

Women in Science DIY Kit

Women in Science is a card game that familiarizes players with remarkable, often unknown, women of science and offers inspiring role models for kids. You can print the game by yourself using this file or order a copy from our website: www.LuanaGames.com

This project was made possible by hundreds of backers who supported our crowdfunding campaign. Thank you so much!

Update 2.0: Added the Women in Space Expansion (16 cards)

We would like to thank our sponsors:



Nova: science for curious minds

Nova.org.au



WomenInBio.org

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Instructions: Print pages 2 to 9, then put the sheets back in the printer (other side, same direction) and print page 10 on the back of the cards (you might want to test it once to be sure it fits). You can then cut the cards following the dashed lines. The best way is to use a paper trimmer, and cut about 2mm from the dashed line towards the inside of the card. We recommend using glossy white paper between 150g/m² and 300g/m².



MADE IMPORTANT DISCOVERIES RELATED TO RADIOACTIVITY. SHE PRACTICIPATED IN THE MANHATTAN PROJECT, CREATED THE WU EXPERIMENT, AND IMPROVED GEIGER COUNTERS.



COMPUTER SCIENTIST ROSE
DIENG-KUNTZ SPECIALIZED IN ARTIFICIAL
INTELLIGENCE. SHE WORKED ON KNOWLEDGE
MANAGEMENT AND THE SEMANTIC WEB.



FIRST WOMAN FROM NORTH AFRICA
TO BECOME A DOCTOR AND A CYNECOLOGIST. SHE
WAS A PIONEER IN THE FIELD OF FAMILY PLANNING.



A BIOLOGIST AND PROFESSOR OF ANATOMY, WANGARI MUTA MAATHAI WON THE NOBEL PEACE PRIZE IN RECOGNITION OF HER CONTRIBUTION TO SUSTAINABLE DEVELOPMENT.

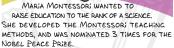


PEDIATRICIAN AND PSYCHOANALYST
FRANÇO'SE DOLTO IS RECOGNIZED FOR HER
RESEARCH INTO THE PSYCHOLOGY OF THE BABY AND
THE CHILD, AND OF THEIR BODY LANGUAGE.



MATHEMATICIAN CRACE HOPPER
DEVELOPED THE FIRST COMPILER AND THE
COBOL PROCRAMMING LANGUAGE, SHE POPULARIZED
THE STORY OF THE FIRST "REAL" COMPUTER BUG,





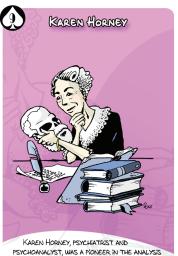


PSYCHOANALYST MELANIE KLEIN
WAS INTERESTED IN THE PSYCHOLOGY OF THE
CHILD. SHE DEVELOPED NEW TREATMENT TECHNIQUES
AND GREATLY INFLUENCED PSYCHOANALYSIS.



PSYCHOLOGIST ALICE MILLER WAS

VERY INFLUENTIAL IN STUDYING VIOLENCE IN
EDUCATION, SHE DENOUNCED CHILD-RAISING METHODS
THAT HARM CHILDREN OR DO NOT MEET THEIR NEEDS.



KAREN HORNEY, PSYCHIATRIST AND PSYCHOANALYST, WAS A PIONEER IN THE ANALYSIS OF FEMININE PSYCHOLOGY. SHE ALITHORED ONE OF THE FIRST SELF-HELP BOOKS.



KOSALIND FRANKLIN, A CHEMIST AND X-RAY CRYSTALLOGRAPHER, WAS INSTRUMENTAL IN DISCOVERING THE STRUCTURE OF DNA, SHE WAS ALSO A PIONEER IN THE MOLECULAR ANALYSIS OF VIRUSES.



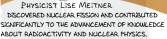
ASTRONOMER AND ASTROPHYSICIST

CECILIA PAYNE ANALYZED THE SPECTRA OF

STARS AND NOVAE, AND DISCOVERED THAT THE STARS

ARE COMPOSED OF 39% HYDROGEN AND HELIUM.







PHYSICIST MARIA TELKES WAS A PIONEER IN SOLAR ENERGY TECHNOLOGY, SHE DESIGNED, AMONG OTHER THINGS, THE FIRST THERMOELECTRIC POWER GENERATOR AND THE FIRST SOLAR HEATING SYSTEM.







HUMANISTIC ANTHROPOLOGY.



L'LL'AN GILBRETH WAS AT ONCE AN INDUSTRIAL ENGINEER, A PSYCHOLOGIST AND THE MOTHER OF 12 CHILDREN, SHE WAS A PIONEER IN ERGONOMICS AND IN WORK PSYCHOLOGY.



ROTATING BODIES, THE KOVALEVSKAYA TOP IS USED

TO MODEL SATURN'S RINGS.

ELLEN HAYES WAS A MATHEMATICIAN,
AN ASTRONOMER AND A TEACHER. SHE
CALCULATED THE ORBIT OF ASTEROIDS AND
CELESTIAL BODIES, SHE WAS ALSO A SUFFRAGIST
AND A LABOR RIGHTS ACTIVIST.

Ellen Hayes



MROTE AND TRANSLATED BOOKS IN MANY
FIELDS OF SCIENCE. SHE PREDICTED THAT ANOTHER
PLANET WAS PERTURBING LIRANUS BEFORE NEPTUNE
WAS DISCOVERED.



EMMY NOETHER WAS A VERY INFLUENTIAL MATHEMATICIAN. SHE IS KNOWN FOR HER SIGNIFICANT CONTRIBUTIONS TO ABSTRACT ALCEBRA AND THEORETICAL PHYSICS.



ENTOMOLOGIST MARGARET
FOUNTAINE TRAVELLED ACROSS 60 COUNTRIES
TO COLLECT, OBSERVE AND SKETCH INSECTS. SHE WAS
AN EXPERT IN TROPICAL BUTTERFLY LIFE-CYCLES.



ELLEN SWALLOW RICHARDS WAS
AN INDUSTRIAL CHEMIST AND A PIONEER IN
SANITARY ENGINEERING AND DOMESTIC SCIENCE.
SHE WAS ONE OF THE FIRST PEOPLE TO APPLY
CHEMISTRY TO THE STUDY OF NUTRITION.



PHYSICIST LEONA WOODS HELPED BUILD THE FIRST NUCLEAR REACTOR AND THE FIRST ATOMIC BOMB, HER WORK ON TREE RINCS OPENED THE DOOR TO THE STUDY OF CLIMATE CHANCE,



BIOLOGIST RACHEL CARSON STUDIED THE HARMFUL EFFECTS OF PESTICIDES ON BIRDS AND THE ENVIRONMENT. HER BOOK "SILENT SPRING" HELPED TO LAUNCH THE ENVIRONMENTAL MOVEMENT.



PHYSICIST TIKVAH ALPER WORKED ON ALPHA PARTICLES WITH LISE MEITHER LATER SHE BECAME A RADIOBIOLOGIST AND DISCOVERED THAT PRION DISEASES ARE NOT TRANSMITTED BY A VIRUS.



EARLY CELL TYPES.

OTHER DEVICES.





THEO COLBORN WAS A EOOLOGIST
AND ENVIRONMENTAL HEALTH ANALYST. SHE
STUDIED HOW HUMAN-PRODUCED CHEMICALS CAN
CONCENTRATE IN THE FOOD CHAIN AND AFFECT
DEVELOPMENT IN PEOPLE AND OTHER ANIMALS.













APOLLO 11 FLIGHT TO THE MOON.



CROWFOOT HODGKIN WON THE NOBEL PRIZE IN CHEMISTRY FOR THE DEVELOPMENT OF PROTEIN X-RAY CRYSTALLOGRAPHY.



ALTHOUGH SHE NEVER RECEIVED FORMAL TRAINING, MATHEMATICIAN SOPHIE GERMAIN MADE SIGNIFICANT CONTRIBUTIONS TO NUMBER THEORY AND ELASTICITY. SHE ALSO STUDIED PHILOSOPHY AND PSYCHOLOGY.



GENETICIST NETTIE STEVENS
WAS ONE OF THE FIRST SCIENTISTS TO
DESCRIBE X AND Y CHROMOSOMES AND THEIR
ROLE IN SEX DETERMINATION.



MATHEMATICIAN ADA LOVELACE

WAS THE FIRST EVER COMPUTER PROCRAMMER.

SHE WROTE THE FIRST ALGORITHM FOR CHARLES
BABBAGE'S ANALYTICAL ENGINE.

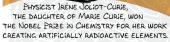


INCE LEHMANN WAS A SEISMOLOGIANT. SHE DISCOVERED THAT THE MOLTEN INSIDE OF THE EARTH HAS A SOLID INNER CORE.



GEOLOGIST AND OCEANOGRAPHIC
CARTOGRAPHER MARIE THARP CREATED
THE FIRST MAP OF THE ENTIRE OCEAN FLOOR,
AND REVEALED THE PRESENCE OF UNDERWATER
MOUNTAINS - THE MID-OCEAN RIDGES.







HOLLYWOOD ACTRESS HEDY LAWARR
CO-INVENTED AN IMPORTANT MILITARY
COMMUNICATIONS TECHNOLOGY, WHICH IS NOW
USED IN WIFI AND BLUETOOTH.



THIS CARD ALLOWS YOU TO
CHOOSE A CHARACTER FROM THE
DISCARD PILE AND ADD IT TO YOUR HAND.



PRESTIGE PLAY THIS CARD TO TAKE TWO SCIENTISTS FROM AN OPPONENT'S LAB

AND ADD THEM TO YOUR HAND, YOUR OPPONENT'S LAB IS DESTROYED AND ITS REMAINING CARDS RETURN TO HIS HAND.



SCIENTISTS FROM AN OPPONENT'S LAB AND ADD THEM TO YOUR HAND, YOUR OPPONENT'S LAB IS DESTROYED AND ITS REMAINING CARDS RETURN TO HIS HAND.



TO FORM A LAB. IF THE LAB IS DESTROYED, THE CLONE CARD IS FREE TO BE USED WITH ANY SCIENTIST.



TO FORM A LAB. IF THE LAB IS DESTROYED, THE CLONE CARD IS FREE TO BE USED WITH ANY SCIENTIST.



IDENTICAL COPY, YOU CAN USE UP TO TWO CLONES TO FORM A LAB. IF THE LAB IS DESTROYED, THE CLONE CARD IS FREE TO BE USED WITH ANY SCIENTIST.



SCIENTIST CARD, THIS CARD BECOMES AN IDENTICAL COPY, YOU CAN USE UP TO TWO CLONES TO FORM A LAB. IF THE LAB 'S DESTROYED, THE CLONE CARD IS FREE TO BE USED WITH ANY SCIENTIST.



AND ADD THEM TO YOUR HAND, YOUR OPPONENT'S LAB IS DESTROYED AND ITS REMAINING CARDS RETURN TO HIS HAND.

HOW TO PLAY

The goal is to collect 4 cards of the same color to form a $^\circ$ lab $^\circ$. The first player who forms 3 labs wins.

G CARDS ARE PLACED FACE-UP IN FRONT OF EACH PLAYER. THE DECK IS PUT FACE-DOWN AT THE CENTER OF THE TABLE AND THE FIRST CARD IS REMOVED AND PLACED FACE-UP TO START THE DISCARD PLE.

At the beginning of a turn, the player chooses either to take a card from the beck or to take the first card of the biscard pile, at the end of the tirn, the current player can only keep 6 cards in their hand, the rest must be discarded.

Some cards have more than one color, and can contribute to a lab of either color.

THE **ENROLLMENT** CARD PERMITS A PLAYER TO TAKE ANY SCIENTIST FROM THE DISCARD PILE. THE **ENROLLMENT** CARD IS THEN PUT UNDER THE DISCARD PILE AND CAN'T BE PICKED UP AFTERWARDS.

THE PRESTIGE CARD PERMITS A PLAYER TO STEAL 2 SCIENTISTS FROM AN OPPONENT'S LAB (THE OPPONENT'S LAB IS DESTROYED AND THE REMAINS RETURN TO THE OPPONENT'S HAND). THE PRESTICE CARD IS THEN PLY UNDER THE DISCARD PILE AND CAN'T BE PICKED UP AFTERWARDS.

THE CLONE CARD ALLOWS A PLAYER TO MAKE AN EXACT COPY OF A SCIENTIST THAT IS ALREADY IN THE PLAYER'S HAND. THE CLONE CARD IS PLACED ALONGSIDE THE COPED SCIENTIST WHEN FORWARD. THE LAB YOU CAN USE UT FO TWO CLONES IN THE SAME LAB. IS THE LAB IS DESTROYED, THE CLONE CARD CAN BE USED ACAIN WITH ANY

IF THERE ARE NO MORE CARDS IN THE DECK AT THE START OF A PLAYER'S TURN, THAT FLAYER LOSES THE CARDS IN THEIR HAND AND IS ELIMINATED FROM THE CAME. THE PLAYER'S CARDS AND LASS ARE SHUPFLED WITH THE DISCARD PILE TO FORM A NEW DECK. THE FIRST CARD OF THE DECK SECOMES THE NEW DISCARD PILE.

ENT & STUBH

CARD COLORS ARE ASSOCIATED WITH SCIENTIFIC FIELDS:

BIOLOGY / MEDICINE
ASTRONOMY & ENGINEERING
ECOLOGY / GEOLOGY
MATHEMATICS & COMPUTER SCIENCE
PSYCHOLOGY / ANTHROPOLOGY
WOMEN IN SPACE (EXPANSION PACK)

WHEN CHOOSING WHICH CARDS TO KEEP IN YOUR HAND, REMEMBER THAT SOME COLORS ARE MORE COMMON THAN OTHERS. FOR INSTANCE, ORANGE AND YELLOW CARDS ARE VERY COMMON, AND PRINC CARDS ARE THE RAREST, KEEP AN EYE ON YOUR OPPONENTS CARDS TOO.

WHEN FORMING A NEW LAB OR STEALING FROM YOUR OPPONENTS, REMEMBER THAT CLONE CARDS ARE THE MOST VALUABLE, FOLLOWED SY TWO-COLOR CARDS, AND THEN SINCLE-CORD CARDS, KEEP IN MIND THAT YOUR OPPONENTS WILL BE MORE TEMPTED TO STEAL YOUR LASS IF THERE ARE MORE VALUABLE CARDS IN THEM, ESPECIALLY IF THERE ARE FEW LABS IN PLAY.

THE BEST WAY TO PREVENT A LAB FROM BEING DESTROYED IS TO KEEP IT IN YOUR HAND AS LONG AS IT DOESN'T FORCE YOU TO DISCARD A VALUABLE CARD.

It can be tempting to use a Prestice card as soon as a lab comes in play, but, unless using it prevents you from discarding a valuable card, it is often more remarding to watt.

CUSTOMIZE THE GAME BY ADDING OR REMOVING SPECIAL CARDS AND ADDING HOUSE RULES.

VISIT WWW.LUANAGAMES.COM TO READ MORE ABOUT WOMEN IN SCIENCE.



RHEUMATOLOGY AND NEUROSCIENCE.
SHE BECAME THE FIRST EUROPEAN WOMAN
TO VISIT THE INTERNATIONAL SPACE STATION.



AEROSPACE ENCINEER
KALPANA CHAWLA WAS A MISSION
SPECIALIST AND PRIMARY ROBOTIC ARM
OPERATOR ON SPACE SHUTTLE COLUMBIA.



PHYSIC:AN MAE JENISON BECAME THE FIRST AFRICAN AMERICAN WOMAN TO TRAVEL IN SPACE. SHE IS ALSO THE FIRST REAL ASTRONAUT TO APPEAR ON STAR TREK.



STEPHANIE WILSON SPENT A
TOTAL OF 43 DAYS IN SPACE DURING 3
SEPARATE MISSIONS. SHE SERVED AS A
ROBOTIC ARM OPERATOR AND FLIGHT ENGINEER.



CARDIOVASCULAR SURCEON
CHIAKI MUKAI BECAME THE FIRST
JAPANESE WOMAN IN SPACE, AND THE
FIRST JAPANESE CITIZEN TO COMPLETE
TWO SPACEFLIGHTS.

JULIE PAYETTE



VALENTINA TERSHKOVER
VALENTINA TERSHKOVA BECAME THE FIRST
WOMAN TO HAVE FLOWN IN SPACE ON JUNE 16, 1963.
SHE TOOK PHOTOGRAPHS WHICH WERE USED TO
IDENTIFY AEROSOL LAYERS IN THE ATMOSPHERE.



PHYSICIST SALLY RIDE

HELPED DEVELOP THE CANADARM

ROBOTIC ARM. SHE COMPLETED TWO SPACEFLICHTS

FOR A TOTAL OF 14 DAYS IN SPACE.

FOR A TOTAL OF 14 DAYS IN SPACE.

CANADARM ROBOTIC ARM.

ENCINEER AND ASTRONAUT

JULIE PAYETTE HAS COMPLETED TWO

SPACEFLICHTS AND SPENT 25 DAYS IN THE

INTERNATIONAL SPACE STATION WHERE SHE

OPERATED THE CANADARM ROBOTIC ARM.







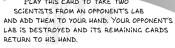
OPPONENT'S PRESTIGE CARDS. WHEN YOU PLAY THIS CARD, DRAW TWO CARDS FROM THE DECK.







AND ADD THEM TO YOUR HAND, YOUR OPPONENT'S LAB IS DESTROYED AND ITS REMAINING CARDS RETURN TO HIS HAND.





LAB IS DESTROYED AND ITS REMAINING CARDS

RETURN TO HIS HAND.



RETURN TO HIS HAND.

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