

Overview

Research from Microsoft has revealed that the number of girls interested in science, technology, engineering and math (STEM), on average, almost doubles when they have a role model to inspire them.

These insights show there is a clear link between STEM role models and an increased passion for science, technology, engineering and math subjects, with more interest in careers in these fields, and greater self-confidence.

The Microsoft **#MakeWhatsNext** game gives youth the chance to use their imagination and learn about STEM role models across Europe, the Middle East and Africa whose contributions to the world can still be felt today.

The game is designed to be used at home or in classrooms as teaching material.

Let's play the game!

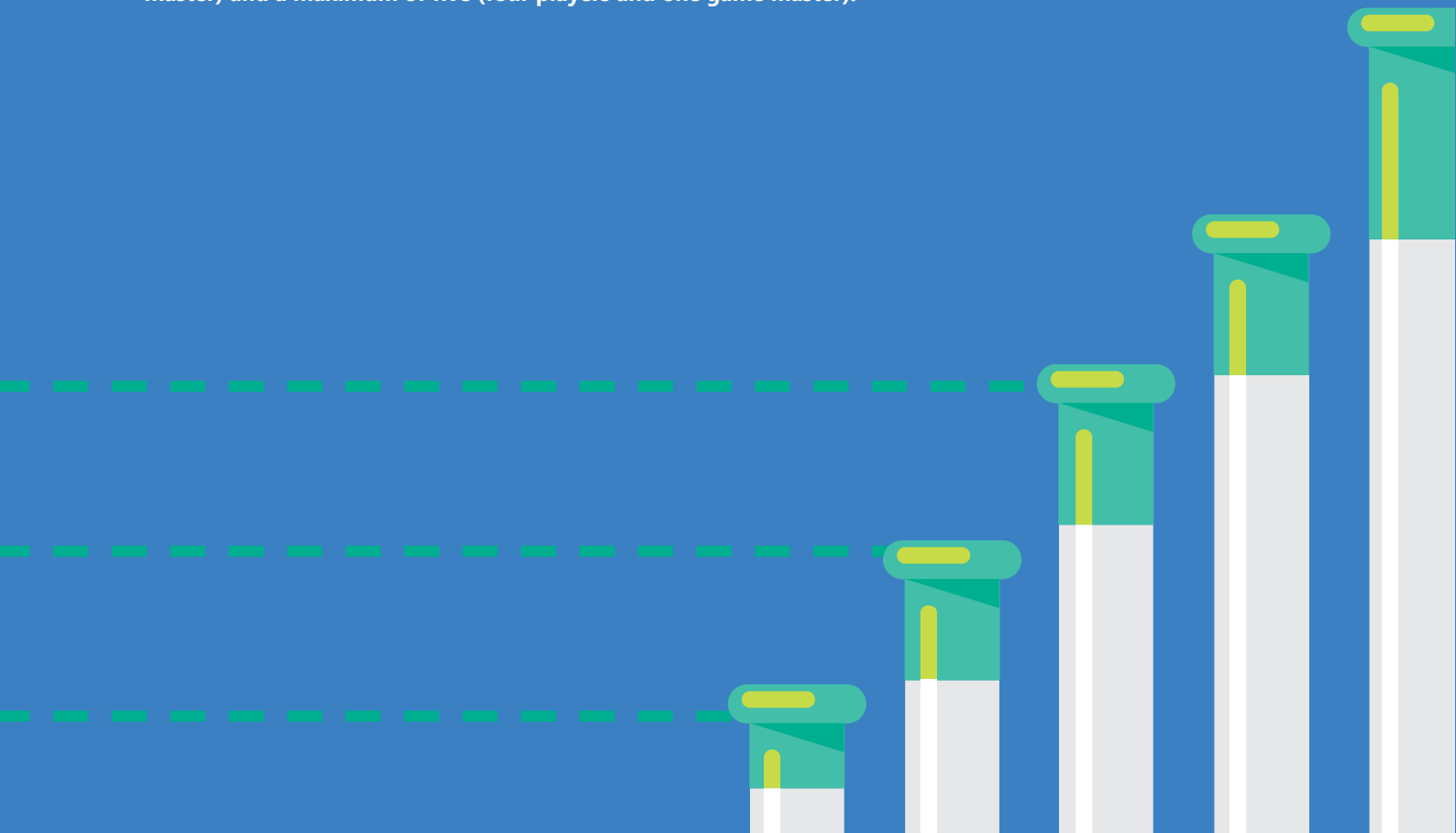


What you need:

- 1 Download and print the [Microsoft's #MakeWhatsNext Heads Up game template](#). The template will include two A4 pages with a set of 16 cards with STEM role models profiles & clues.
- 2 A pair of scissors.

Participants:

This game can be played with a minimum of two people (one player and one game master) and a maximum of five (four players and one game master).



How to play:



- 1** Before the game begins, the game master prepares the materials by cutting out the individuals cards and creating two separate piles:
 - 1 x pile of cards containing the profiles and names of the STEM role models; and
 - 1 x pile of cards containing the game clues.
- 2** The game master shuffles the cards with the STEM role models and places the pile face down – with the white blank side facing up.
- 3** The game master holds the pile of clues, which will be used throughout the game.
- 4** Now the game begins! Each player picks up a card, without looking at the name on the other side, and holds the card up to their forehead.
- 5** From here, everyone knows the identity of each other's STEM role model - except their own!
- 6** The game master then chooses a player to go first. When the player is ready, the game master times how long it takes the player to ask a question or guess their STEM role model – players only gets 10 seconds each round!
- 7** To find out the STEM role model's name on their card, players can ask questions such as:
 - *"Am I a scientist?" or "Am I an engineer?"*
 - *"Where I was born? Europe? Africa?"*
 - *"Am I alive?"*
 - *"Did I win a Nobel Prize?"*
- 8** If a player cannot think of a question, or is struggling to guess correctly, they can ask the game master for a clue relating to their STEM role model. Each player is allowed a maximum of three clues.
- 9** The first player to correctly guess the identity of their STEM role model wins the game!
- 10** At the end of the game, all the remaining players bring the card down from their forehead to reveal their respective STEM role model.
- 11** As a group, each player reads the short biography (see below) about the STEM role model; learning more about their lives and contributions to the world.



Bertha Benz



(Germany, 1849 – 1944) was an automotive pioneer. In the early morning hours of August 5, 1888, Bertha and her two sons rolled the first patented horseless carriage onto the drive ringing their home in Mannheim, Germany. Unbeknownst to her husband, Karl Benz, the automobile inventor, Bertha was taking his three-wheeled contraption on a trip to her mother's home — a 60-mile journey that would later become known as the automobile's very first road trip. In doing so, she brought the Benz Patent-Motorwagen worldwide attention which became a success afterwards. Karl may have been a gifted engineer, but some say he lacked a complete vision for his vehicle, but Bertha had ideas of her own. Bertha's road trip made headlines around the world, setting the stage for a new era of motorized transportation and the future success of the Mercedes Benz motor company. She also worked with a cobbler to design and make the world's first pair of brake pads when the wooden brakes in her automobile failed during one of her journeys.

Annie Russell Maunder

(Ireland, 1868 – 1947) was a pioneering Irish astronomer and mathematician. She studied at Cambridge University in Girton College, one of the university's new colleges for women, where she became the top mathematician of her year. Later she went on to work at the Royal Observatory in Greenwich, the UK as one of the few female computers. Annie spent five years calculating and observing at Greenwich. A keen photographer, she was one of the first astronomers to capture a picture of the Sun's atmosphere. She and her husband, Edward Walter Maunder brought astronomy to the general public with the book, *The Heavens and their Story*, featuring Annie's photographs of the sun and the Milky Way.



Ada Lovelace



(London, 1815 – 1852) was an English mathematician and writer. She was the daughter of poet Lord Byron and like her father, Ada had a big imagination and also a talent for mathematics. She grew up in a noble household in England, where she dedicated herself to studying. Her work with the famous inventor, Charles Babbage, on a very early kind of computer that made her the world's first computer programmer.

Valentina Tereshkova

(Russia, 1937) is a retired Russian cosmonaut and engineer. She was an amateur skydiver and her skills at parachuting caught the attention of the eyes of many. She then became the first woman to travel into space and spent almost three days in space. During this single flight, she added up more flight time than all American astronauts who had flown before that date and orbited the earth 48 times.



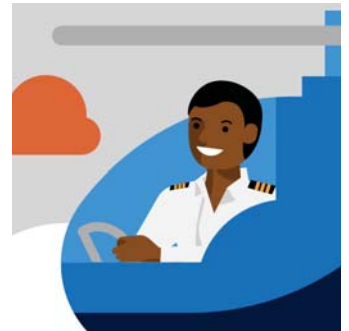
Maria Telkes



(Hungary, 1900 – 1995) was a Hungarian-American scientist and inventor who worked on solar energy technologies. She was interested in science at an early age in Hungary and moved to the US to achieve a PhD in physical chemistry. She worked in solar research for 14 years at the Massachusetts Institute of Technology (MIT). Maria is known for designing the Dover Sun House, the first house heated entirely by solar power. Some of her other inventions include the first thermoelectric power generator in 1947 and the first thermoelectric refrigerator in 1953. Maria was honored by the US National Academy of Science Building Research Advisory Board for her work towards solar-heated building technology.

Asnath Mahapa

(South Africa, 1979) is an African pilot. She was fascinated by planes as a teenager and she enrolled in a course in electrical engineering at the University of Cape Town. Her hard work and determination paid off and in 1998 she broke barriers by taking to the skies as the first female African pilot in South Africa. She has continued in the aviation industry for more than 10 years and is the first African woman to acquire an Airline Transport Pilot License in South Africa. She has flown for Red Cross and World Food Programme in Central and West Africa. In 2012 she opened the African College of Aviation to train and help other African women take off.



Zaha Hadid



Was an Iraqi-British architect who from a young age was determined to achieve what she dreamed of. She studied mathematics at the American University of Beirut before moving, in 1972, to London to study at the Architectural Association School of Architecture where she studied with star architect Rem Koolhaas. Zaha was described as the "Queen of the curve" for her bold and fluid designs including the London's Olympic aquatics center. She was the first woman to receive the Pritzker Architecture Prize in 2004 for her pioneering architecture and vision.

Malala Yousafzai

(Pakistan, 1997). Raised in a changing Pakistan Malala was taught to stand up for her beliefs. Malala loved school. When extremists took control of her region and declared that girls were forbidden from going to school, Malala refused to sacrifice her education. And on 9 October 2012, she was shot on her way home from school. After months of surgeries and rehabilitation she established the Malala Fund, a charity dedicated to giving every girl an opportunity to achieve a future she chooses. Today Malala is a global symbol of peaceful protest and the youngest ever person to be awarded the Nobel Peace Prize. Malala is now studying Philosophy, Politics and Economics at the University of Oxford.

