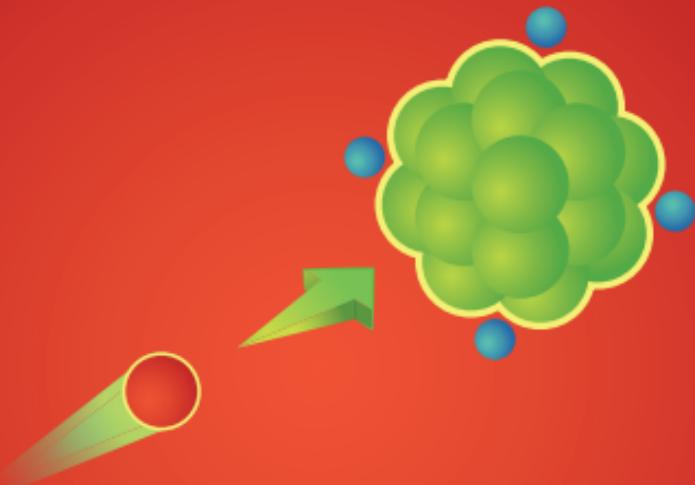


1

NEUTRON

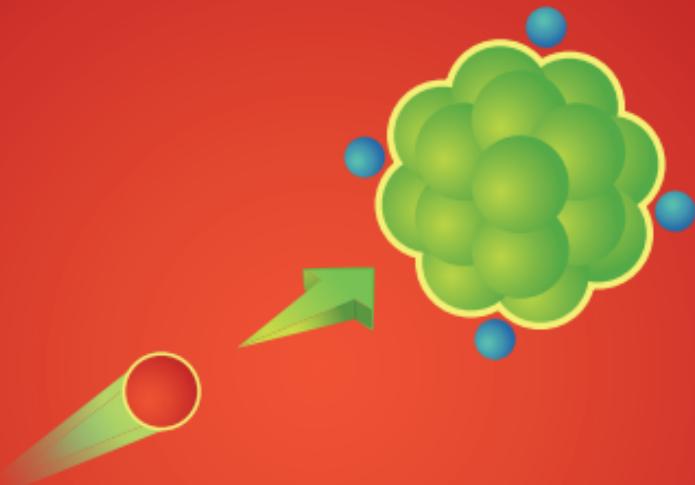


DID YOU KNOW?

NEUTRONS ARE TINY SUB-ATOMIC PARTICLES THAT EXIST IN THE NUCLEUS OF ATOMS.

1

NEUTRON



DID YOU KNOW?

WHEN URANIUM ATOMS SPLIT, ENERGY IS RELEASED WHICH CAN BE TURNED INTO ELECTRICITY- THIS IS NUCLEAR FISSION!

1

NEUTRON

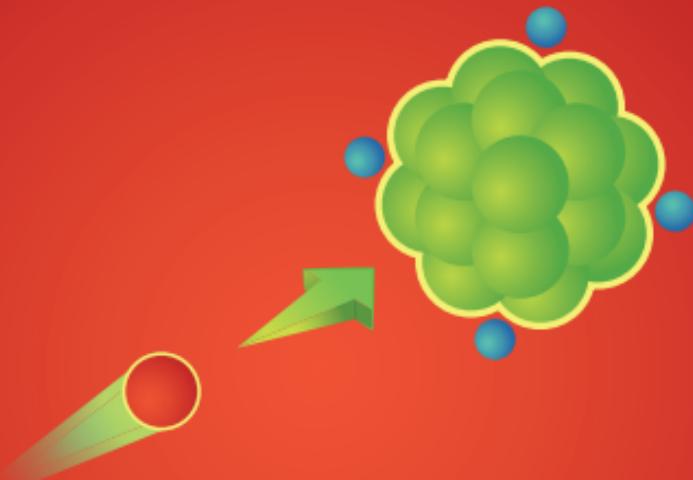


DID YOU KNOW?

A CLOUD CHAMBER IS
A DEVICE THAT ALLOWS
YOU TO SEE RADIOACTIVITY!

1

NEUTRON

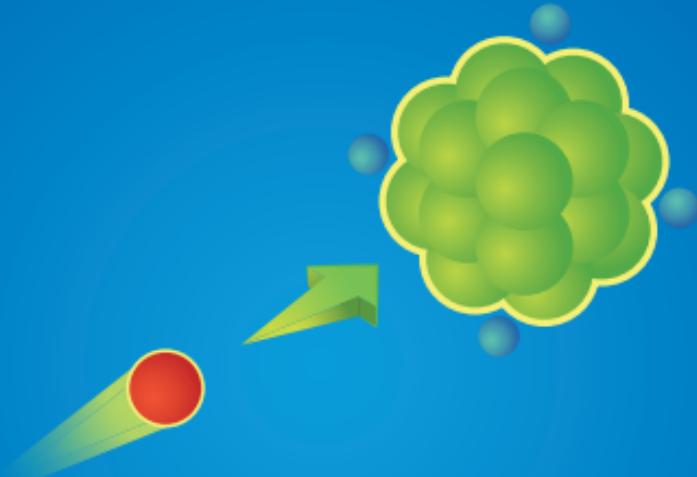


DID YOU KNOW?

RADIOACTIVE TRACERS
ARE USED IN MEDICINE
TO DIAGNOSE ILLNESSES.

1

NEUTRON

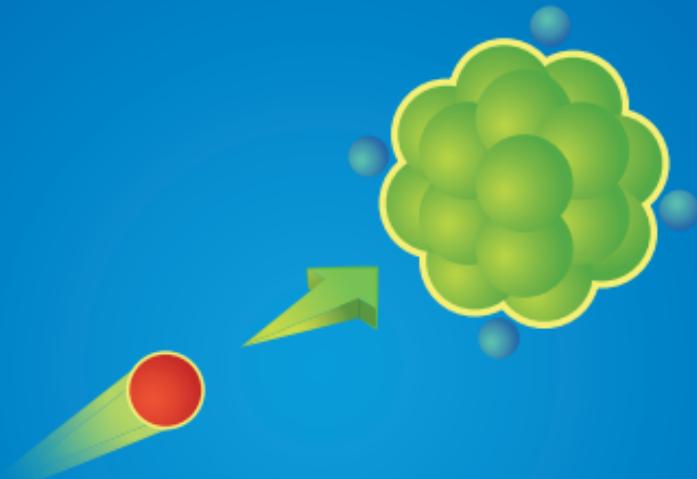


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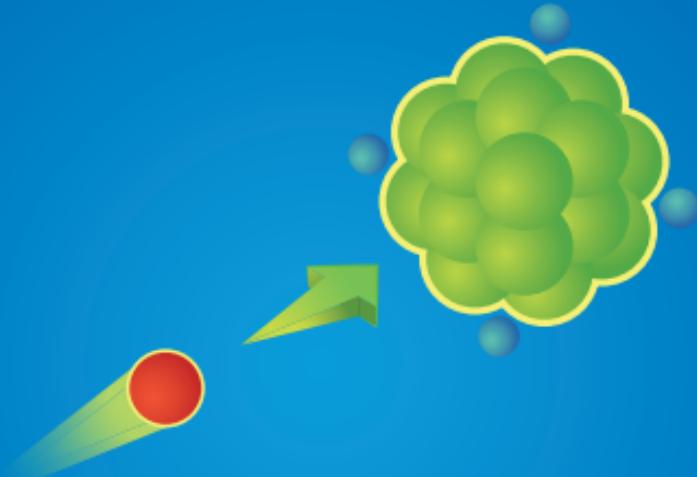


DID YOU KNOW?

THE TWO MATERIALS USED IN
NUCLEAR FUEL ARE URANIUM
AND PLUTONIUM.

1

NEUTRON

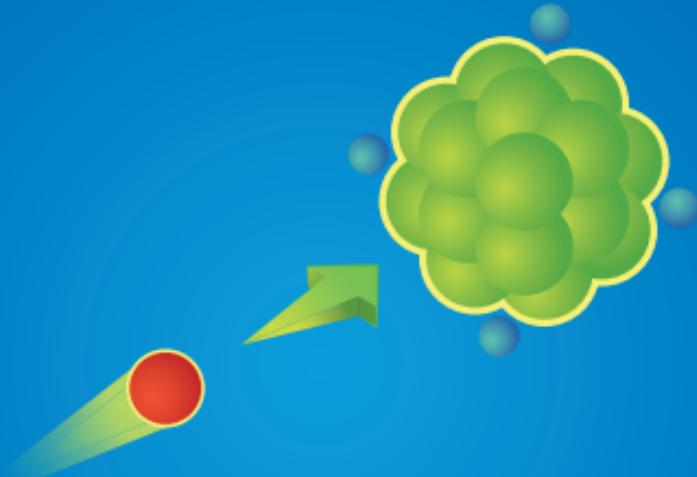


DID YOU KNOW?

ISOTOPES ARE ATOMS THAT HAVE THE SAME NUMBER OF PROTONS AND A DIFFERENT NUMBER OF NEUTRONS.

1

NEUTRON

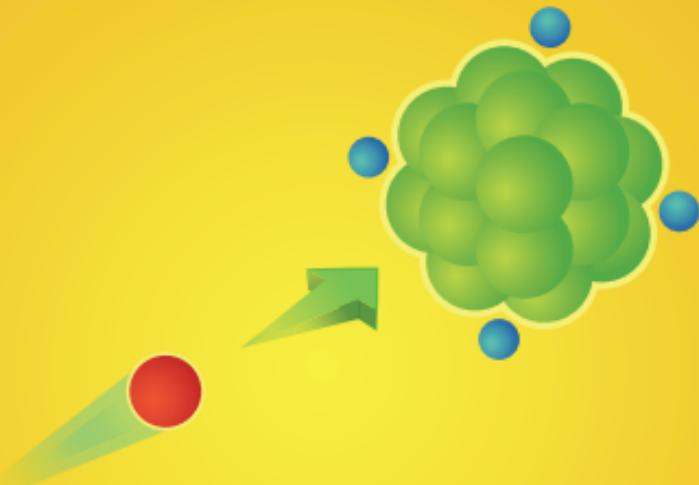


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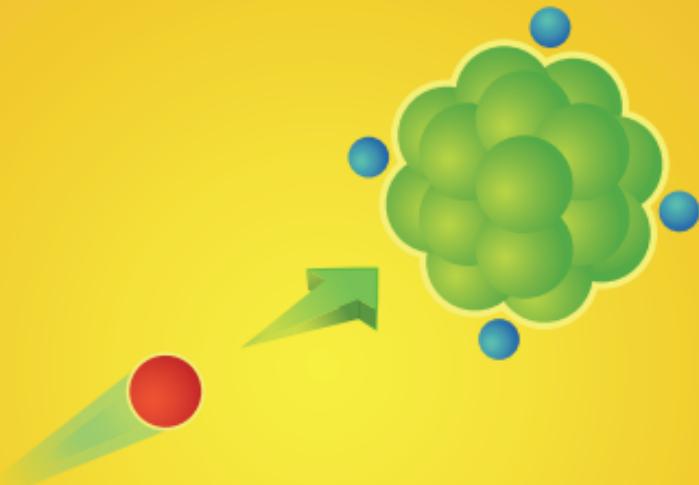


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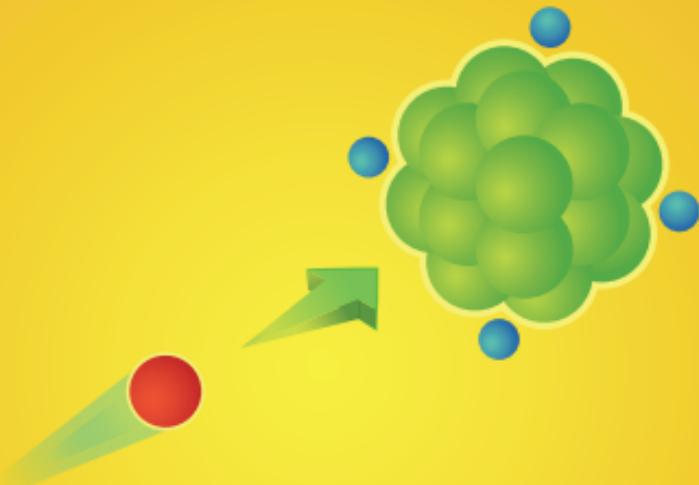


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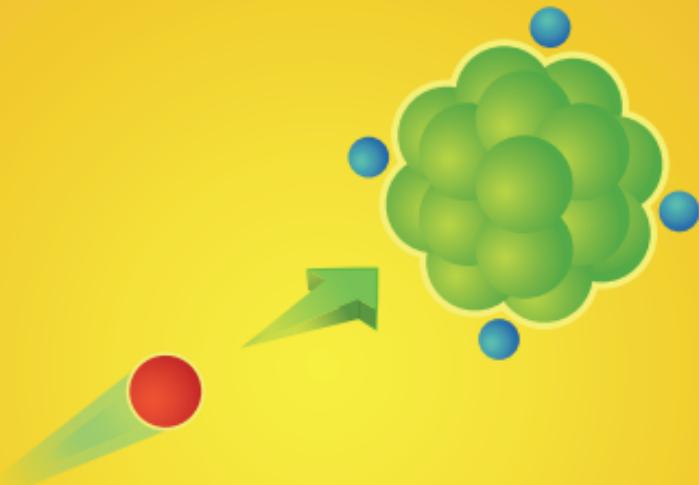


DID YOU KNOW?

ALBERT EINSTEIN DEVELOPED A
THEORY RELATING MASS AND ENERGY
THROUGH HIS EQUATION $E=MC^2$

1

NEUTRON

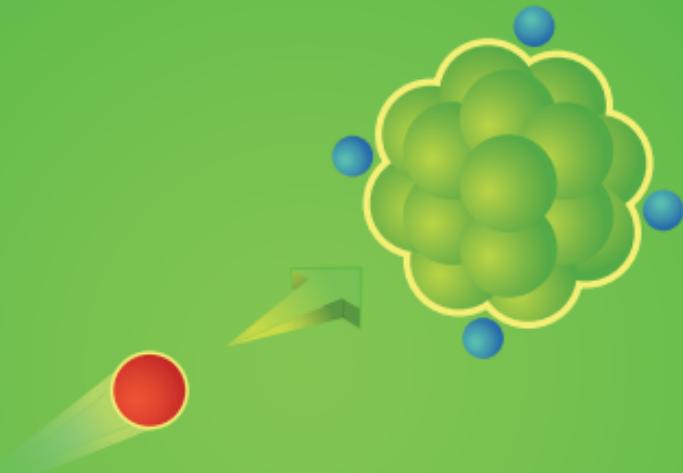


DID YOU KNOW?

THERE ARE 28 NATURALLY OCCURRING RADIOACTIVE ELEMENTS ON EARTH.

1

NEUTRON

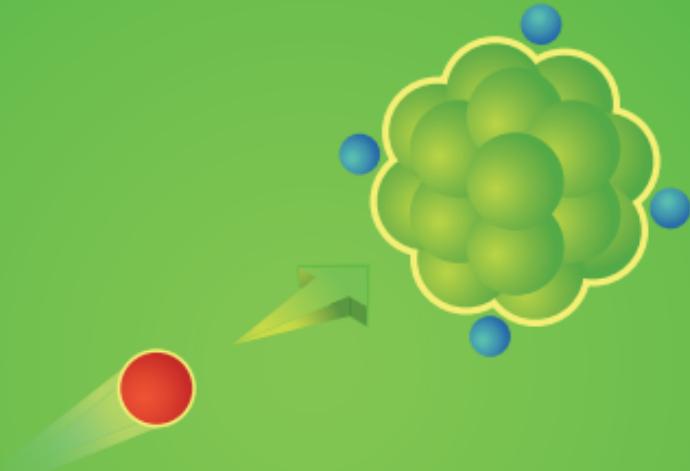


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NEUTRON

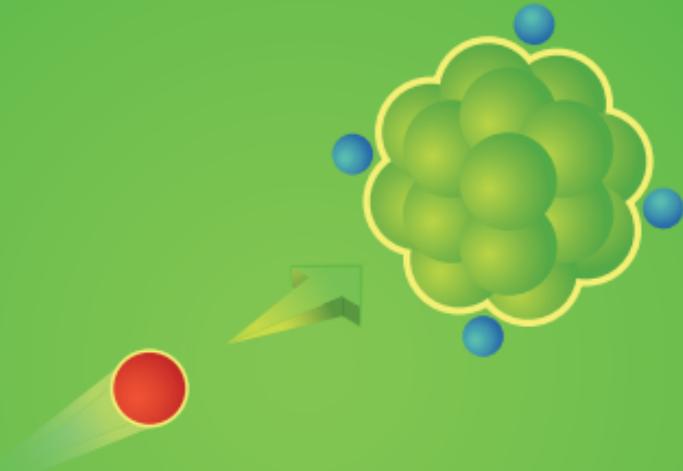


DID YOU KNOW?

SELLAFIELD IS EUROPE'S LARGEST
NUCLEAR SITE AND IS BASED
IN CUMBRIA.

1

NEUTRON

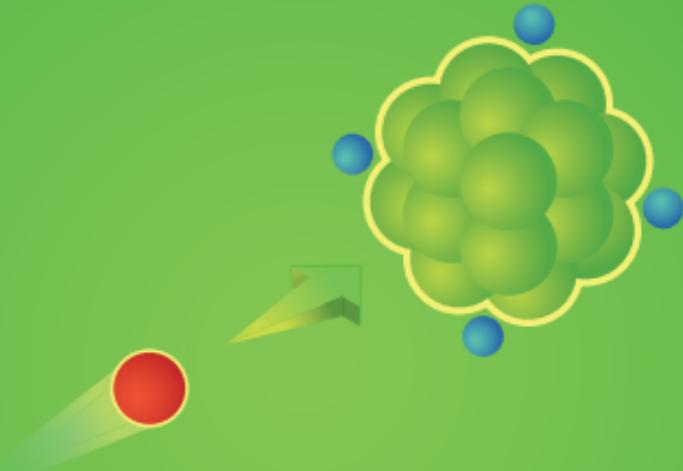


DID YOU KNOW?

NEUTRONS ARE MADE UP OF EXOTIC PARTICLES, CALLED QUARKS.

1

NEUTRON

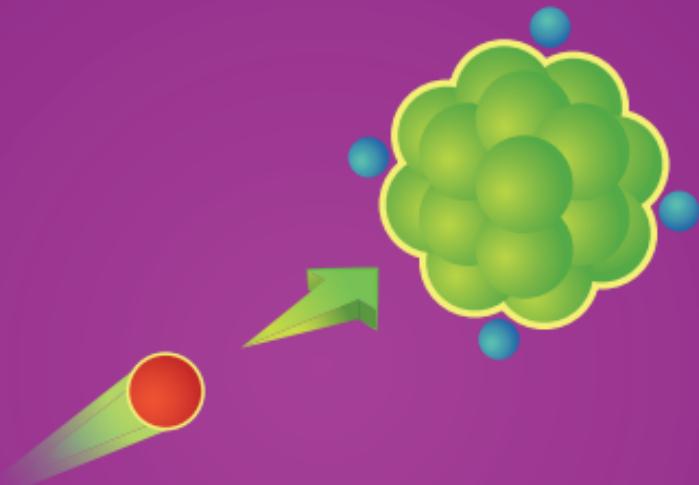


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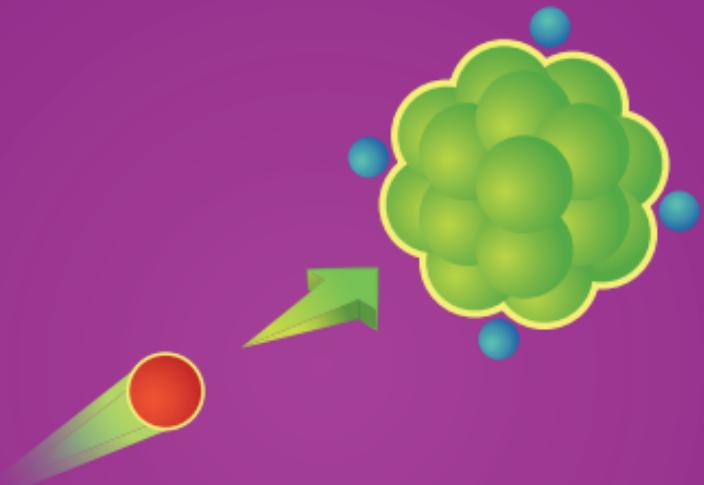


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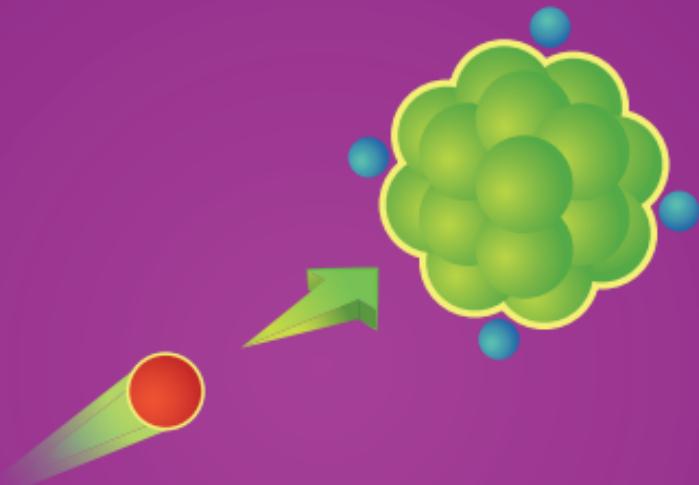


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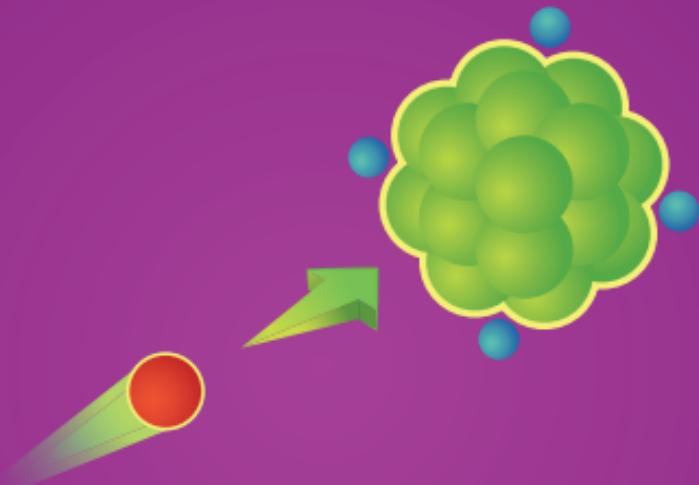


DID YOU KNOW?

HEAVY ATOMS RELEASE ENERGY BY SPLITTING (FISSION), LIGHTER ATOMS DO SO BY COMBINING (FUSION).

1

NEUTRON

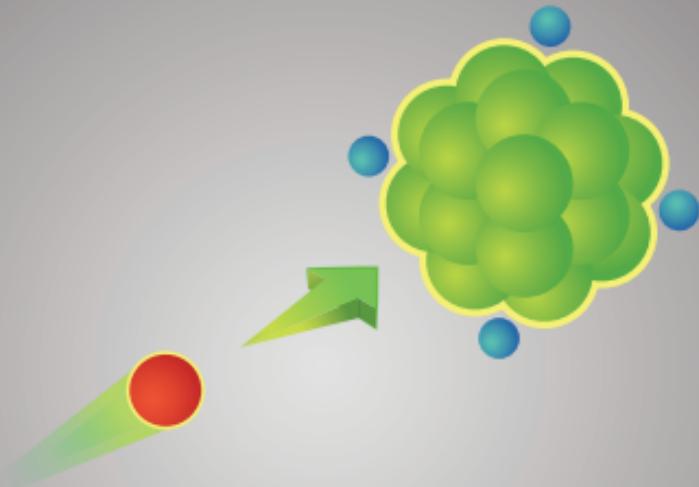


DID YOU KNOW?

A GEIGER COUNTER MEASURES RADIATION, THE FAMOUS 'CLICK' SOUND IS IONISATION!

1

NEUTRON

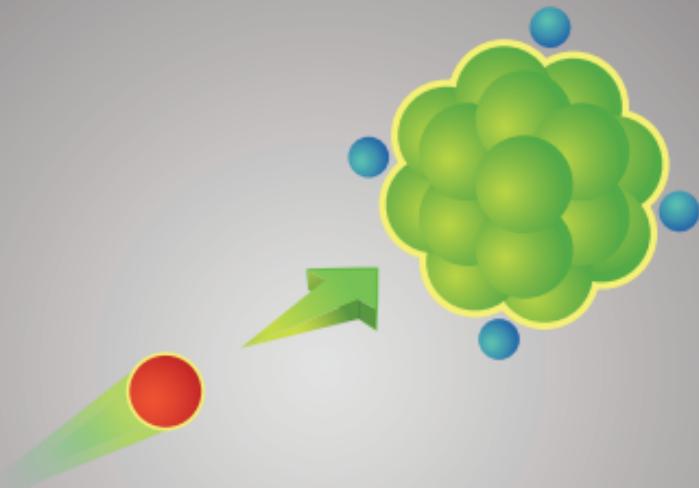


DID YOU KNOW?

EVEN NEUTRONS DECAY! WHEN
SEPARATED FROM A NUCLEUS THEY
DECAY INTO PROTONS!
(AND AN ELECTRON AND NEUTRINO)

1

NEUTRON

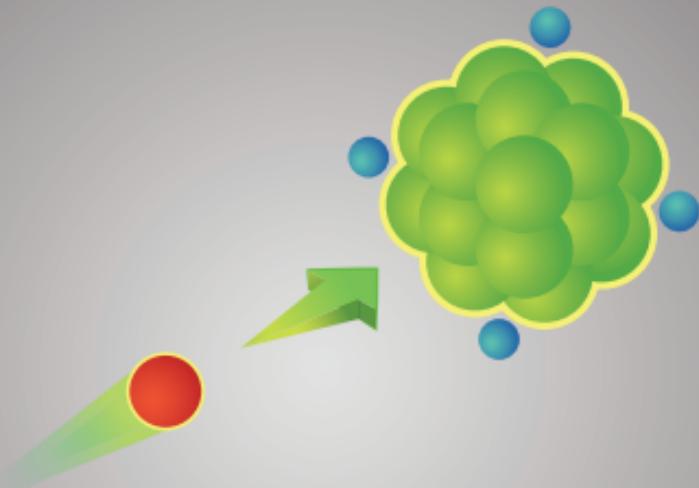


DID YOU KNOW?

THERE ARE OVER 450 NUCLEAR REACTORS ALL OVER THE WORLD.

1

NEUTRON



DID YOU KNOW?

NUCLEAR REACTORS PRODUCE A
BLUE GLOW DUE TO PARTICLES
MOVING FASTER THAN LIGHT
IN WATER.

2

URANIUM

U²³⁵



DID YOU KNOW?

URANIUM IS AN ELEMENT IN THE PERIODIC TABLE THAT HAS 92 PROTONS IN ITS NUCLEUS.

2

URANIUM

U²³⁵



DID YOU KNOW?

URANIUM-235 HAS 143 NEUTRONS IN ITS NUCLEUS AND IS UNSTABLE, SO WILL UNDERGO NUCLEAR FISSION.

2

URANIUM

U²³⁵



DID YOU KNOW?

IN FISSION, U-235 ATOMS ABSORB NEUTRONS MAKING THEM UNSTABLE AND SPLIT, RELEASING ENERGY.

2

URANIUM

U²³⁵



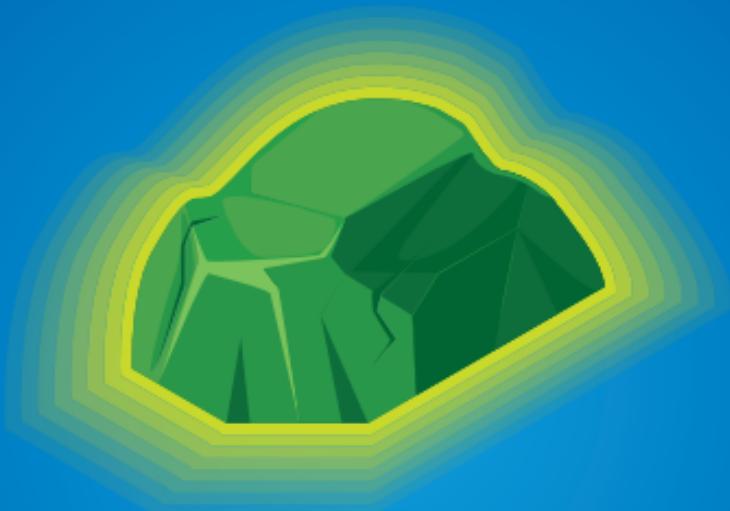
DID YOU KNOW?

URANIUM ORE IS MINED NATURALLY IN COUNTRIES SUCH AS AUSTRALIA, KAZAKHSTAN, AND CANADA.

2

URANIUM

U²³⁵



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URANIUM IS AN ELEMENT IN THE PERIODIC TABLE THAT HAS 92 PROTONS IN ITS NUCLEUS.

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URANIUM

U²³⁵



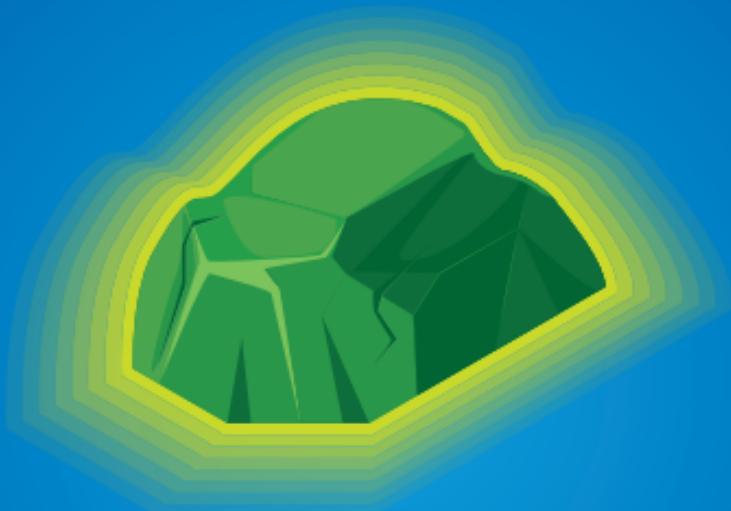
DID YOU KNOW?

THE HALF-LIFE OF URANIUM-235
IS 700 MILLION YEARS!

2

URANIUM

U²³⁵



DID YOU KNOW?

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2

URANIUM

U^{235}



DID YOU KNOW?

ACCORDING TO QUANTUM
MECHANICS, IT IS IMPOSSIBLE TO
PREDICT EXACTLY WHEN AN ATOM
WILL DECAY!

2

URANIUM

U²³⁵



DID YOU KNOW?

URANIUM ORE IS MINED NATURALLY IN COUNTRIES SUCH AS AUSTRALIA, KAZAKHSTAN, AND CANADA.

2

URANIUM

U²³⁵



DID YOU KNOW?

IN 1934 ENRICO FERMI INDUCED RADIOACTIVITY IN SEVERAL DIFFERENT ELEMENTS, BY BOMBARDING THEM WITH NEUTRONS.

2

URANIUM

U²³⁵



DID YOU KNOW?

URANIUM IS AN ELEMENT IN THE
PERIODIC TABLE THAT HAS 92
PROTONS IN ITS NUCLEUS.

2

URANIUM

U²³⁵



DID YOU KNOW?

ENRICHED URANIUM CONTAINS MORE URANIUM-235, AS IT IS THE ISOTOPE THAT NUCLEAR REACTORS USE.

2

URANIUM

U²³⁵



DID YOU KNOW?

URANIUM IS AN ELEMENT IN THE PERIODIC TABLE THAT HAS 92 PROTONS IN ITS NUCLEUS.

2

URANIUM

U²³⁵



DID YOU KNOW?

URANIUM ORE IS MINED NATURALLY IN COUNTRIES SUCH AS AUSTRALIA, KAZAKHSTAN, AND CANADA.

2

URANIUM

U²³⁵



DID YOU KNOW?

RADIOACTIVE DECAY IS AN ATOM'S WAY OF BECOMING MORE STABLE.

2

URANIUM

U²³⁵



DID YOU KNOW?

MARS EXPLORATION ROVERS
USE NUCLEAR POWER!

2

URANIUM

U^{235}



DID YOU KNOW?

URANIUM MELTS AT
3800 DEGREES CELSIUS!

2

URANIUM

U²³⁵



DID YOU KNOW?

URANIUM IS NAMED AFTER
THE PLANET URANUS.

2

URANIUM

U²³⁵



DID YOU KNOW?

URANIUM IS AN ELEMENT IN THE PERIODIC TABLE THAT HAS 92 PROTONS IN ITS NUCLEUS.

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URANIUM

U²³⁵



DID YOU KNOW?

URANIUM ORE IS MINED NATURALLY IN COUNTRIES SUCH AS AUSTRALIA, KAZAKHSTAN, AND CANADA.

2

URANIUM

U²³⁵



DID YOU KNOW?

KAZAKHSTAN HAS BEEN THE WORLD'S
LEADING SUPPLIER OF URANIUM
FOR THE LAST 60 YEARS.

2

URANIUM

U²³⁵



DID YOU KNOW?

URANIUM WAS FIRST EXPERIMENTALLY FOUND TO UNDERGO FISSION IN DECEMBER 1938.

2

URANIUM

U²³⁵

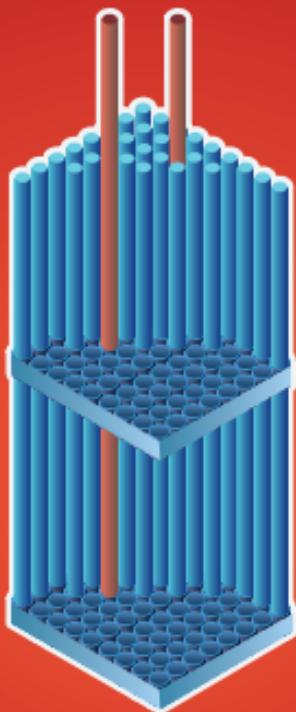


DID YOU KNOW?

NUCLEAR POWER CAN PRODUCE
ELECTRICITY FOR SPACE MISSIONS!

3

CONTROL RODS

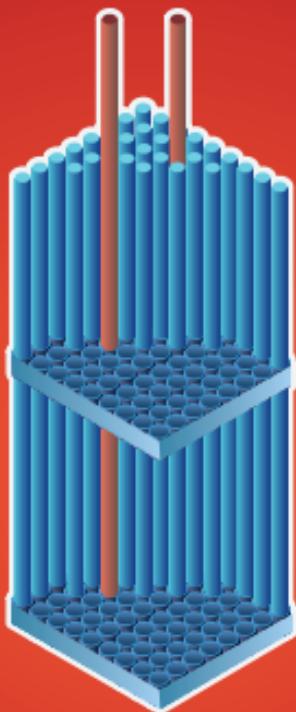


DID YOU KNOW?

CONTROL ROADS ABSORB REACTING NEUTRONS AND CAN STOP A FISSION REACTION IN ITS TRACKS.

3

CONTROL RODS

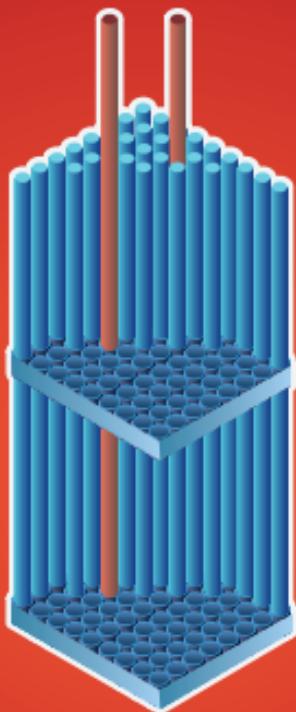


DID YOU KNOW?

RADIOACTIVITY WAS FIRST
DISCOVERED IN 1896 BY
MARIE CURIE AND
HENRI BECQUEREL.

3

CONTROL RODS

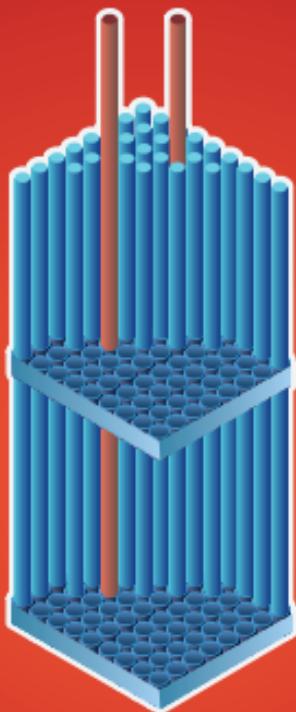


DID YOU KNOW?

TECHNETIUM IS THE LIGHTEST
NATURALLY RADIOACTIVE ELEMENT,
WITH ONLY 43 PROTONS!

3

CONTROL RODS

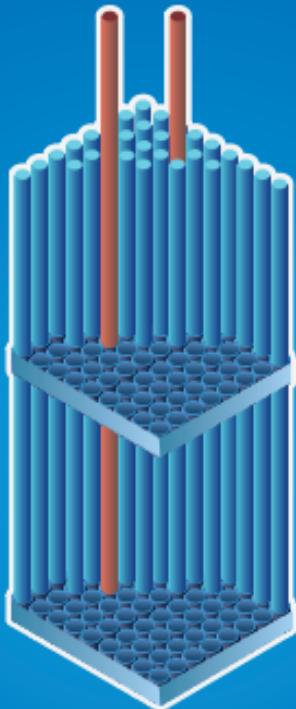


DID YOU KNOW?

A REACTOR CAN HAVE UP TO 80
CONTROL RODS, BUT ONLY NEEDS 12
TO FULLY SHUT IT DOWN!

3

CONTROL RODS

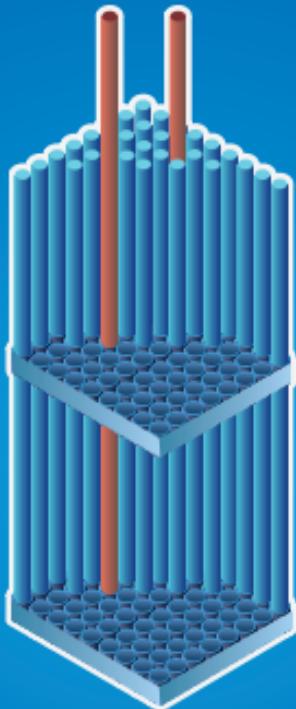


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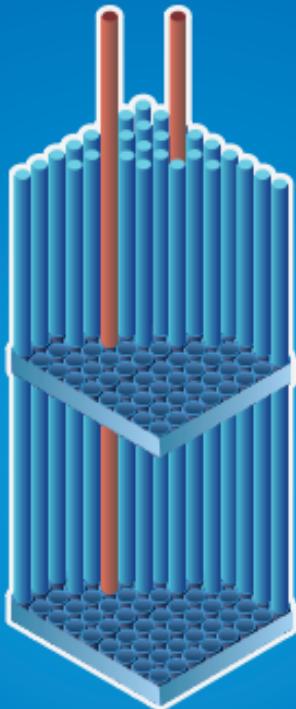


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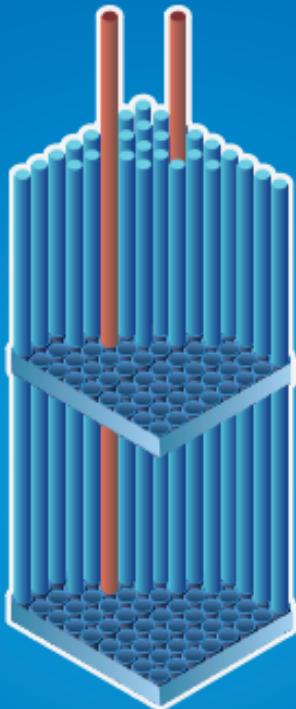


DID YOU KNOW?

SINCE THE MID 1980'S NUCLEAR POWER HAS BEEN THE LARGEST SOURCE OF ELECTRICITY IN FRANCE.

3

CONTROL RODS

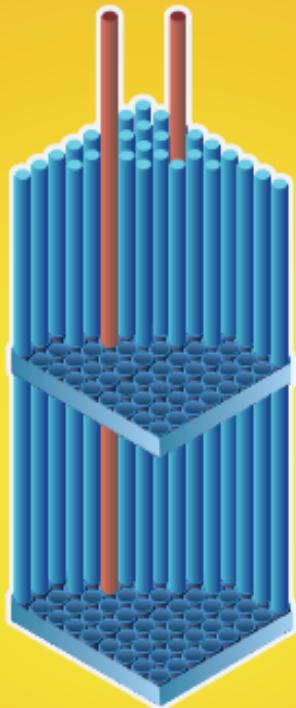


DID YOU KNOW?

THE LONG TERM STORAGE OF
RADIOACTIVE WASTE WILL BE DEEP
UNDERGROUND IN A GEOLOGICAL
DISPOSAL FACILITY.

3

CONTROL RODS

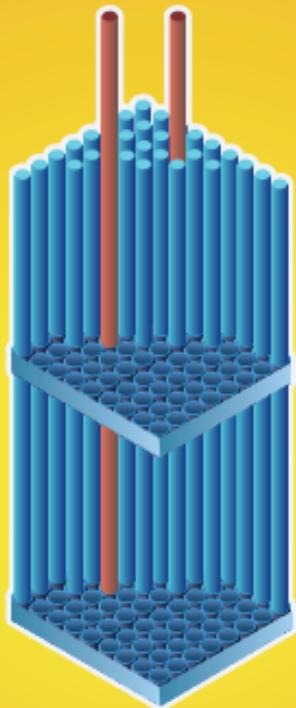


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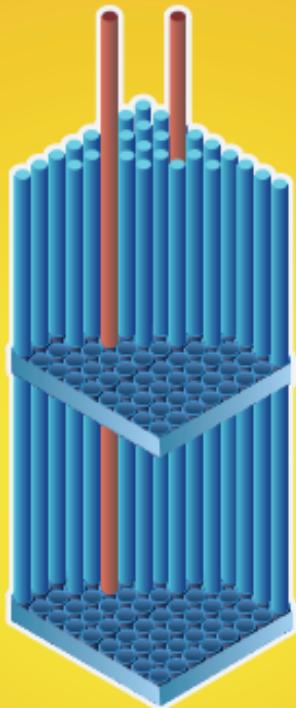


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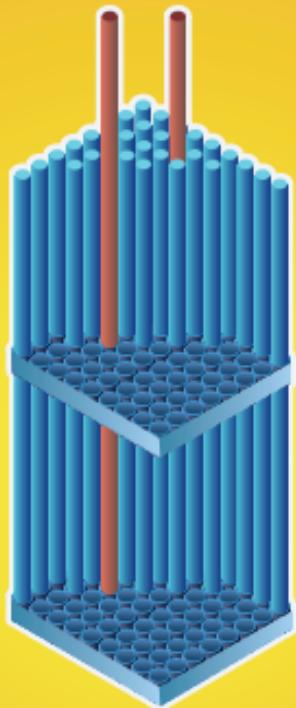


DID YOU KNOW?

CONTROL RODS ARE LIKE BRAKES IN A CAR, SOME SLOW YOU DOWN AND OTHERS SLAM YOU TO A COMPLETE STOP.

3

CONTROL RODS

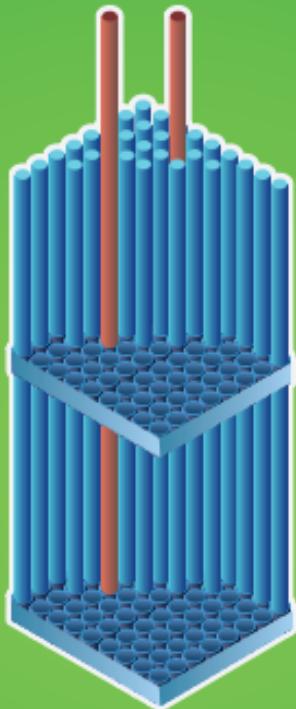


DID YOU KNOW?

CONTROL RODS ARE MADE FROM ELEMENTS LIKE BORON, COBALT OR CADMIUM, THAT ARE GOOD AT ABSORBING NEUTRONS.

3

CONTROL RODS

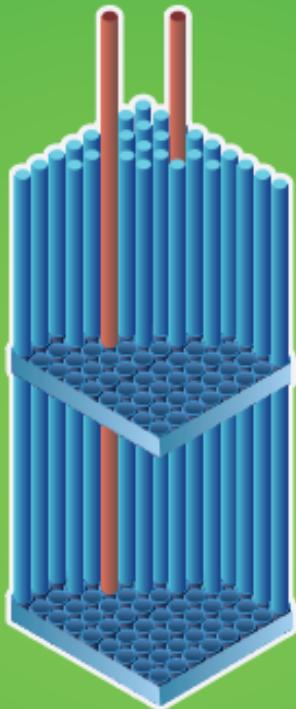


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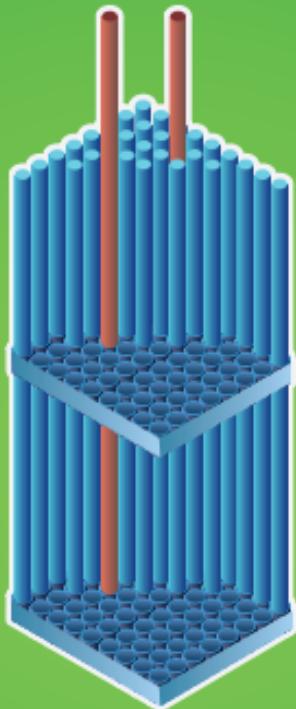


DID YOU KNOW?

RADIOACTIVE CARBON-14 WAS USED TO DETERMINE HOW PHOTOSYNTHESIS WORKS IN PLANTS!

3

CONTROL RODS

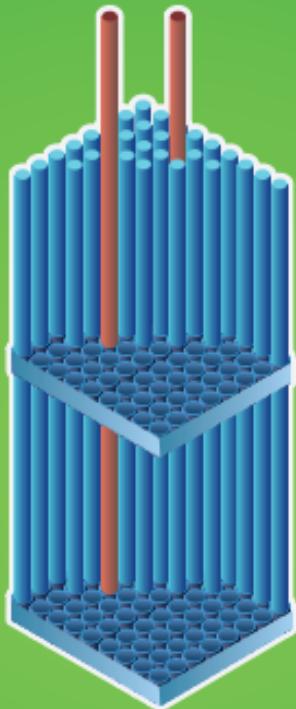


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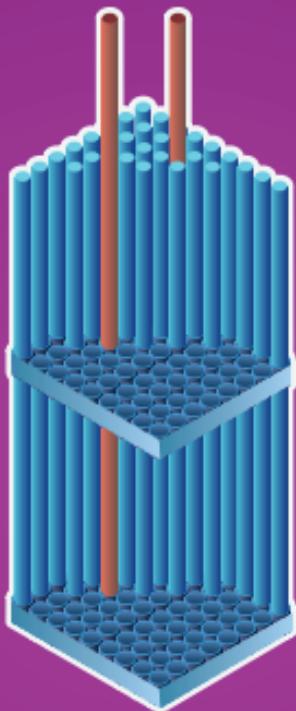


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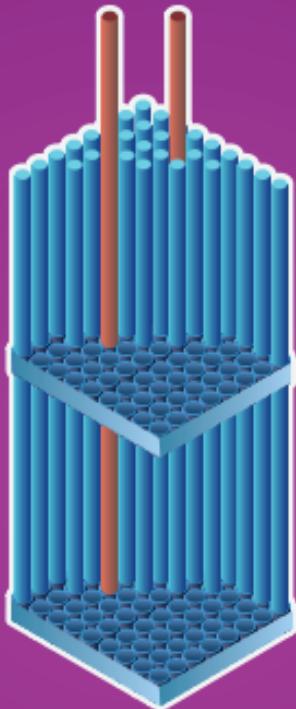


DID YOU KNOW?

NUCLEAR FISSION IS A CHAIN REACTION, EACH FISSION STEP RELEASES MORE NEUTRONS WHICH ARE ABSORBED BY CONTROL RODS.

3

CONTROL RODS

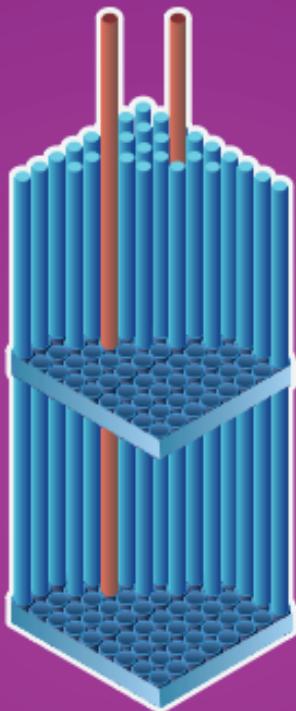


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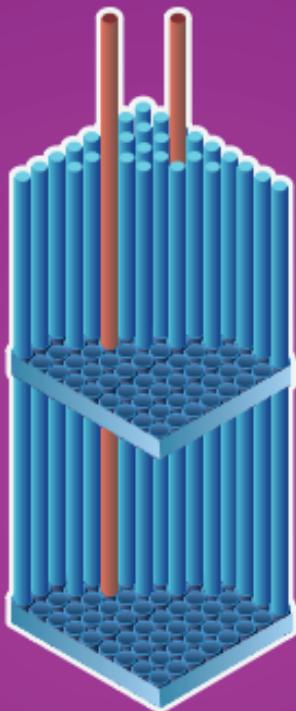


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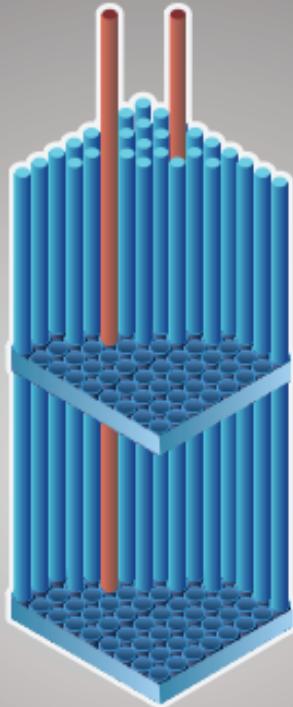


DID YOU KNOW?

UNLIKE RENEWABLE ENERGY SOURCES, NUCLEAR POWER DOES NOT DEPEND ON THE WEATHER TO PRODUCE ELECTRICITY.

3

CONTROL RODS

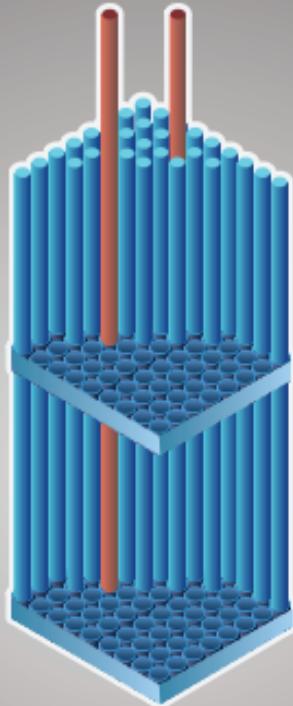


DID YOU KNOW?

MODERN REACTORS ARE INHERENTLY
SAFE; IF ANYTHING GOES WRONG
CONTROL RODS AUTOMATICALLY
DROP INTO THE REACTOR
TO SHUT IT DOWN.

3

CONTROL RODS

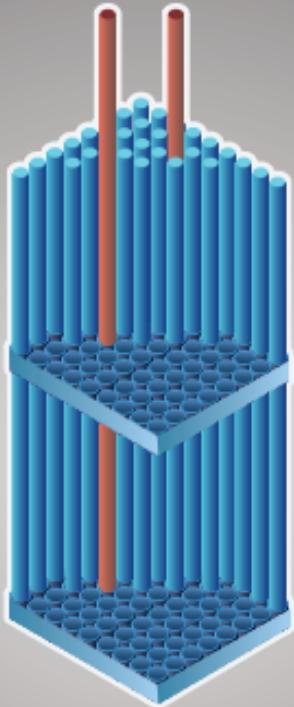


DID YOU KNOW?

RADIOISOTOPES ARE USED IN
BIOLOGICAL STUDIES INCLUDING THE
GROWTH AND METABOLISM OF LIVING
CREATURES.

3

CONTROL RODS



DID YOU KNOW?

MODERN REACTORS CAN
SHUT DOWN IN AS LITTLE AS
2 SECONDS!

4

COOLANT



DID YOU KNOW?

COOLANT REMOVES HEAT FROM
NUCLEAR REACTOR CORES AND
TRANSFERS THE HEAT TO
ELECTRICAL GENERATORS.

4

COOLANT



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

4

COOLANT



DID YOU KNOW?

SMALL MODULAR REACTORS ARE
MANUFACTURED IN FACTORIES,
ALLOWING FOR HIGHER QUALITY
STANDARDS.

4

COOLANT



DID YOU KNOW?

COOLANT IS USED TO ENSURE THAT THE NUCLEAR FUEL DOESN'T MELT.

4

COOLANT



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COOLANT



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

4

COOLANT



DID YOU KNOW?

**SMOKE DETECTORS USE
AMERICIUM-241 WHICH IS
A RADIOACTIVE ISOTOPE!**

4

COOLANT



DID YOU KNOW?

RADIATION IS SOMETIMES
USED TO STERILISE FOOD.

4

COOLANT



DID YOU KNOW?

COOLANT REMOVES HEAT FROM
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4

COOLANT



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

4

COOLANT



DID YOU KNOW?

THE FAMOUS RADIATION TREFOIL SYMBOL WAS FIRST USED IN 1946 IN THE UNIVERSITY OF CALIFORNIA.

4

COOLANT



DID YOU KNOW?

AT HIGH TEMPERATURES
(AND DONE SAFELY!)
HYDROGEN CAN BE HARNESSSED
AND USED AS TRANSPORT FUEL.

4

COOLANT



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

4

COOLANT



DID YOU KNOW?

WHEN METAL SHEETS ARE
MANUFACTURED, NUCLEAR BETA
DECAY IS USED TO MEASURE THEIR
THICKNESS!

4

COOLANT



DID YOU KNOW?

COOLANT REMOVES HEAT FROM
NUCLEAR REACTOR CORES AND
TRANSFERS THE HEAT TO
ELECTRICAL GENERATORS.

4

COOLANT



DID YOU KNOW?

ALPHA PARTICLES ARE STOPPED BY A THIN SHEET OF PAPER, BUT GAMMA RAYS NEED THICK LEAD TO STOP.

4

COOLANT



DID YOU KNOW?

COOLANT REMOVES HEAT FROM
NUCLEAR REACTOR CORES AND
TRANSFERS THE HEAT TO
ELECTRICAL GENERATORS.

4

COOLANT



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

4

COOLANT



DID YOU KNOW?

NUCLEAR REACTORS ARE OFTEN LOCATED NEAR OCEANS DUE TO THE WATER NEEDED TO COOL THE REACTOR.

4

COOLANT



DID YOU KNOW?

THREE TYPES OF PARTICLE MAKE UP AN ATOM, PROTONS, NEUTRONS, AND ELECTRONS.

4

COOLANT



DID YOU KNOW?

FRANCE HAS SO MUCH SURPLUS NUCLEAR ENERGY THAT THE EXCESS IS EXPORTED TO COUNTRIES SUCH AS THE UK, ITALY AND SPAIN!

4

COOLANT



DID YOU KNOW?

MARIE CURIE WAS THE FIRST WOMAN EVER TO WIN A NOBEL PRIZE, FOR HER CONTRIBUTION TO STUDIES OF RADIATION.

4

COOLANT



DID YOU KNOW?

THERE ARE 118 KNOWN ELEMENTS IN THE UNIVERSE.

5

MODERATOR



DID YOU KNOW?

THROUGH COLLISIONS WITH THE MODERATOR, THE NEUTRONS ARE SLOWED TO THE CORRECT SPEED FOR FISSION TO OCCUR

5

MODERATOR



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

5

MODERATOR



DID YOU KNOW?

NUCLEAR REACTORS DON'T WORK IF
THE NEUTRONS IN THE CORE ARE
MOVING TOO QUICKLY

5

MODERATOR



DID YOU KNOW?

WE ARE EXPOSED TO RADIATION
NATURALLY EVERY DAY FROM THE SUN,
THE ROCKS, AND EVEN OUR FOOD!

5

MODERATOR



DID YOU KNOW?

MODERATORS SLOW DOWN NEUTRONS
THROUGH COLLISIONS BETWEEN
NUCLEI AND FISSION NEUTRONS.

5

MODERATOR



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

5

MODERATOR



DID YOU KNOW?

RADIOACTIVE DECAY IS
A SIGNIFICANT SOURCE OF HEAT
IN THE EARTH'S CORE!

5

MODERATOR



DID YOU KNOW?

MODERATORS SLOW DOWN NEUTRONS
TO LESS THAN A TENTH OF THEIR
INITIAL SPEED!

5

MODERATOR



DID YOU KNOW?

MODERATORS SLOW DOWN NEUTRONS
THROUGH COLLISIONS BETWEEN
NUCLEI AND FISSION NEUTRONS.

5

MODERATOR



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

5

MODERATOR



DID YOU KNOW?

RADIOACTIVE HALF-LIVES VARY FROM LESS THAN A BILLIONTH OF A SECOND TO GREATER THAN THE AGE OF THE UNIVERSE!

5

MODERATOR



DID YOU KNOW?

STUDIES HAVE SHOWN THAT WE
EXPERIENCE MORE RADIATION FROM
ELECTRICAL DEVICES THAN
NUCLEAR PLANTS!

5

MODERATOR



DID YOU KNOW?

MODERATORS SLOW DOWN NEUTRONS
THROUGH COLLISIONS BETWEEN
NUCLEI AND FISSION NEUTRONS.

5

MODERATOR



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

5

MODERATOR



DID YOU KNOW?

'THE WORD 'NUCLEAR' RELATES TO THE NUCLEUS OF ATOMS! NUCLEAR PHYSICS IS THE STUDY OF ATOMIC NUCLEI AND THEIR INTERACTIONS.'

5

MODERATOR



DID YOU KNOW?

STRANGELY, SLOWER NEUTRONS ARE MORE LIKELY TO CAUSE FISSION THAN FASTER NEUTRONS.

5

MODERATOR



DID YOU KNOW?

MODERATORS SLOW DOWN NEUTRONS
THROUGH COLLISIONS BETWEEN
NUCLEI AND FISSION NEUTRONS.

5

MODERATOR



DID YOU KNOW?

ALMOST ALL CURRENTLY OPERATING NUCLEAR POWER PLANTS USE WATER AS THEIR COOLANT AND MODERATOR.

5

MODERATOR



DID YOU KNOW?

HELIUM IS EMITTED DURING
ALPHA DECAY!

5

MODERATOR



DID YOU KNOW?

CRITICALITY MEANS A REACTOR IS
CONTROLLING A SUSTAINED
FISSION CHAIN REACTION- IT ISN'T
A BAD THING!

5

MODERATOR



DID YOU KNOW?

CALDER HALL IN CUMBRIA WAS THE
WORLD'S FIRST COMMERCIAL
POWER STATION.

5

MODERATOR



DID YOU KNOW?

THE RADIOACTIVE DECAY OF CARBON-14 IS USED IN CARBON DATING ANCIENT ORGANIC MATTER.

5

MODERATOR



DID YOU KNOW?

NUCLEAR FISSION WAS NAMED AFTER
THE BIOLOGICAL FISSION OF
LIVING CELLS.

6

TURBINE



DID YOU KNOW?

THE ROTATION OF TURBINES SPINS AN ELECTRIC GENERATOR, PRODUCING ELECTRICITY THAT IS SENT TO THE NATIONAL GRID.

6

TURBINE



DID YOU KNOW?

STEAM THAT ENTERS THE TURBINE IS GENERATED FROM THE HEATING OF WATER IN THE NUCLEAR REACTOR.

6

TURBINE



DID YOU KNOW?

NUCLEAR RADIOTHERAPY IS USED IN
VARIOUS CANCER TREATMENTS.

6

TURBINE



DID YOU KNOW?

REACTORS HAVE CONTAINMENT
STRONG ENOUGH TO WITHSTAND
SEVERE EARTHQUAKES AND
HURRICANE-FORCE WINDS!

6

TURBINE



DID YOU KNOW?

TURBINES CAUSE STEAM TO LOSE ENERGY AND CONDENSE BACK TO A COOLER LIQUID WATER.

6

TURBINE



DID YOU KNOW?

THE ROTATION OF TURBINES SPINS AN ELECTRIC GENERATOR, PRODUCING ELECTRICITY THAT IS SENT TO THE NATIONAL GRID.

6

TURBINE



DID YOU KNOW?

STEAM THAT ENTERS THE TURBINE IS GENERATED FROM THE HEATING OF WATER IN THE NUCLEAR REACTOR.

6

TURBINE



DID YOU KNOW?

NUCLEAR FUSION HAS THE POTENTIAL
TO PRODUCE LIMITLESS ENERGY!

6

TURBINE



DID YOU KNOW?

STEAM THAT ENTERS THE TURBINE IS GENERATED FROM THE HEATING OF WATER IN THE NUCLEAR REACTOR.

6

TURBINE



DID YOU KNOW?

THE INTERNATIONAL ATOMIC ENERGY AGENCY ENCOURAGES PEACEFUL DEVELOPMENT OF NUCLEAR TECHNOLOGY

6

TURBINE



DID YOU KNOW?

THE ROTATION OF TURBINES SPINS AN ELECTRIC GENERATOR, PRODUCING ELECTRICITY THAT IS SENT TO THE NATIONAL GRID.

6

TURBINE



DID YOU KNOW?

SUBMARINES CAN BE POWERED BY NUCLEAR REACTORS AND SO DON'T NEED TO COME ABOVE SURFACE LEVEL TO REFUEL!

6

TURBINE



DID YOU KNOW?

NATURAL HYDROGEN HAS NO NEUTRONS. HYDROGEN WITH 1 NEUTRON IS CALLED DEUTERIUM, AND HYDROGEN WITH 2 NEUTRONS IS CALLED TRITIUM.

6

TURBINE



DID YOU KNOW?

ONE KILOGRAM OF URANIUM
GENERATES NEARLY 3,000,000 TIMES
MORE ENERGY THAN
A KILOGRAM OF COAL!

6

TURBINE



DID YOU KNOW?

NUCLEAR RELEASES 30X LESS
GREENHOUSE GASES
THAN COAL PER KWH.

6

TURBINE



DID YOU KNOW?

THE ROTATION OF TURBINES SPINS AN ELECTRIC GENERATOR, PRODUCING ELECTRICITY THAT IS SENT TO THE NATIONAL GRID.

6

TURBINE



DID YOU KNOW?

THE ROTATION OF TURBINES SPINS AN ELECTRIC GENERATOR, PRODUCING ELECTRICITY THAT IS SENT TO THE NATIONAL GRID.

6

TURBINE



DID YOU KNOW?

NUCLEAR REACTORS EMPLOY MANY 'PASSIVE SAFETY' FEATURES, THAT DON'T REQUIRE ANY ACTION TO ENSURE SAFETY.

6

TURBINE



DID YOU KNOW?

STEAM THAT ENTERS THE TURBINE IS GENERATED FROM THE HEATING OF WATER IN THE NUCLEAR REACTOR.

6

TURBINE

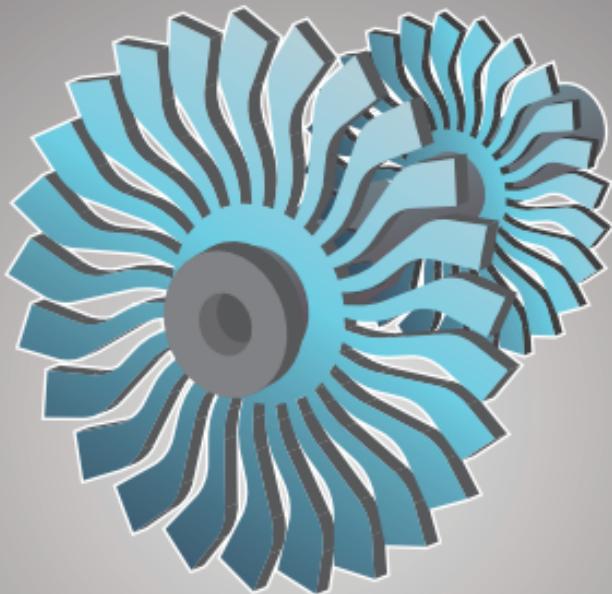


DID YOU KNOW?

BANANAS AND BRAZIL NUTS
ARE BOTH RADIOACTIVE!

6

TURBINE

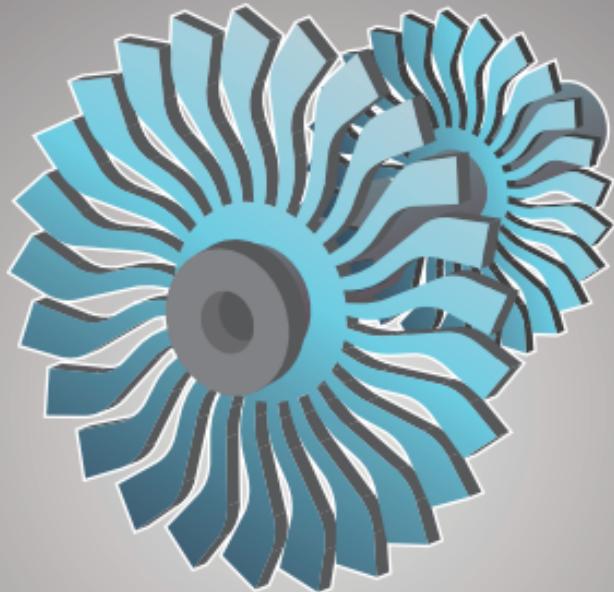


DID YOU KNOW?

THERE ARE THREE MAIN TYPES OF
RADIOACTIVE DECAY; ALPHA,
BETA, AND GAMMA

6

TURBINE

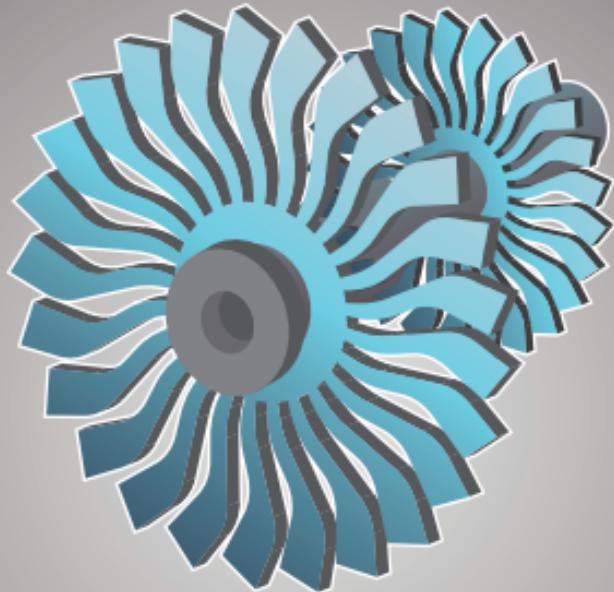


DID YOU KNOW?

NUCLEAR REACTORS ARE
ESSENTIALLY GIANT KETTLES,
THEY'RE JUST HEATING WATER!

6

TURBINE



DID YOU KNOW?

SOME ISOTOPES CAN DECAY
BY EMITTING ANTI PARTICLES!



DISMANTLE

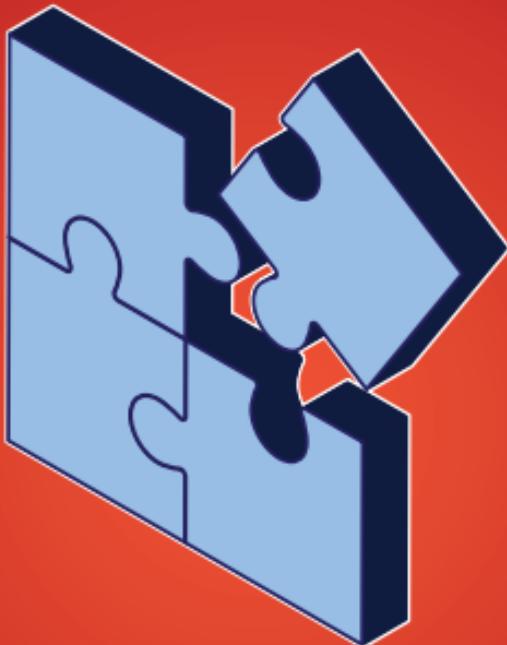


ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.

!

DISMANTLE



ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.

!

DISMANTLE



ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.

!

DISMANTLE



ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.

!

DISMANTLE



ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.

!

DISMANTLE



ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.



DISMANTLE

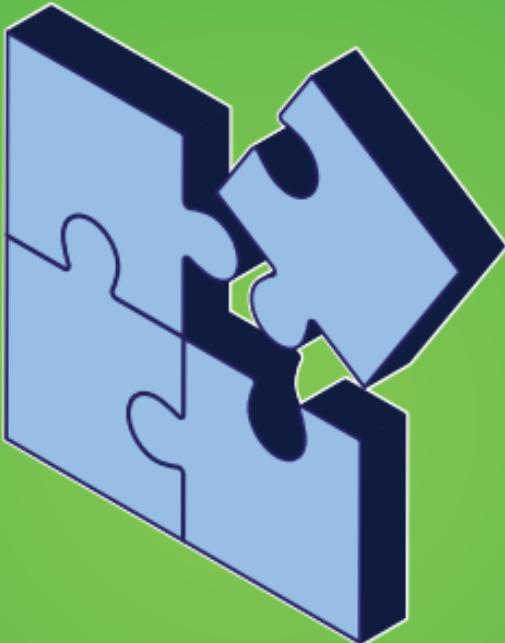


ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.



DISMANTLE

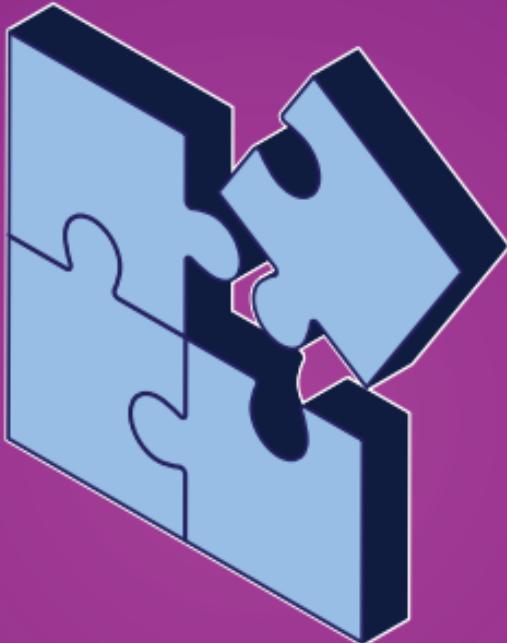


ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.



DISMANTLE

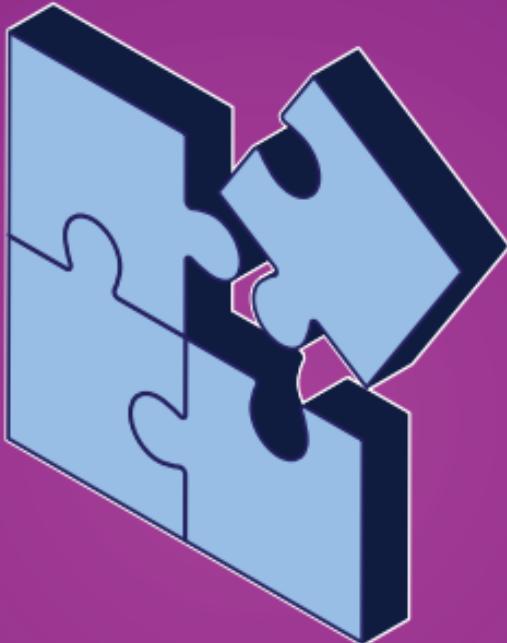


ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.



DISMANTLE

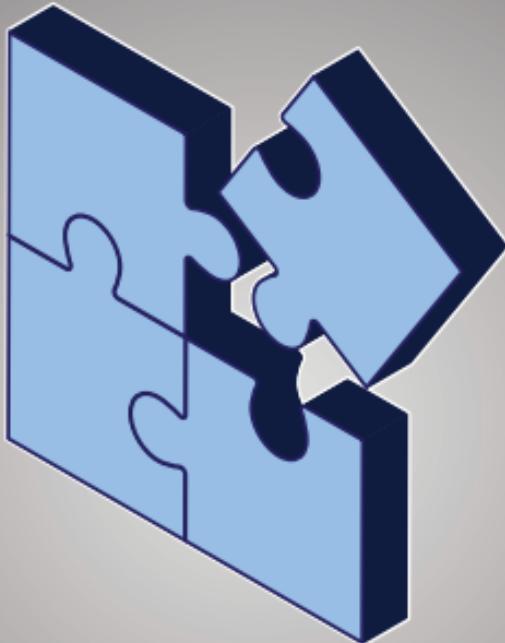


ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.



DISMANTLE



ACTION

DISCARD A COMPONENT
OF ANOTHER PLAYER'S
REACTOR.

!

COMMUNAL BONUS



ACTION

DRAW 3 CARDS FROM
THE COMMUNAL PILE

!

COMMUNAL BONUS



ACTION

DRAW 3 CARDS FROM
THE COMMUNAL PILE

!

COMMUNAL BONUS



ACTION

DRAW 3 CARDS FROM
THE COMMUNAL PILE

SWAP



ACTION

SWAP A CARD IN YOUR REACTOR
(OR HAND) FOR ANOTHER CARD
(WORDED LIKE THIS TO ALLOW YOU
TO SWAP YOUR OWN COMPONENTS
AROUND)

!

SWAP



ACTION

**SWAP A CARD IN YOUR REACTOR
FOR ONE IN SOMEONE ELSE'S**



SWAP



ACTION

**SWAP A CARD IN YOUR REACTOR
FOR ONE IN SOMEONE ELSE'S**



SWAP



ACTION

SWAP A CARD IN YOUR REACTOR
FOR ONE IN SOMEONE ELSE'S

SWAP



ACTION

**SWAP A CARD IN YOUR REACTOR
FOR ONE IN SOMEONE ELSE'S**



SWAP



ACTION

SWAP A CARD IN YOUR REACTOR
FOR ONE IN SOMEONE ELSE'S

!

PERSONAL BONUS



ACTION

DRAW 2 CARDS FROM
YOUR PERSONAL PILE

!

PERSONAL BONUS



ACTION

DRAW 2 CARDS FROM
YOUR PERSONAL PILE

!

PERSONAL BONUS



ACTION

DRAW 2 CARDS FROM
YOUR PERSONAL PILE

!

STEAL



ACTION

TAKE A CARD FROM
SOMEONE ELSE'S HAND

!

STEAL



ACTION

TAKE A CARD FROM
SOMEONE ELSE'S HAND

!

STEAL



ACTION

TAKE A CARD FROM
SOMEONE ELSE'S HAND

!

STEAL



ACTION

TAKE A CARD FROM
SOMEONE ELSE'S HAND

!

STEAL



ACTION

TAKE A CARD FROM
SOMEONE ELSE'S HAND



DISCARD



ACTION

DISCARD A CARD FROM
SOMEONE ELSE'S HAND



DISCARD



ACTION

DISCARD A CARD FROM
SOMEONE ELSE'S HAND

!

PROTECT

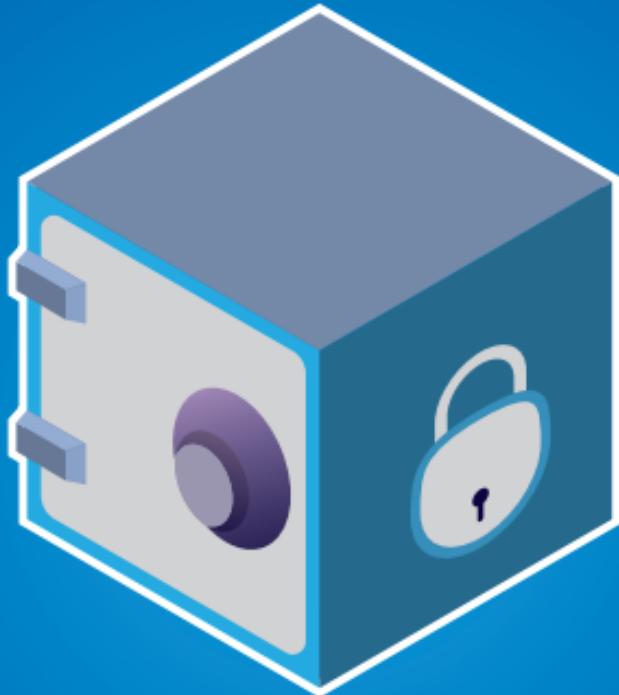


ACTION

NO OTHER PLAYER CAN MODIFY
A REACTOR WITH THIS
CARD PLAYED ON IT.
(SO YOU CAN'T EG. SWAP OR
DOWNGRADE TOO)

!

PROTECT

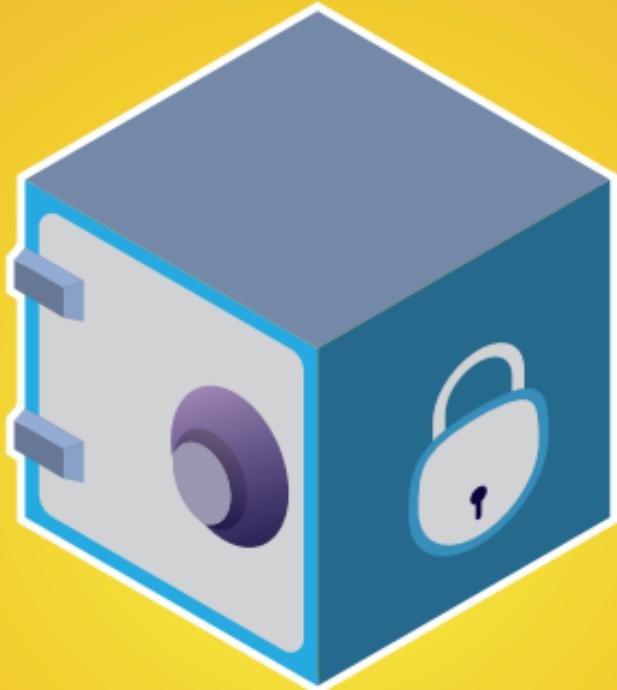


ACTION

NO PLAYER CAN DAMAGE
A REACTOR WITH THIS CARD
PLAYED ON IT.

!

PROTECT

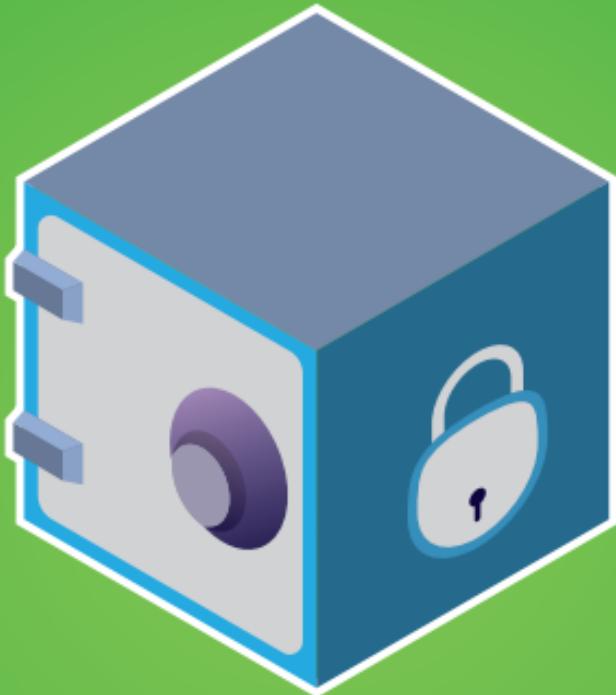


ACTION

NO PLAYER CAN DAMAGE
A REACTOR WITH THIS CARD
PLAYED ON IT.

!

PROTECT

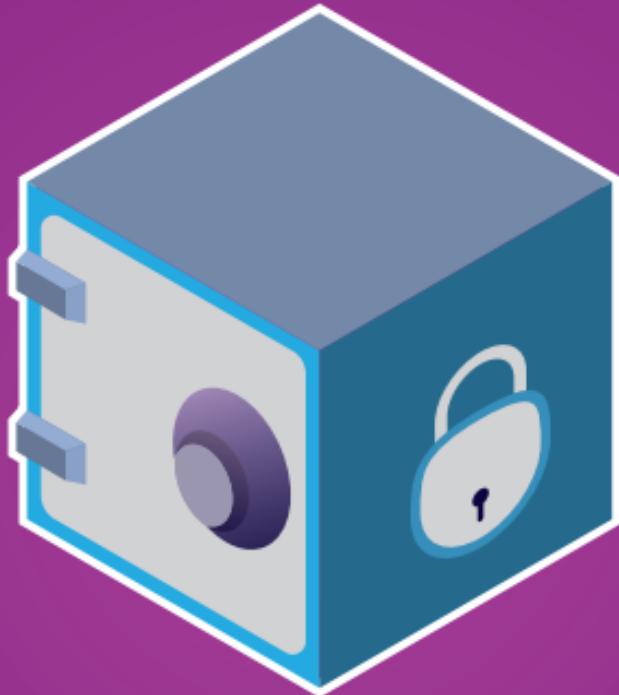


ACTION

NO PLAYER CAN DAMAGE
A REACTOR WITH THIS CARD
PLAYED ON IT.

!

PROTECT

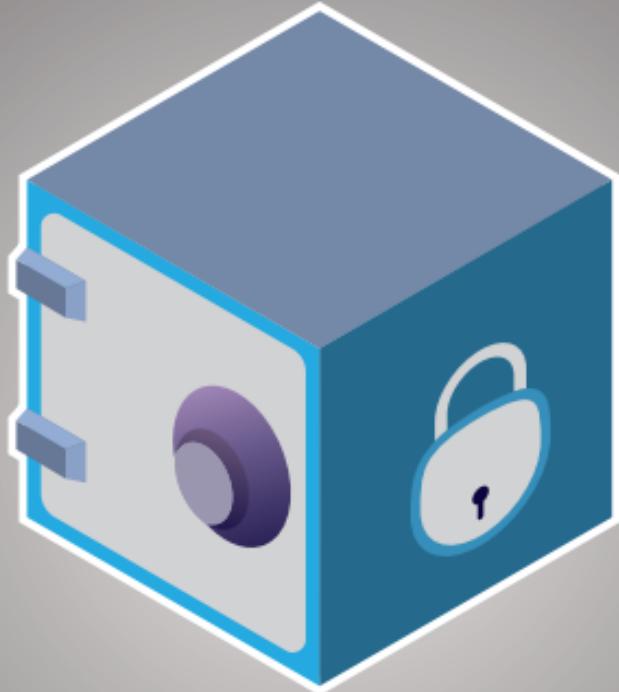


ACTION

NO PLAYER CAN DAMAGE
A REACTOR WITH THIS CARD
PLAYED ON IT.

!

PROTECT



ACTION

NO PLAYER CAN DAMAGE
A REACTOR WITH THIS CARD
PLAYED ON IT.

!

POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)

!

POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)

!

POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)

!

POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



POWER ON



ACTION

ONCE YOU HAVE A COMPLETE
REACTOR, PLAY THIS CARD
TO GENERATE POWER
(AND GAIN POINTS!)



ENRICHMENT



UPGRADE

THIS CARD UPGRADES URANIUM
(DOUBLES THE SCORE OF THE CARD,
AND +1 POINT TO THE PLAYER WHOSE
REACTOR IT IS PLAYED ON!)



ENRICHMENT



UPGRADE

THIS CARD UPGRADES URANIUM
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS!)



ENRICHMENT



UPGRADE

THIS CARD UPGRADES URANIUM
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS!)



ENRICHMENT



UPGRADE

THIS CARD UPGRADES URANIUM
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS!)



ENRICHMENT



UPGRADE

THIS CARD UPGRADES URANIUM
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS!)



STEAM SURGE



UPGRADE

THIS CARD UPGRADES TURBINE
(DOUBLES THE SCORE OF THE CARD,
AND +1 POINT TO THE PLAYER
WHOSE REACTOR IT IS PLAYED ON!)



STEAM SURGE



UPGRADE

**THIS CARD UPGRADES TURBINE
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS!)**



STEAM SURGE

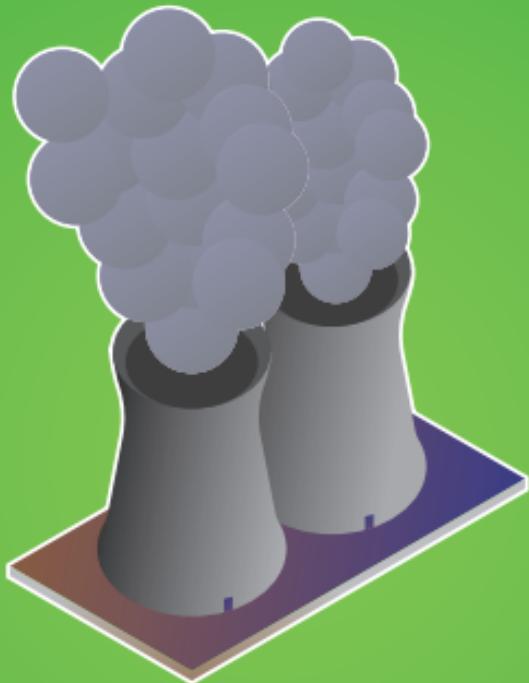


UPGRADE

**THIS CARD UPGRADES TURBINE
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS!)**



STEAM SURGE



UPGRADE

THIS CARD UPGRADES TURBINE
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS!)



STEAM SURGE



UPGRADE

THIS CARD UPGRADES TURBINE
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS!)



NEUTRON FLUX



UPGRADE

THIS CARD UPGRADES NEUTRONS
(DOUBLES THE SCORE OF THE CARD,
+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS PLAYED ON!)



NEUTRON FLUX



UPGRADE

THIS CARD UPGRADES NEUTRONS
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS)



NEUTRON FLUX



UPGRADE

THIS CARD UPGRADES NEUTRONS
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS)



NEUTRON FLUX



UPGRADE

THIS CARD UPGRADES NEUTRONS
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS)



NEUTRON FLUX



UPGRADE

THIS CARD UPGRADES NEUTRONS
(+1 POINT TO THE PLAYER WHOSE
REACTOR IT IS)



REPROCESS



UPGRADE

PICK UP ANY REACTOR PART CARD
FROM THE DISCARD PILE



REPROCESS



UPGRADE

PICK UP A CARD FROM
THE DISCARD PILE



REPROCESS



UPGRADE

PICK UP A CARD FROM
THE DISCARD PILE



REPROCESS



UPGRADE

PICK UP A CARD FROM
THE DISCARD PILE

REPROCESS



UPGRADE

PICK UP A CARD FROM
THE DISCARD PILE



REPROCESS



UPGRADE

PICK UP A CARD FROM
THE DISCARD PILE



REPROCESS



UPGRADE

PICK UP A CARD FROM
THE DISCARD PILE



REPROCESS



UPGRADE

PICK UP A CARD FROM
THE DISCARD PILE

!

PROJECT DELAYS



ACTION

CHOOSE A PLAYER
TO SKIP A TURN

!

PROJECT DELAYS



ACTION

CHOOSE A PLAYER
TO SKIP A TURN

!

PROJECT DELAYS



ACTION

CHOOSE A PLAYER
TO SKIP A TURN

!

PROJECT DELAYS



ACTION

CHOOSE A PLAYER
TO SKIP A TURN

!

PROJECT DELAYS



ACTION

CHOOSE A PLAYER
TO SKIP A TURN

!

PROJECT DELAYS



ACTION

CHOOSE A PLAYER
TO SKIP A TURN

!

PROJECT DELAYS



ACTION

CHOOSE A PLAYER
TO SKIP A TURN

!

PROJECT DELAYS



ACTION

CHOOSE A PLAYER
TO SKIP A TURN



SMALL MODULAR REACTOR

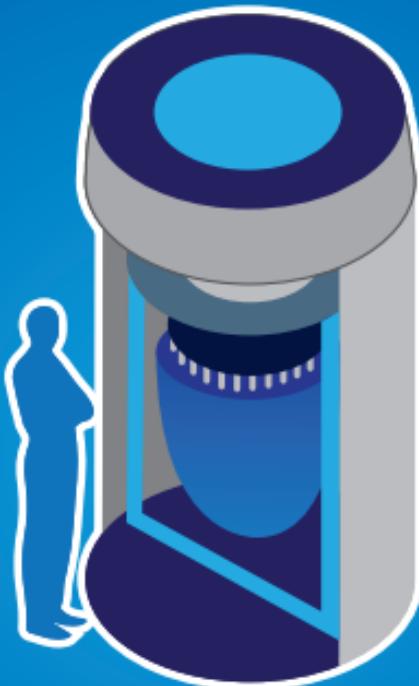


UPGRADE

COMPLETE YOUR REACTOR
WITH ANY 4 DIFFERENT
REACTOR COMPONENTS



SMALL MODULAR REACTOR



UPGRADE

COMPLETE YOUR REACTOR
WITH ANY 4 DIFFERENT
REACTOR COMPONENTS



SMALL MODULAR REACTOR



UPGRADE

COMPLETE YOUR REACTOR
WITH ANY 4 DIFFERENT
REACTOR COMPONENTS



SMALL MODULAR REACTOR



UPGRADE

COMPLETE YOUR REACTOR
WITH ANY 4 DIFFERENT
REACTOR COMPONENTS



SMALL MODULAR REACTOR

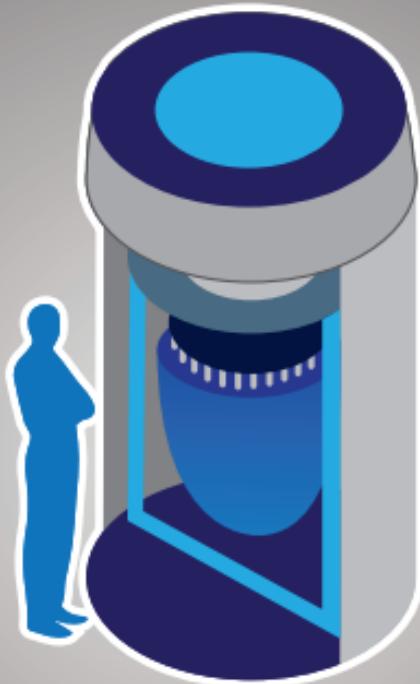


UPGRADE

COMPLETE YOUR REACTOR
WITH ANY 4 DIFFERENT
REACTOR COMPONENTS



SMALL MODULAR REACTOR



UPGRADE

COMPLETE YOUR REACTOR
WITH ANY 4 DIFFERENT
REACTOR COMPONENTS

!

SHUT DOWN

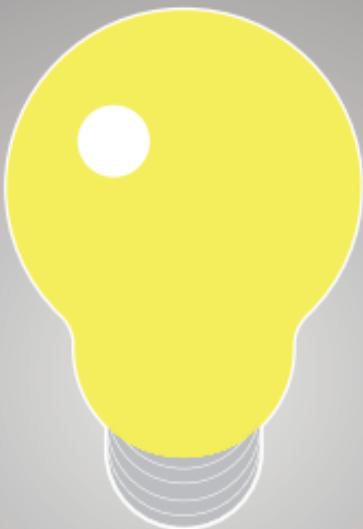


ACTION

CHOOSE A PLAYER TO SHUT DOWN
(AND DISCARD)
ONE OF THEIR REACTORS



NEW RESEARCH BREAKTHROUGH



UPGRADE

A NEW RESEARCH BREAKTHROUGH
ALLOWS YOU TO UPGRADE ANY
COMPONENT OF YOUR REACTOR



COLOUR CHANGE

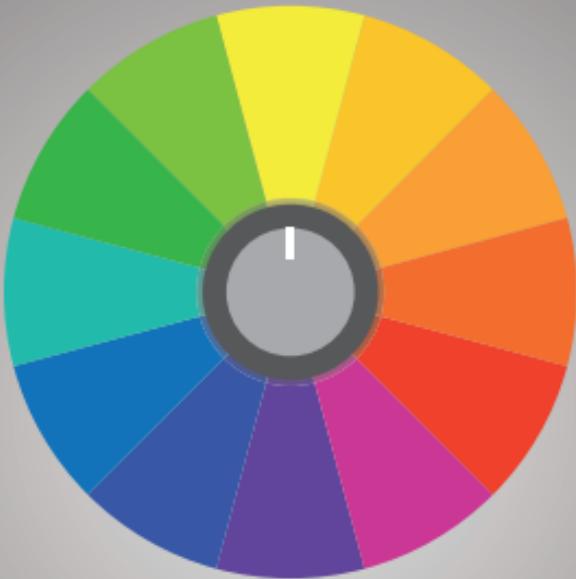


UPGRADE

CHANGE THE COLOUR OF
ANY REACTOR COMPONENT



COLOUR CHANGE



UPGRADE

CHANGE THE COLOUR OF
ANY REACTOR COMPONENT

!

HALF-LIFE



ACTION

REMOVE ALL OF YOUR COLOUR
CARDS FROM THE TABLE AND
GET HALF OF THE POINTS

!

HALF-LIFE



ACTION

REMOVE ALL OF YOUR COLOUR
CARDS FROM THE TABLE AND
GET HALF OF THE POINTS



DEPLETED URANIUM



UPGRADE

PLAY THIS ON A URANIUM
CARD AND IT SCORES -1.



DEPLETED URANIUM



UPGRADE

PLAY THIS ON A URANIUM
CARD AND IT SCORES -1.