

Problem Based Learning: Exploring the TESDCP System

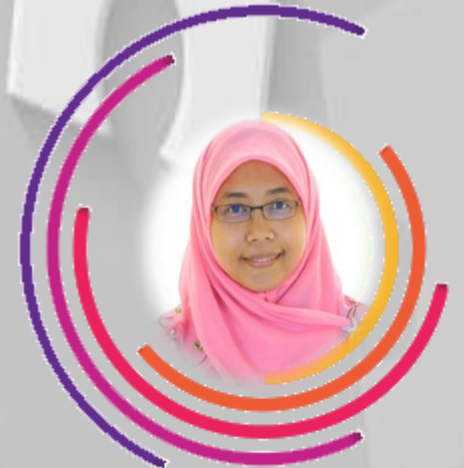
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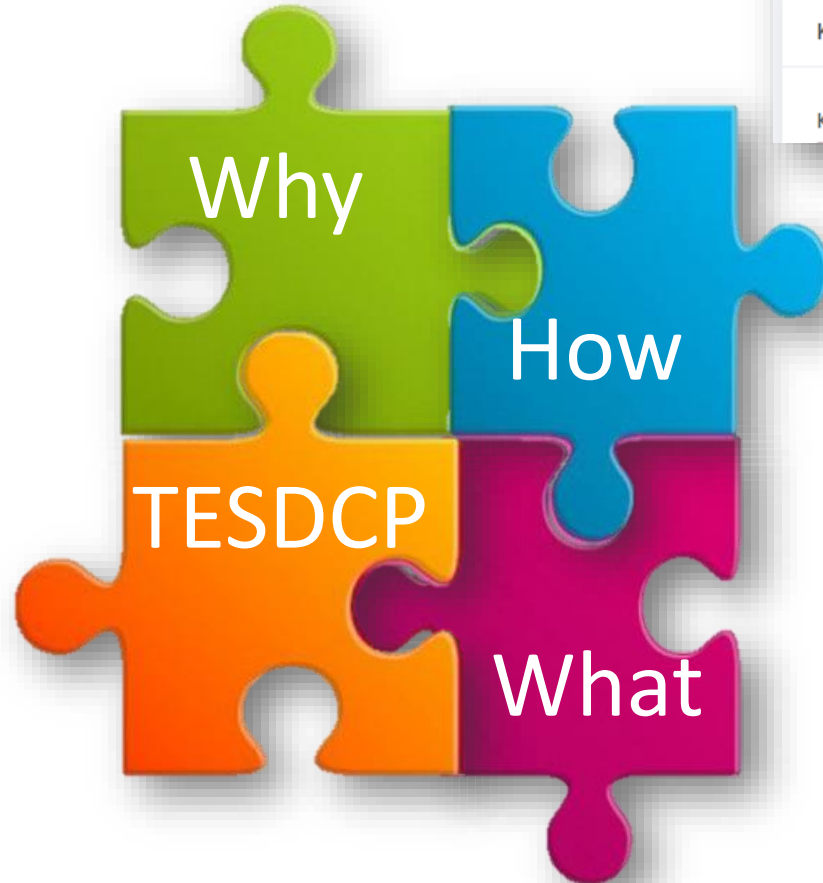
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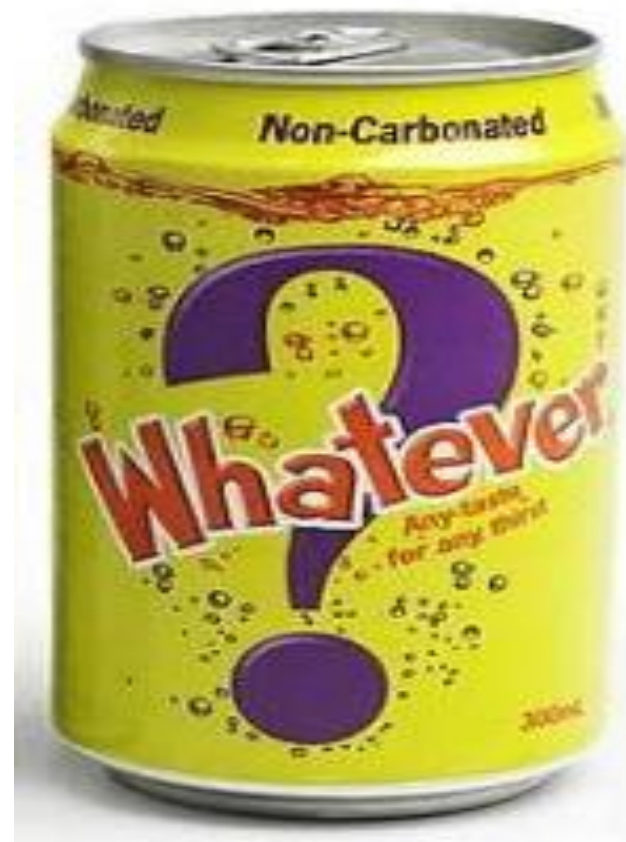
Takeaway...



Tahun Penilaian	Pengesahan PPP/PPK	Tahun Penilaian: 2021	CORRIENNA
Pengajaran			Skala Markah
KUANTITI (5%)			Markah Komponen 5%
KUANTITI PENGAJARAN			5% 5%



Are carbonated soft drinks better than noncarbonated soft drinks?



Problem Based Learning (PBL)

- critical thinking skills
- problem-solving abilities
- communication skills
- group activities
- explore
- evaluation
- life-long learning

The National Education Philosophy

"Education in Malaysia is an on-going efforts towards further developing the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonic, based on a firm belief in and devotion to God. Such an effort is designed to produce Malaysian citizens who are knowledgeable and competent, who possess high moral standards and who are responsible and capable of achieving high level of personal well-being as well as being able to contribute to the harmony and betterment of the family, the society and the nation at large."

Problem based learning

- It is a student-centered teaching method that allows students to solve open-ended real-world problems.
- Teachers provide limited guidance and are often referred to as facilitators

Problem based learning implementation

- Teaching and learning
- Semester
- Discussion
- Assessment
- Real-world problem

Characteristics of good PBL problems

- motivate students to seek out a deeper understanding of concepts
- require students to make reasoned decisions and to defend them
- incorporate the content objectives in such a way as to connect it to previous courses/knowledge
- level of complexity
- open-ended

(Duch, Groh, and Allen, 2001)

Variety of sources

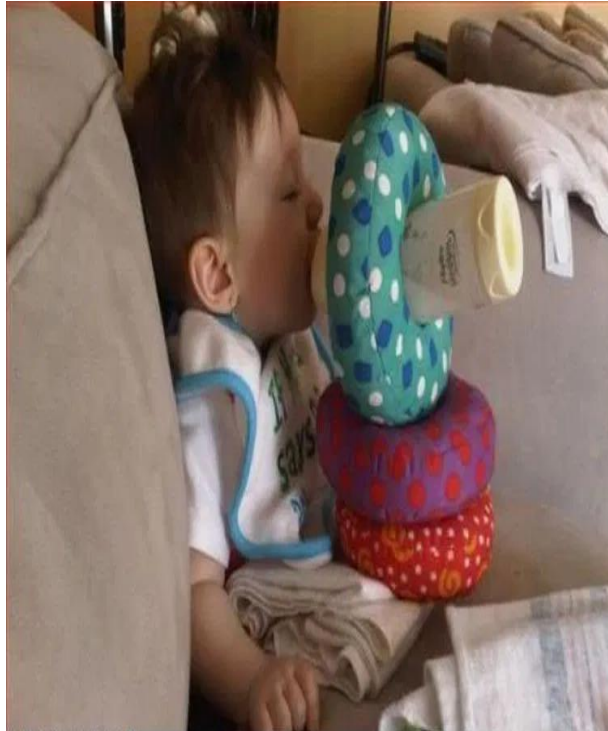
- Newspapers
- Magazines
- Journals
- Books
- Textbooks
- Movies
- Computer-based programs

Solving problems through computational thinking

Why CT...



CT is everywhere



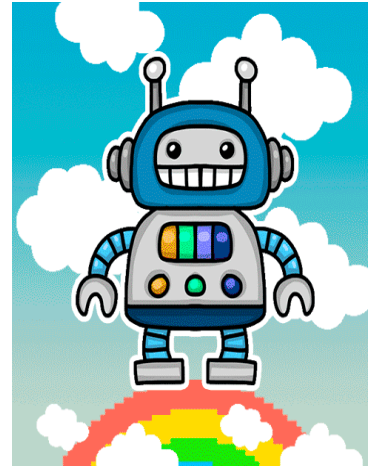
Source:thereifixit.com





What ...

Thinking like a robot?



Programming like an expert?



NO

Problem solving skill

Versatile skill – logical thinking
and critical thinking



CT ...

- Looking at a problem
- Solving it systematically
- solution
- Computer and human can understand
- Highest order of problem solving



CT elements

Decompose

Abstraction

Logical Reasoning

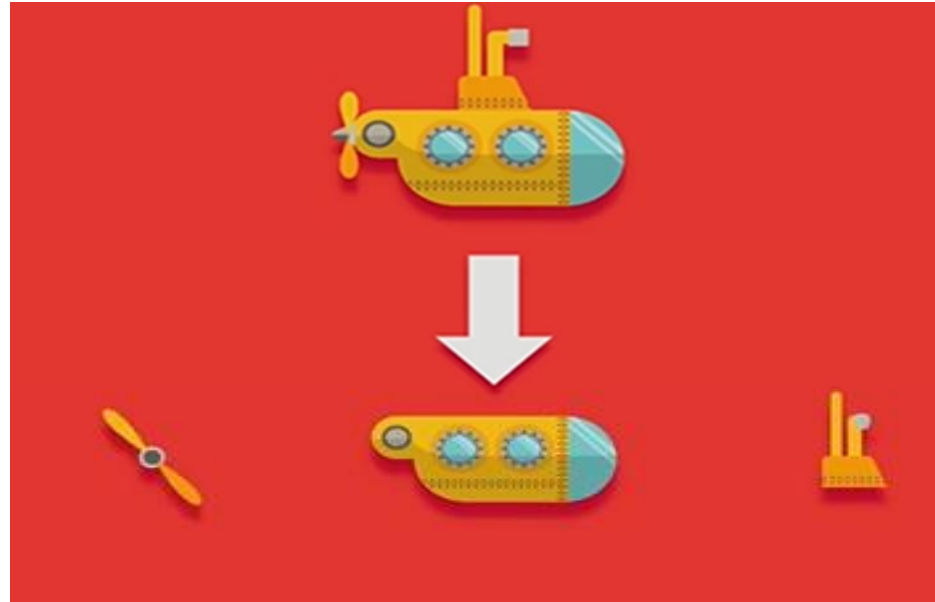
Pattern

Algorithm

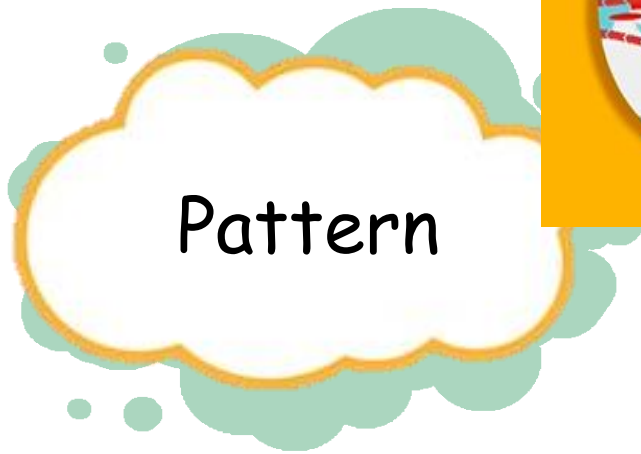
Evaluation



CT elements

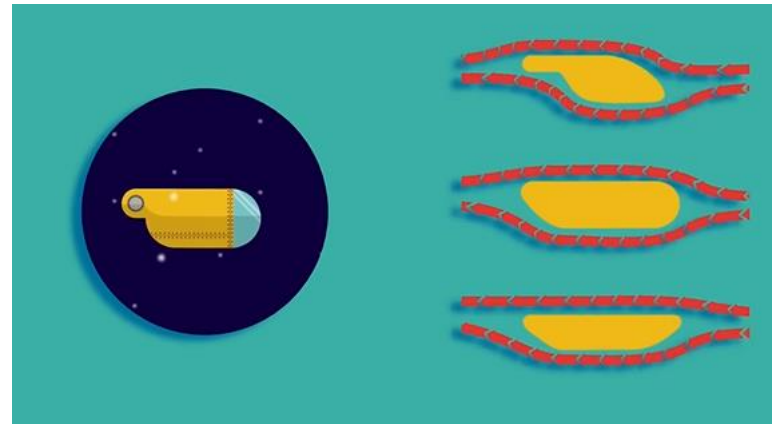
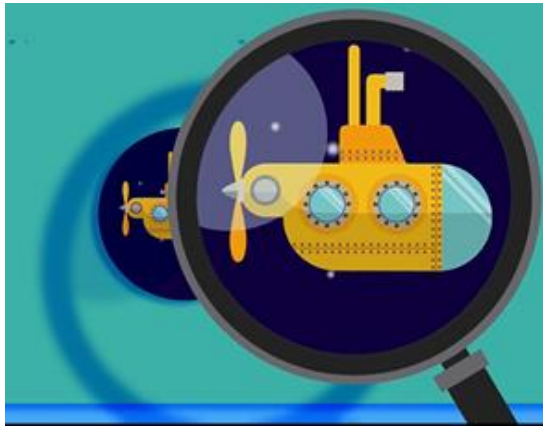


CT elements

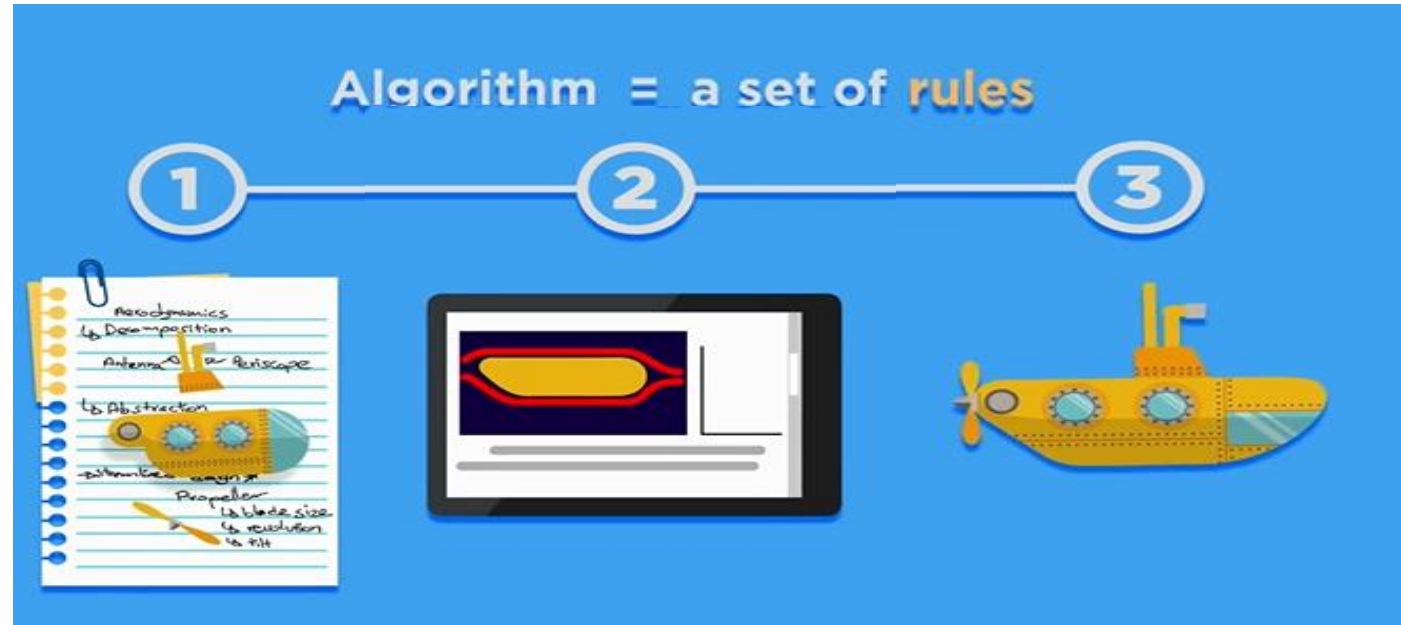


CT elements

Abstraction



CT elements



Algorithm



CT elements



Logical Reasoning

It helps develop your ability to reason logically and to make deductions from the information you have

Make predictions

Debug – looking carefully at the code and using logical reasoning to explain what the program is actually doing are good starting points



CT elements

It is the process that allows us to make sure our solution does the job it has been designed to do and to think about how it could be improved.

Once written, an algorithm should be checked to make sure it:

Is easily understood – is it fully decomposed?

Is complete – does it solve every aspect of the problem?

Is efficient – does it solve the problem, making best use of the available resources (eg as quickly as possible / using least space)?

Meets any design criteria we have been given

Failure to evaluate can make it difficult to write a program.



Evaluation



Unplugged PBL-CT4PS



Plugged-in PBL-CT4PS



Scratchtopia Challenge #1: Messy Room

(A) Scenario:

1. Oyen is facing a problem to clean up his messy room.



- (i) Click on [Scratchtopia Challenge #1](#).

(B) Finding the solution:



Some other examples of PBL

Broad problem posing

Solving problems through inquiry

Divergent thinking problems

Product development

Real-life problem solving

Role playing a problem

Solving real-life mathematical problems

Multidisciplinary problem solving

Authentic learning scenarios

Solving hypothetical problems

Solving social problems

Escape rooms

Solving a riddle

Situated learning

Turning exams into challenges



Conclusion

Regardless of the method used, the heart of the method remains the same: the real-world problem



Thank You

