

## Pune Knowledge Cluster (PKC) & Indian Institute of Technology - Madras (IIT-M), under the ChemAmaze Program

*Present*

### Online Teacher Training Level-1 Workshop on 'Gamification'

*(Supported by BASF)*

Organized By	Pune Knowledge Cluster (PKC) in collaboration with IIT - Madras (Supported by BASF)
Date	20th September 2024
Location	Online workshop on Zoom
Duration	1.5-hour workshop
Description	National Educational Policy 2020 introduced games as a teaching method or pedagogy. In this workshop, the participating teachers learnt about game-based teaching and its importance. Participants played games in science/chemistry and got a glimpse of how to integrate games with regular teaching in classes.
For whom	School Teachers teaching Science and Mathematics from Classes 6 – 8 from Gwalior Glory High School, Gwalior, MP
Number of participants	18
Trainers	Mr. Kartic Vaidyanathan (Consultant PKC, IIT- Madras) and Ms Surabhi Garg (Research Assistant PKC, IIT-Madras)
Registration Fees	The registration was free.

## **The details of the sessions covered during the workshop**

Pune Knowledge Cluster (PKC) organized an online Teacher Training Workshop on 'Gamification' on 20th September 2024. This workshop was conducted under the 'ChemAmaze' project, an initiative of BASF, implemented by PKC and IIT-Madras and enabled by the Office of PSA. The workshop aimed to help teachers learn games as a teaching method or pedagogy, per the National Educational Policy 2020.

The workshop was held for 18 science teachers from Gwalior Glory High School, Gwalior. The workshop kicked off with an introduction and welcome by Sonalika Purkayastha (Assistant Project Manager, PKC), followed by the introduction of the trainers for the workshop - Kartic Vaidyanathan (Consultant PKC, IIT- Madras) and Surbhi Garg (Research Assistant PKC, IIT-Madras). The workshop introduced teachers to game-based learning strategies that they can integrate with their teaching methodology. The trainers collated a variety of games, both digital and paper/printable, and demonstrated how each game can be used in the classroom.

The participating teachers learned about game-based teaching and its importance. They played various kinds of games in science/chemistry and got a glimpse of how to integrate games with regular teaching in classes. The trainers concluded the workshop by taking input from the teachers about topics they wished could be gamified for their classrooms, and their previous experiences using game-based activities. The 'ChemAmaze' team plans to incorporate this feedback in future games made under the project.

## Summary of the feedback from the participants

During the workshop, we also asked participants to give us their opinion about this workshop, below are the snippets about their feedback for the workshop.

Excellent way of making classroom interesting and interactive.

**Aditi Bindal**

Very nice and very interesting workshop

**Swati Bhatnagar**

It was a wonderful session and informative also. Thank you so much team

**Taposhi Nath**

Merged way of assessing the knowledge of students was amazing.

**Aditi Bindal**

Very interesting, creative and innovative way to explain the concepts.

**Manju Jadon**

Through the different activities, we can make study interesting.

**Shilpi Chaturvedi**

Quiz, unscramble and fill ups were all merged together beautifully.

**Aditi Bindal**

## About the Trainers



Kartic Vaidyanathan  
(Consultant PKC, IIT- Madras)

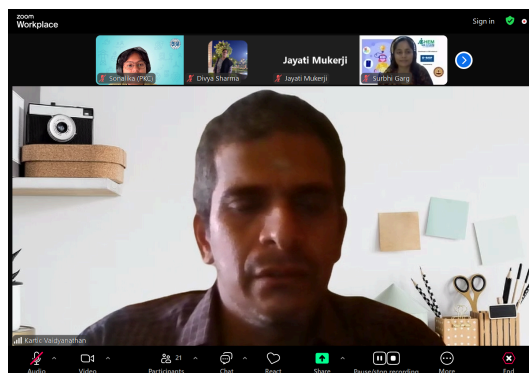
Kartic Vaidyanathan is a guest faculty at IIT Madras and a gamification consultant who works with educational institutions and corporations to make learning enjoyable and interactive through games. He has been teaching a course at IIT Madras called “Let Us Play to Learn” to help students build games for science and engineering subjects. Over the last several years, he has worked on games with both young and old learners. The outcome in almost all cases has been improved classroom interactivity and learner engagement. He is currently a consultant with the PKC as a part of the BASF Chemistry gamification project and helps in building games and doing teachers training in game-based learning pedagogy.



Surbhi Garg  
(Consultant PKC, IIT- Madras)

Surbhi Garg is a Research Assistant in PKC and works on developing games for ChemAmaze project, funded by BASF. Earlier she has been working in building educational games for interactive learning for schools and colleges for various STEM related fields. Also she play role as a trainer and teaching assistant for LetsPlayToLearn courses in IIT Madras. She has also worked in Biocon as a Senior Scientist.

# Photo Gallery



**Chemical changes**

1. During a \_\_\_\_\_ change the chemical composition of the original matter changes and new substances having different properties and different chemical composition are formed.

2. A chemical \_\_\_\_\_ can be written for a chemical change, if the exact change in chemical composition is known.

3. Citric acid + Sodium bicarbonate → Carbon \_\_\_\_\_ + Sodium citrate.

4. During \_\_\_\_\_ (a natural chemical process) glucose in the cells reacts with oxygen in the inhaled air to form carbon dioxide and water.

5. Carbon dioxide and Water converts to Glucose and Oxygen in the presence of sunlight in green plants. This is also a natural chemical process called \_\_\_\_\_.

6. Combination of \_\_\_\_\_ is a man made chemical change where carbon combines with oxygen in air and the product carbon dioxide is formed.

7. Hard water, which contains dissolved chloride and \_\_\_\_\_ salts of calcium and magnesium, does not form lather with soap and tastes bitterish.

8. To soften hard water, washing soda (sodium \_\_\_\_\_) is used causing a chemical reaction that forms insoluble salts of calcium and magnesium, which are out of the water, resulting in softening.

**Scrambled word**

HECIMALC
NOTIQUE
PIRETSRAON
YUPHOTOSHOES
ELUPS
UTELFAS
ANATERBOC

**Participants (24)**

- Palak Singh (Co-host, me)
- Sonalika (PKC) (host)
- Kartik Vaidyanathan... (Co-host)
- Sonalika Purkayastha... (Co-host)
- Surbhi Gang (Co-host)
- Jayati Mukerji
- Ms.Prafull Nigam
- Aditi Bindal
- Ankur
- Bindha Kaul
- Chemistry academy
- Chitra Bhatnagar

**Heat transfer and thermal equilibrium**

Clues:

Across

1. If you touch a hot cup of coffee, heat will flow from the \_\_\_\_\_ to your hand.

3. Heat always flows from an object at \_\_\_\_\_ temperature to one at lower temperature.

4. When two objects no longer exchange heat energy, they are in thermal \_\_\_\_\_.

5. The ability of an object to transfer heat is called thermal \_\_\_\_\_.

6. In thermal equilibrium, two objects have the same \_\_\_\_\_.

Down

1. Heat cannot naturally flow from a \_\_\_\_\_ object to a warmer one.

**Participants (24)**

- Palak Singh (Co-host, me)
- Sonalika (PKC) (host)
- Kartik Vaidyanathan... (Co-host)
- Sonalika Purkayastha... (Co-host)
- Surbhi Gang (Co-host)
- Jayati Mukerji
- Ms.Prafull Nigam
- Aditi Bindal
- Ankur
- Bindha Kaul
- Chemistry academy
- Chitra Bhatnagar

**Participants (24)**

- Manju Jadon
- Jayati Mukerji
- Ms.Prafull Nigam
- Neha Sharma
- Aditi Bindal
- Swati Bhatnagar
- Shilpi Chaturvedi
- Navneeta Tomar
- Chitra Bhatnagar
- Taposhi Nath
- Bindha Kaul

### About the organizers



**The Pune Knowledge Cluster (PKC)** has been established by the Office of the Principal Scientific Adviser to the Government of India. The aim is to bring together academia, R&D institutions and the industry of Pune and its surrounding areas, to address the challenging problems of the region through innovative means, using scientific knowledge and engaging highly skilled human resources. Furthermore, PKC aims to foster capacity building and promote skills development and entrepreneurship among the students and professionals of the city. All relevant organizations and experts will be partners and consulted to identify sustainable solutions to the problems of the city and improve its liveability and prosperity.

While the PKC is administered by the Inter-University Centre for Astronomy and Astrophysics (IUCAA), it is a project of and for the whole city. In the initial phase, PKC would focus on air, water, health, and sustainable mobility.

For more information, visit: <https://www.pkc.org.in/>

### Partner organization



**Indian Institute of Technology, Madras (IIT-M)**

### Funding Partner



**BASF India CSR**

## **Annexure: List of Participants**

<b>S.No.</b>	<b>Name</b>	<b>Gender</b>
1	ADITI BINDAL	Female
2	ANKUR MEHTA	Male
3	ASHA PACHAURI	Female
4	CHITRA BHATNAGAR	Female
5	DIVYA SHARMA	Female
6	JAYA SHARMA	Female
7	JAYATI MUKERJI	Female
8	MANJU JADON	Female
9	NAVNEETA TOMAR	Female
10	NEHA SHARMA	Female
11	PRAFULL NIGAM	Male
12	RICHA GUPTA	Female
13	SHILPI CHATURVEDI	Female
14	SWATI BHATNAGAR	Female
15	TAPOSHI NATH	Female
16	VANDANA SIKARWAR	Female
17	JUHI DIXIT	Female
18	VANDANA MATHUR	Female