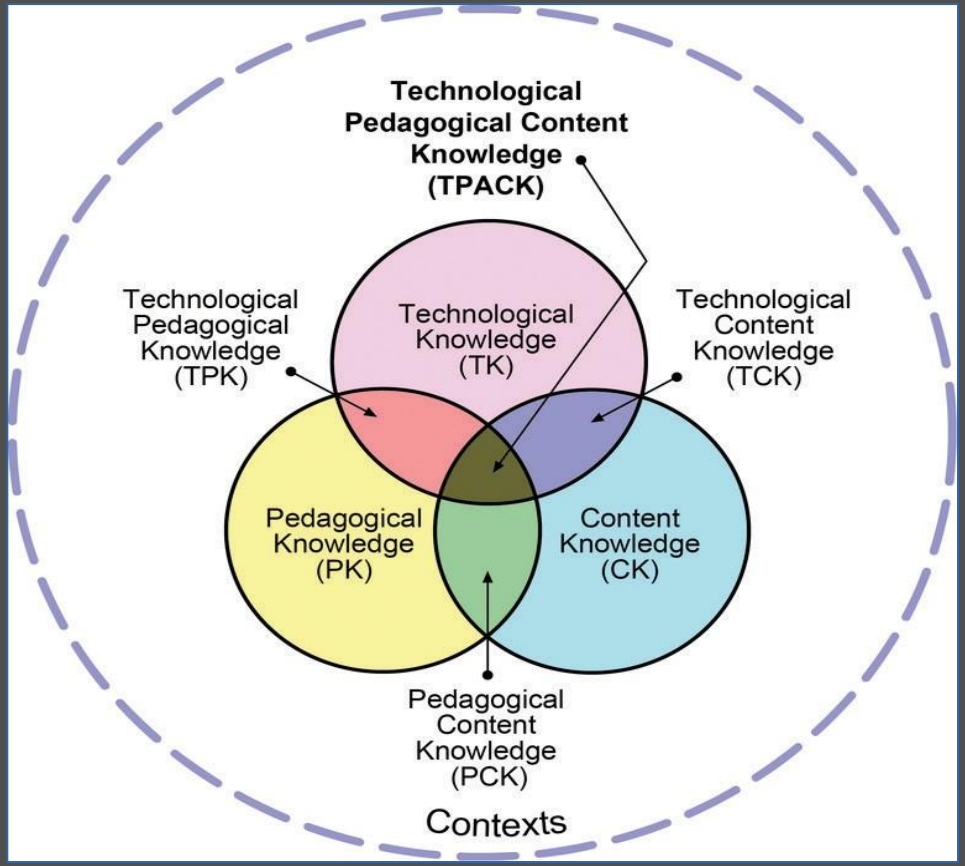
Exploring ICT Resources for Learning of Science: Development & Demonstration

Curricular Expectations for Science education?

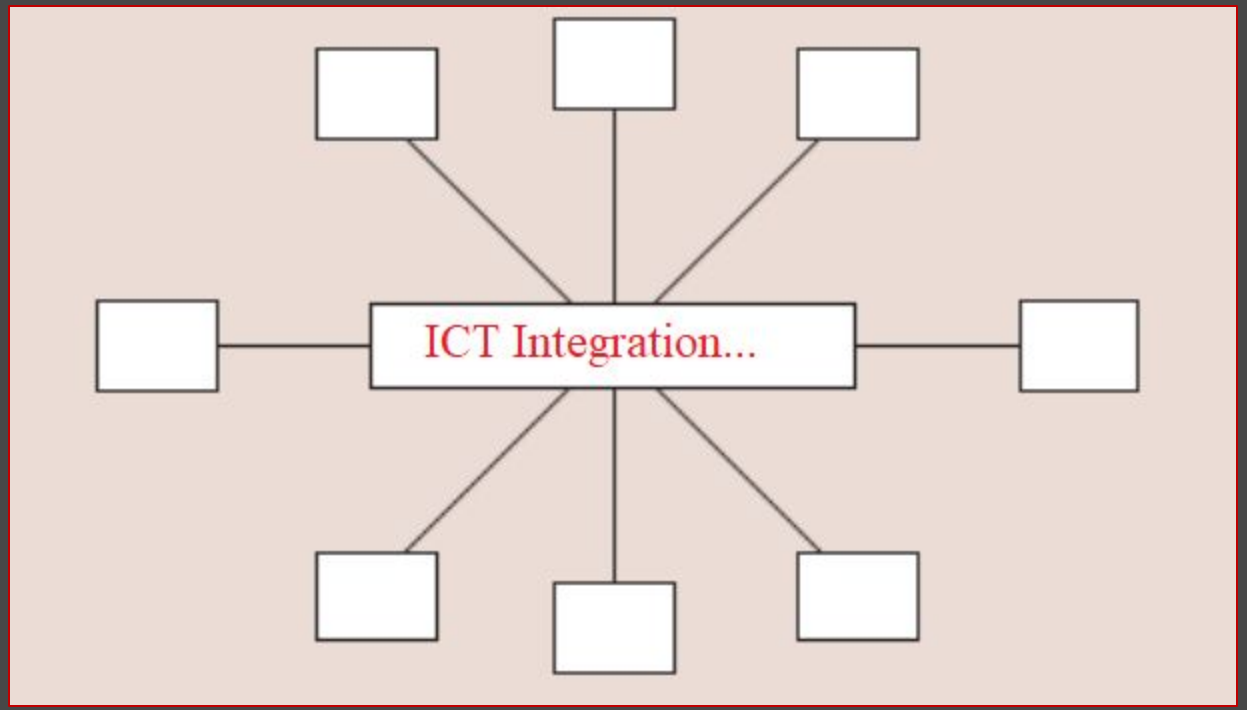
- Be **engaged** in **working with hands** to design simple experiments.
- Intended to develop
  - ✔ **scientific temper and scientific thinking**
  - ✔ **process skills;** observation, posing question, searching various resources of learning, planning investigations, hypothesis formulation and testing, collecting, analyzing and interpreting data, critically thinking, reflecting on their own thinking
  - ✔ Increase **student participation, engagement, retention**

How to Integrate ICT in Teaching-learning?



Understanding the concept of ICT Integration?

Share your ideas in the chat box on ‘ICT Integration…



Let us present your responses creating a mind map using free plane

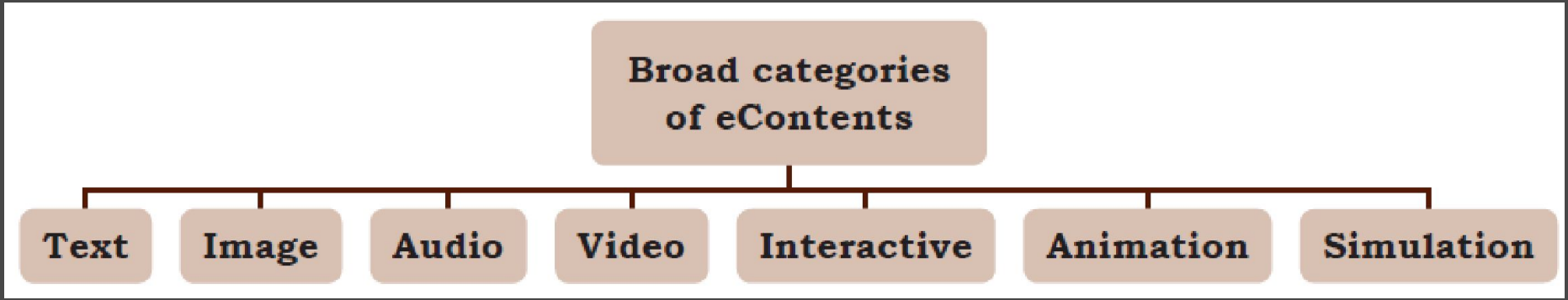
Mind Map

- A graphical way to represent ideas and concepts
- Visual thinking tool that helps structuring information, better analyze, comprehend, synthesize, recall and generate new ideas
- Mind mapping Free and Open Educational software: Free Mind and Free Plane (windows/ mac/ ubuntu)
- Android app: Mindly and SimplyMind Lite

ICT; Technology/ Tools/ e Content

Criteria For Media Selection and Integration

- Availability
- Accessibility
- Reliability and Validity
- Economy/Costing



Where to get e-Content?

Resources???

Open Educational Resources; Interactive simulations

PhET Interactive Simulations: Open educational resource (OER) project for provide the free interactive simulations

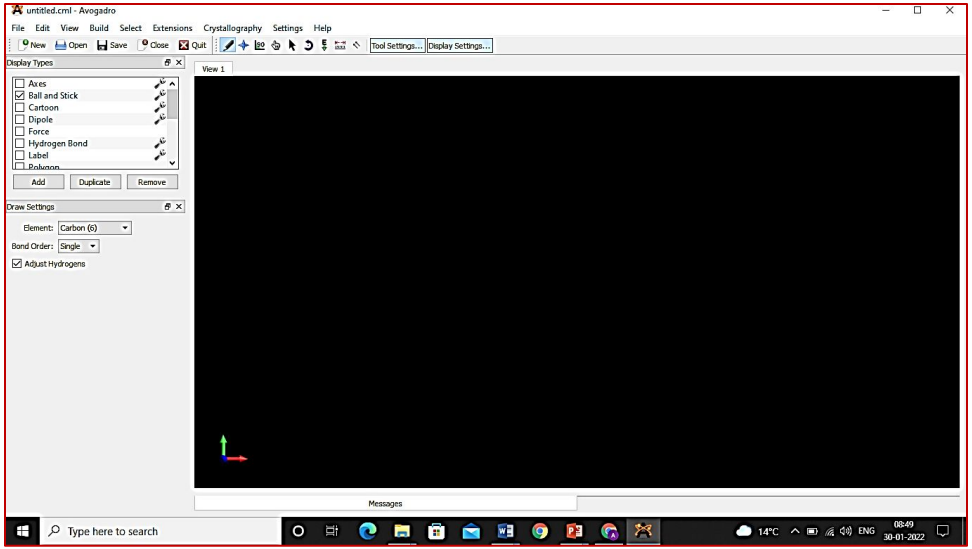
- To improve the ways of science learning.
- To advance science and math literacy and education worldwide through free interactive simulations
- https://phet.colorado.edu/
- Free science and math simulations for teaching STEM topics, including physics, chemistry, biology, and math, from University of Colorado Boulder.

Online Labs (OLabs) for School Lab Experiments – Interactive Simulations

- Digital content of school education is mapped
- Provides the opportunity to perform, record and learn experiments - anywhere, anytime, and individualized practice in all areas of experimentation
- https://www.olabs.edu.in/

Avogadro

...Molecule Editor Software



- Free and Open Source software
- Construct, edit and view molecules in 3D
- 3D Molecular Editor and Visualization tool; Huge fragment library to load inbuilt structures
- Freely downloaded on Mac, Windows, and Linux OS
- Downloaded from http://avogadro.cc

Stellarium

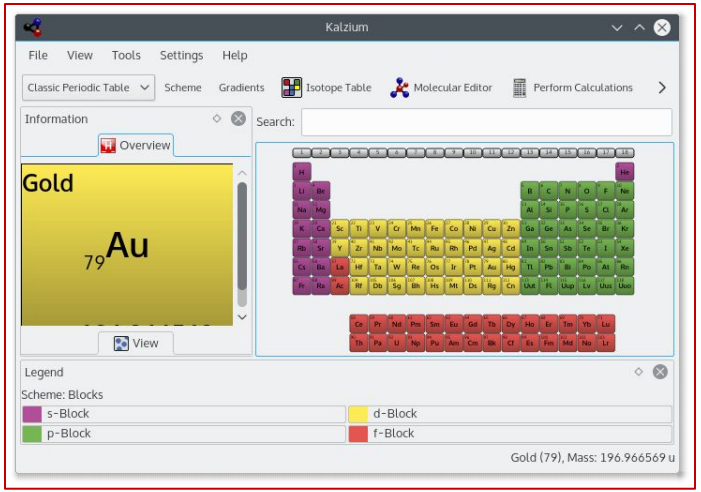
...Astronomy Software

- Free open source planetarium ,
- shows a realistic sky in 3D, just like what you see with the naked eye, binoculars or a telescope.
- Available for Linux, Windows, and macOS. Presentation

Learning Periodic Properties of Elements

Kalzium

- ✔ Application software for exploration of elements and properties, their classification
- ✔ Based on the Periodic Table of Elements
- ✔ OER downloaded freely in Ubuntu



RSC Periodic table:

- ✔ Interactive periodic table
- ✔ features history, alchemy, podcasts, videos, and data trends across the periodic table.
- ✔ Detailed Elements information
- ✔ https://www.rsc.org/periodic-table/#

Thanks for your attention

for any queries...

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