

STEAM PATHWAYS AT CREA CHILDREN'S ACADEMY

PREPARING STUDENTS FOR CAREER ADVANCEMENT

- ❑ **STEM** stands for Science, Technology, Engineering and Mathematics. – an integral approach to education in the 21st century.
- ❑ CREA is the first school in Tiruchirappalli to introduce **STEM** education in 2016.
- ❑ But many educators realize that **ARTS** should be given equal importance, as the knowledge of philosophical thinking, history and performing arts can teach us new dimensions through which the complexity of current world can be grasped and thus prepare students to meaningfully participate as contributing citizens.
- ❑ The **STEAM** (Science, Technology, Engineering, Arts and Mathematics) programme is being introduced in a phased manner and details are spelt out in the next slide.

The purpose of STEAM Career Pathways is to:

- ❑ Prepare students for jobs requiring academic preparation and credentialing.
- ❑ Breakdown silos between K12 & higher education, between CTE (Career Technical Education) & academic sectors.
- ❑ Deeply integrate industry-based partnerships.

Preparing individuals to convert passion into profession

- Hence CREA will initiate programmes, starting from 2017-18 academic year to address these needs.
- The following section details the action plan.
- Every student in every class would be exposed to this type of learning.
- One half a day session per week would be dedicated to STEAM PATHWAYS learning.

SCIENCE:

- ❑ Strengthening of science practical and multimedia presentations to teach science concepts. Science fairs.
- ❑ Physics, which studies mass, time, space, and energy at the most fundamental level, is recognized as the fundamental science where in depth knowledge becomes a prerequisite for a strong base in career development. Hence a very advanced laboratory is planned to be set up during the next three years.
- ❑ Career guidance on the expanding fields in Physics, Chemistry and Biology



TECHNOLOGY:

- ❑ 137 million workers from five Southeast Asian countries are in danger of being replaced by automated systems in the next 20 years. The International Labour Organisation says that laborers working in the manufacturing industry, the garment industry most of all, are at the highest risk.

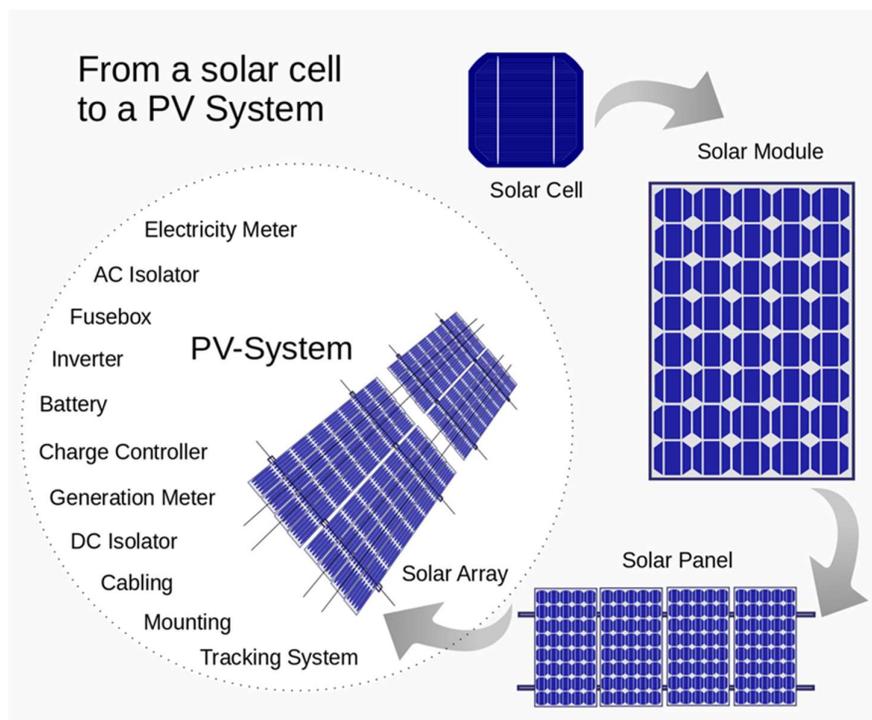


- ❑ CREA has introduced, in 2016, teaching software languages in partnership with **Bharathidasan University**, Tiruchirapalli under their **"School - University - Industry - tie up - Scheme" (SUITS)** programme.
- ❑ Embedded systems, Microcomputers and Robotics would be the technology sought after.
- ❑ In order to make the students future ready teaching programming skills both at high level as well as at the basic level would be an additional skill.
- ❑ From the academic year 2017-18, a microcomputer lab is being set up to give students hands on experience in developing applications using **"Arduino microcomputers"**.



ENGINEERING:

- ❑ We already have external resource persons to impart knowledge in the area of latest technologies in Information technology, Current trends in various engineering fields such as architecture, rocket technology, turbines and Renewable energy sector.
- ❑ Special talks on “Sustainable Technology” through utilization of low energy and Biomimicry will be organized.



- ❑ Special lab for Solar photovoltaics would be launched in the medium term. (2019-20).
- ❑ A search is on to tie up with an European university to offer a short term certificate course and a summer course in Photovoltaic Technology.

ARTS:

- ❑ Socrates said “I cannot teach anybody anything but I can make them think”. This approach is very vital today given the rote learning method being totally unsuitable for a career oriented learning. Philosophy, at fundamental level to develop logical thinking, would be taught from class VIII.
- ❑ Drama, elocution, debate would be conducted on a regular basis.
- ❑ Novel method of teaching history to encourage learning from our past to develop the students moral, ethical behavior.

MATHEMATICS:

- ❑ Concept based multimedia aids.
- ❑ The programme would be implemented on top priority and launched in 2017-18.