- A) In July
- B) In January
- C) The distance is always the same

One square meter of the sun shines brighter than ...

- A) 1 million light bulbs
- B) 20,000 light bulbs
- C) 350 light bulbs

What kind of star is the sun?

- A) The sun is not a star
- B) white giant
- C) A yellow dwarf
- D) A firestar

You can power a car by fuel made from plants or by electricity made by solar systems. Both need areas with sunlight. Which of these two techniques need larger areas (fields or solar panels)?

- A) Both need more or less the same area size
- B) The plant-based fuel needs at least 200 times more
- C) The electricity from sunlight needs about 100 times more

How many tons of dynamite would you need to explode per second to produce the same amount of energy as the sun does?

- A) 35 tons
- B) 0.8 tons
- C) 48,000 tons
- D) 100 billion tons

Photovoltaics transform 20% of the solar energy to electricity. What percentage of the sunrays' energy is chemically stocked in the plants by photosynthesis?

- A) 0,5%
- B) 2%
- C) 20%
- D) 45%

SCOUTS GO SOLAR

D) More than 98%

SCOUTS GO SOLAR

C) On the sun, there is no gravitation.

On the contrary, the gravitation is several times stronger than on earth.

SCOUTS GO SOLAR

A) 1 million light bulbs

SCOUTS GO SOLAR

B) In January.

The difference compared to July (when the distance is the biggest) is about 5 million kilometres

SCOUTS GO SOLAR

B) The plant-based fuel needs at least 200 times more

SCOUTS GO SOLAR

C) A yellow dwarf.

Compared to other stars, the sun is only average in size.

SCOUTS GO SOLAR

A) 0,5%

SCOUTS GO SOLAR

D) 100 billion tons.

What a firework...

SCOUTS GO SOLAR

Which innovator was the first who created a device capable of generating alternative electricity?

- A) Thomas Edison
- B) Nicola Tesla
- C) Benjamin Franklin
- D) Michael Pupin

SCOUTS GO SOLAR

The heat energy stored in the uppermost 10km of the Earth's crust is equivalent to how many times the total energy stored in all the world's oil and gas?

- A) 50 000 times more
- B) 500 times more
- C) 5 times more
- D) Half as much

SCOUTS GO SOLAR

A flywheel stores ... energy

- A) potential (position)
- B) kinetic (movement)
- C) chemical
- D) electrical

SCOUTS GO SOLAR

Who was the first in discovering the photovoltaic effect, meaning the fact that you can produce electricity from sunlight?

- A) Alexandre Edmond Becquerel
- B) Marie Curie
- C) Gyro Gearloose
- D) Alessandro Volta

SCOUTS GO SOLAR

When and where has the first solar panel made of silicon been produced?

- A) 1932 in Switzerland
- B) 1985 in Japan
- C) 2004 in China
- D) 1954 in the USA

SCOUTS GO SOLAR

In 1956, the first solar cells were sold. For how much money?

- A) 7 \$ per watt
- B) 100 \$ per watt
- C) 300 \$ per watt
- D) 2500 \$ per watt

SCOUTS GO SOLAR

SCOUTS GO SOLAR

A) 50 000 times more

SCOUTS GO SOLAR

B) Nicola Tesla

Tesla, who has been born in Austria-Hungary in 1856, emigrated to the United States, where he sold the patent on his alternative current generating device to the American inventor and industrialist George Westinghouse.

SCOUTS GO SOLAR

A) Alexandre Edmond Becquerel,
in 1839

SCOUTS GO SOLAR

B) kinetic energy

SCOUTS GO SOLAR

C) 300 \$ per watt

SCOUTS GO SOLAR

D) 1954 in the USA, at the Bell Laboratories.

A little bit earlier, there has been the first solar panel made from selenium and gold

SCOUTS GO SOLAR