

Students' Scaffolding Series

PROBLEM SOLVING

Pre-Session Activity

Let's watch a very short video
on 3 empty glasses and 3 full!

https://www.youtube.com/watch?v=Kg61rHonI_w



Discussion: What did you deduce from the video?

- *What was the problem to be solved?-----
-----.*
- *Did it get solved? Y/N*
- *Was the solution simple or complex? S/C*

Learning Outcomes

- Stating a 'problem'
- Steps involved in solving a problem
- Barriers in problem-solving

Icebreaking Activity



Once there was a crow. He was very thirsty. He flew here and there but it didn't find water anywhere. He saw a vessel of water. But very little water was there in the vessel. The beak of the crow was not reaching in the jar. He realized that his earlier forefather made use of pebbles to reach to the water. But there were no pebbles present nearby and the crow is not able to collect pebbles from another place because of tiredness. He was very sad.



- *Do you think the crow should be sad?*
- *Was there anything that the crow could do to drink water?*

Activity Contd...

Crow sat on a big stone and looked around. He started thinking and found an empty pack of frooti with a straw.

- *He thought something.*
- *He became very happy.*



Can you tell what made him happy? And why?

Reflection on the Activity

He realised that he could

- *Take the straw from empty pack.*
- *He could use that straw to drink the water.*
- *He did the same.*
- *He drank the water and flew away.*
- *He was very happy.*



A Creative Thinker can solve any problem!

Who is a Creative Thinker?

- A creative thinker never gives up.
- A creative thinker looks for all possibilities.
- A creative thinker is always optimistic.
- A creative thinker knows that there is a scope for improvement.

Each one of us has substantial amount of creative thinking.

Activity 2- Puzzle Time

1. What has a head and a tail but no body?
2. I have keys but no locks. What am I?
3. What has four legs but can't walk?
4. I am full of keys but cannot open any doors.
What am I?
5. Which word is the odd one out?
Dog, Cat, Rabbit, Turtle



Think creative and try to find the solutions of these puzzles.

Activity 2 (contd..)

1. What has a head and a tail but no body?

- A coin

2. I have alarms but I am not a watch. What am i?

- A mobile phone

3. What has four legs but can't walk?

- A chair

4. I am full of keys but cannot open any doors. What am I?

- A Keyboard

5. Which word is the odd one out?

Dog, Cat, Rabbit, Turtle



Activity 3: When problem is well-defined!

Here are given three fractions. Arrange them in increasing order.

$$\frac{1}{3}$$

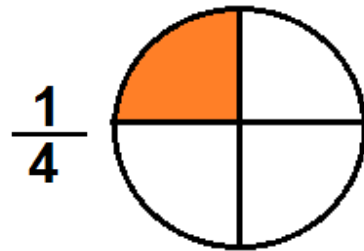
$$\frac{1}{4}$$

$$\frac{1}{2}$$

- *Do you think the problem given above is clear and well-defined?*
- *How will you solve the above problem?*

One of the students thought of an interesting way to solve the said problem. Here it is.

- He drew three circles of same size and divided each as per the given fractions.
- Then he coloured one portion as per the given fractions.
- From visuals, he was clear that which fraction is the largest and which is the smallest.



$$\frac{1}{4} < \frac{1}{3} < \frac{1}{2}$$

Activity 3: Discussion Forum

- *When the problem is well-defined, it is easy to solve.*
- *Solving a well-defined problem takes less time.*
- *There can be many ways to solve a well-defined problem.*



**a problem well-defined
is a problem half-solved**

John Dewey

Steps involved in Solving Problem

**1.
Define the
problem.**

**2.
Think of
possible
solutions.**

**3.
Evaluate
and select
solutions.**

**4.
Implement
the solution
and assess.**

Barriers in Problem-Solving

Some times finding the solution to a problem may not be tough, but there could be some barriers to it.

Our perspective

(try to look at the problem from different angles)

Our emotions

(try that your emotions do not interfere)

Our relations and culture

(think from a neutral point of view)



Tasksheet

PROBLEM <i>(Think of any problem you faced)</i>	THOUGHTS <i>(What did you think during that time?, that is, what was going in your mind)</i>	POSSIBLE SOLUTIONS <i>(What possible solutions came to your mind in this problem?)</i>	SOLUTION <i>(what did you do finally?)</i>

**THANK YOU!
YOU SOLVED THE
PROBLEM WELL!**

**ANY
QUESTIONS? If
you have I can
answer!**

