



Unit : 11 Problem Solving

Activity 1 : I Can

Theme: Problem Solving helps us to deal constructively with problems in our lives. There is always a solution available provided we put our minds in it. This activity will help the students to use problem solving skills in completing a task.

Time Required: 2 periods

Materials Needed: Newspaper, crayons, gluestick/gum, chart paper and worksheet

Mode: Group activity - Role Play

Life Skills to be enhanced: Problem Solving, Decision Making, Effective Communication, Self Awareness, Creative Thinking and Interpersonal Relationships

Objective: Students will be able to use problem solving techniques in completing the tasks as a team.

Process:

- Divide the class into five groups and allot the following tasks to each group (20 minutes)

- | | |
|----------------|--|
| Group 1 | Select a short story of your choice. Use the materials given to you and add on at least four extra materials from around you to develop the storyline. Enact the story in your own group. |
| Group 2 | Select a short story of your choice. Use the materials given to you and add on at least three extra materials from around you to develop the storyline. Enact the story in your own group. |
| Group 3 | Select a short story of your choice. Use the materials given to you and add on at least five extra materials from around you to develop the storyline. Enact the story in your own group. |
| Group 4 | Select a short story of your choice. Use the materials given to you and add on at least two extra materials from around you to develop the storyline. Enact the story in your own group. |
| Group 5 | Select a short story of your choice. Use the materials given to you and add on at least one extra material from around you to develop the storyline. Enact the story in your own group. |

Presentation Time: Ten minutes for each group

Focus points for presentation: Challenges faced in the group activity. For example: time, selection of story, interaction with peers, usage of aids etc and how the group was able to overcome those challenges.





Key Messages

1. Situations will arise in life wherein decision needs to be taken and the challenge needs to be addressed.
2. We address those challenges either in a complaint mode or with an optimistic frame of mind.
3. There is always a solution available provided we put our minds to it !

Worksheet I Can

- a) How did each participant help in developing the story line according to instructions?

- b) Was your group able to identify the challenges ? If yes, give examples. If not, why?

- c) What solutions did the group agree ?

- d) What solutions did the group not agree ? Why ?

Suggested Further Activity :

Let students reflect on the following:

Think of a situation at home where you needed to resolve an issue. Then answer these questions:

- a) What was the issue ?
- b) What were the possible causes ?
- c) Who was involved in it ?
- d) Do you think the situation could have been handled differently in the beginning itself ?
- e) What steps were taken to resolve the issue ?
- f) What was your learning from the entire issue ?





Activity 2 : Puzzles and Teasers

Theme: Problem Solving skills are required to solve our problems. The puzzles and teasers enable the students to use their thinking skills to identify a problem and then coming up with answers.

Time Required: 1 period

Materials Needed: Six puzzles, worksheet and answersheet

Mode: In groups of five

Life Skills to be enhanced: Problem Solving and Critical Thinking

Objective: Students will be able to use thinking and problem solving skills.

Process:

- Divide the class into groups of five.
- Assign one puzzle to each group.
- Allow ten minutes to complete/solve puzzle.
- Invite the groups to present the process of arriving at the solution. Allow five minutes to each group.
- Discuss with the students on the challenges faced while solving the problem.

Key Messages

Initially a problem seems to be really big but as you look at probable solutions it starts getting sorted out.

Group -1: Filling In

Each of the nine empty boxes contains a different digit from 1 to 9. Each calculation is to be treated sequentially rather than according to the 'multiplication first' system. Can you fill in the empty boxes?

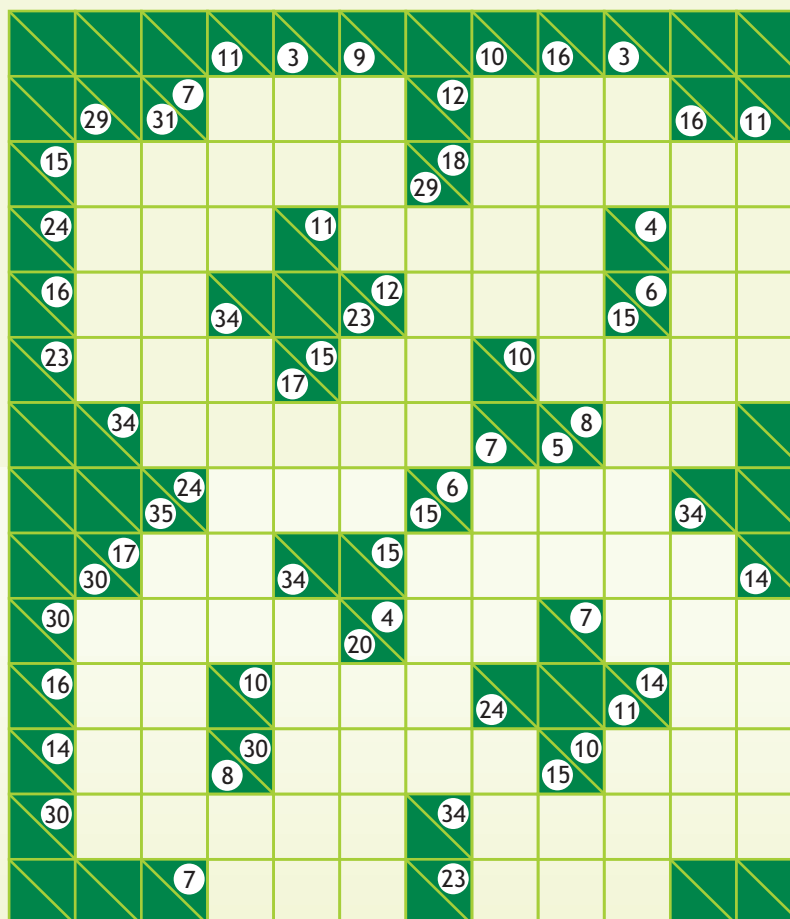
	+		÷		=	2
÷		+		×		
	+		-		=	5
+		-		-		
	×		÷		=	6
=		=		=		
6		6		9		





Group -2: IT figures

Place a number from 1 to 9 in each empty cell so that the sum of each vertical or horizontal block equals the number at the top or on the left of that block. Numbers may only be used once in each block.



Group -3: Set Square

All the digits from 1 to 9 are used in this grid, but only once each. Can you work out their positions in the grid and make the sums work? We've given two numbers to start you off.

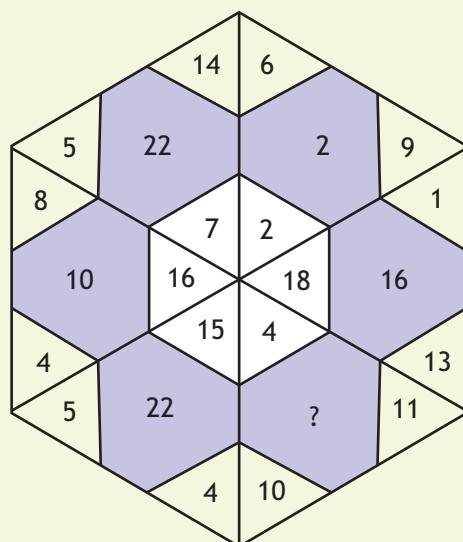
	+		÷	4	=	2
+		+		×		
	-		×		=	9
÷		-		-		
	+	2	-		=	5
=	2	=	5	=	7	





Group -4: Number Hex

What number belongs in the hexagon marked '??'



Group -5: Shell never make it !

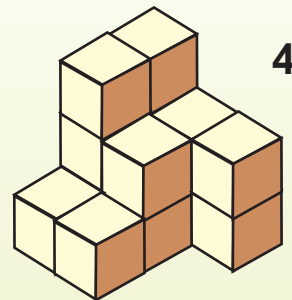
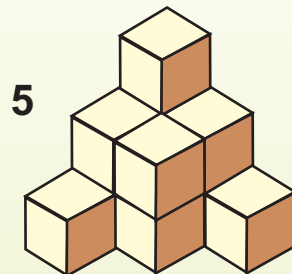
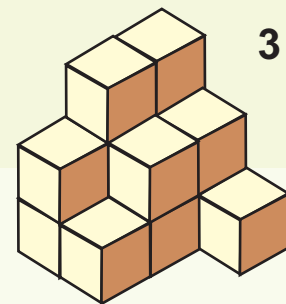
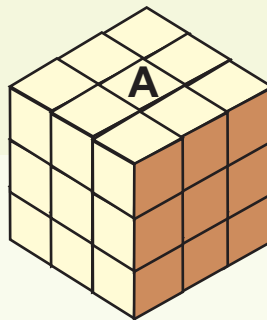
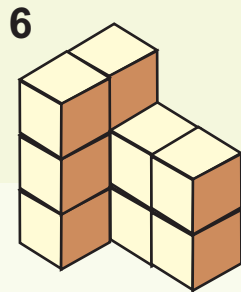
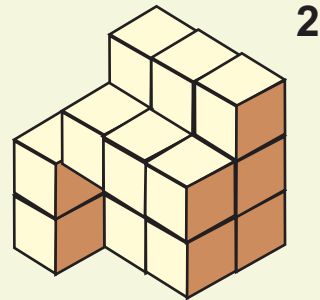
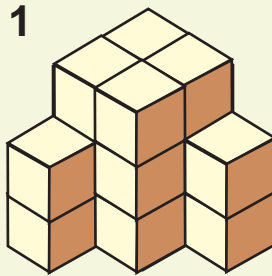
Can you help Tamara the Tortoise find her way to the finish?





Group -6: Cube it

Which two of the numbered pieces will fit together to make cube A?



Acknowledgement : The Giant 1001 Puzzle Book





Answer Sheet - Puzzles and Teasers

Filling in

2	+	8	÷	5	= 2
÷		+		x	
1	+	7	-	3	= 5
+		-		-	
4	x	9	÷	6	= 6
=	=	=			
6	6	9			

Set Square

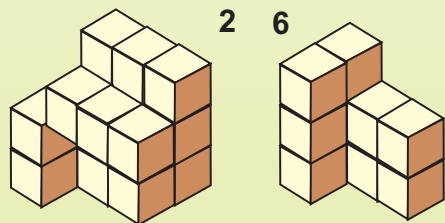
7	+	1	÷	4	= 2
÷		+		x	
9	-	6	x	3	= 9
÷		-		-	
8	+	2	-	5	= 5
=	=	=			
2	5	7			

Number Hex

In each triangle the centre number is the sum of the three corner numbers less the number nearest the middle of the opposite triangle.
So $11 + 10 + 4 - 7 = 18$.

Cube it

2 6



IT Figures

		1	2	4		4	6	2		
5	4	3	1	2		2	4	1	6	5
9	8	7		3	5	1	2		1	3
7	9				8	3	1		4	2
8	6	9		9	7		3	4	2	1
	7	4	8	6	9			5	3	
		7	9	8		2	3	1		
	9	8			1	4	2	3	6	
7	8	6	9		3	1		2	4	1
9	7		7	1	2				9	5
8	6		6	8	9	7		1	7	2
6	5	7	8	9		9	7	4	8	6
		1	4	2		8	9	6		

Shell Never Make it





Worksheet: Puzzles and Teasers

- 1 What were the problems faced while reaching decisions as a group?

- 2 Which traits among the students helped the group to reach a consensus ?

- 3 When stuck with a problem did you look at alternative solutions or you let the problem go ?

- 4 What are the problems that you face daily in school or at home? Has any technique helped you to overcome it ?

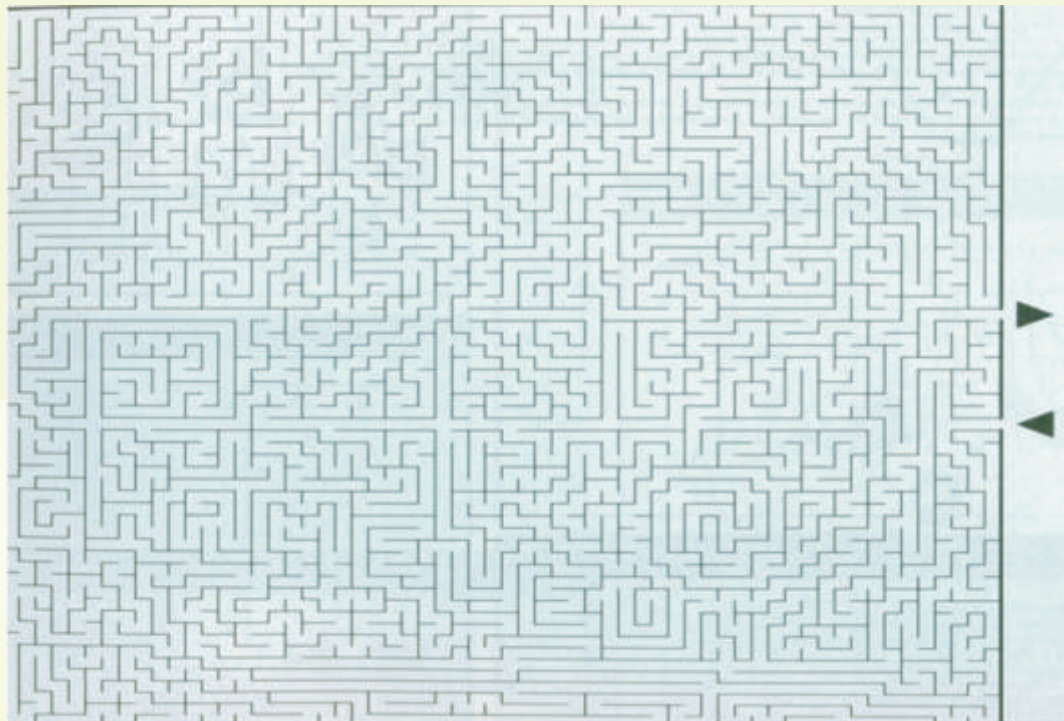




Suggested Further Activity:

Encourage students to solve the following puzzle:

Travel from the entrance to the exit of the maze, filling the path completely to create a picture.





Activity 3 : Barriers to Problem Solving

Theme: There are many barriers to critical thinking which can hold back a person from using his/her analytical skills. Through this activity, the students will be able to understand the barriers to problem solving.

Time Required: 2 periods

Materials Needed: Chart paper, sketch pens and worksheet

Mode: In groups of five

Life Skills to be enhanced: Problem Solving, Decision Making, Effective Communication, Self Awareness, Creative Thinking and Interpersonal Relationships

Objective: Students will be able to recognize the barriers to problem solving and try to remove them.

Process:

- Divide the class. Give a chart paper and two to three coloured sketch pens to each group.
- Assign them the task of creating a self awareness mind field which will help them to make a conscious effort at avoiding mental blocks to problem solving.
- Direct the groups to do the following (allow twenty minutes):
 - In your group think of a problem that you were not able to solve.
 - What do you think were the reasons for not being able to solve the problem?
 - List the reasons (Hint: It could be social conditioning, previous experiences, etc.)
 - Present your thoughts on the chart paper through an innovative presentation (five minutes for each group).

(Note: This session will help the students in raising their awareness on mental blocks and ways of avoiding them which will consequently help them to gain power and confidence to make informed choices.)

Key Messages

1. Barriers to critical thinking can harm and distort critical thinking concepts.
2. These barriers can hold back a person from using his/her analytical skills, reasoning, experience, intuition and common sense from making informed decisions.





Worksheet

Barriers to problem solving reflection time

Identify one situation in your life where you have not been able to make an informed choice because of either one or more of the following mental barriers:

- 1 **Egocentric Thinking** : It is viewing everything in relation to oneself. Such individuals are only concerned with their own interests. They are close minded to the thoughts and ideas of others and are usually unaware of their own thinking patterns.

- 2 **Social Conditioning** : Each individual is unique and age, IQ, race, gender, upbringing, family, friends, genes etc have a dramatic effect on how one views the world and the people one interacts with. Open minded thinking can enable an individual to listen, learn and empathize with the diversity in culture, race and religion.

- 3 **Group Thinking-The Herd Mentality** : “*When everyone thinks alike, no one thinks very much*”. The drive for acceptance from others is a strong motivating force since thinking outside the group can be uncomfortable. Negative Peer Pressure can act as a barrier to resolving of an issue.

Suggested Further Activity:

Let students reflect on the following:

Think of a problem which you and your neighbourhood friends have faced and were not able to solve. What do you think were the reasons for not finding a solution to that problem?





Activity 4 : The Six Thinking Hats

Theme: The Six Thinking Hats concept by *De Bono* is used in solving problems. This activity will help the students to understand and apply this concept in solving problems.

Time Required: 2 periods

Materials Needed: Reading material on De Bono's Six Thinking Hats, six sheets of coloured chart paper (white, red, black, yellow, green, blue) and stapler to make conical hats

Mode: In groups of five

Life Skills to be enhanced: Problem Solving, Decision Making, Effective Communication, Self Awareness, Creative Thinking and Interpersonal Relationships

Objective: Students will be able to apply De Bono's Six Thinking Hats in resolving issues and problems.

Process:

- Divide the class into five groups and give each group the following sheet.

The Six Thinking Hats

It is a simple but powerful way for looking at issues from different perspectives - one at a time.

White Hat only looks at the facts and data of the decision.

Under the **Red Hat** feelings are expressed about the issue.

The **Black Hat** is for looking at the negative effects of the decision.

The **Green Hat** is for thinking about alternatives.

The **Blue Hat** is for clarifying which kind of thinking is going on.

"The biggest enemy of thinking is complexity, for that leads to confusion. When thinking is clear and simple, it becomes more enjoyable and more effective. The Six Thinking Hats concept is very simple to understand. It is also very simple to use." - Edward De Bono

- Assign the following situation to the groups and ask them to use the Six Thinking Hats to look at the situation from different angles.

Situation: *"A decision has been taken by the school that there will be no school canteen."*

- Invite each group to present their viewpoints wearing the different Hats while presenting them.





Key Messages

1. The Thinking Hats are a significant shift in thinking about issues.
2. It is a way of reviewing ideas and concepts from multiple viewpoints.
3. It can be used to get out of the box and see the world from different perspectives.

Suggested Further Activity:

Your school has taken a decision of not ringing the bell at periodic intervals. A meeting of the Prefectorial Board has been called to brainstorm on the issue using De Bono's Six Thinking Hats.

White Hat :



Red Hat:



Black Hat:



Yellow Hat:



Green Hat:



Blue Hat:







Activity 5 : Understanding a Problem Better

Theme: Different people respond to a particular problem differently. To arrive at a solution to which different people have responded, answers should be collated. The activity will help the students to obtain information or test opinions from a group of people.

Time Required: 2 periods

Material Needed: Pencils or pens

Mode: In groups of five

Life Skills to be enhanced: Problem Solving, Decision Making, Effective Communication, Self Awareness, Creative Thinking and Interpersonal Relationships

Objective: Students will be able to:

- frame questions properly to gather information;
- obtain information from a group of people;
- analyze the information carefully;
- consolidate opinions gathered from different people.

Process: Instruct students to do the following:

- Identify the subject area/problem/issue that you want to find out more about or are looking for a solution.
- Identify the number and groups of people who you would like to answer the questionnaire and what kind of answer do you need? There are many different ways questions can be answered. For some questions you can answer yes or no, for others, you may want a longer, more involved answer.
- List questions you would like to ask people.
- Arrange the list of questions in a sequence starting with the easy/basic topics.
- Check the questions to make sure that they are easy to understand and answer - you may test the questions on some people and amend them if necessary.
- When the questions are ready, you can begin asking people these questions. Remember to ask people's permission first before you begin your activity.
- When all the questionnaires are completed / or enough people have been asked, compile the results.



- For each question read the answers?
- How are the answers different and were they as you expected?
- Once all the results are compiled, think about what you have found out and how you may share your results with others.

Key Messages

Questionnaires can test people's knowledge, opinions, or attitudes. If a large number of people are going to respond to a set of questions, it is important to collate the answers.

Suggested Further Activity:

Encourage students to reflect on the following:

Think of a problem for whose solution you looked to your father, mother and elder sibling. What solutions were suggested by them and which one did you accept? Why?

"We all have problems. The way we solve them is what makes us different."

- Unknown





Activity 6 : Why I Eat What I Eat?

Theme: Food is critical to survival and a healthy life. Proper nutrition is necessary for the adolescents' body. They, therefore need to explore their eating habits, so that they can have a proper nutritious diet. This activity will help the students explore their eating habits and creating an environment for discussion on food and its importance in their lives.

Time Required: 2 periods

Materials Needed: Marker pens and flip charts

Mode: In groups of five

Life Skills to be enhanced: Problem Solving, Decision Making, Effective Communication, Self Awareness, Creative Thinking and Interpersonal Relationships

Objective : Students will be able to take proper nutritious diet.

Process:

- Discuss with the students about proper nutrition and why it is a problem to adolescents.
- Students would attempt to understand this problem and reach a consensus.
- Discuss with them as a class, that during adolescence the body needs extra nutrients. In many cases however, young people are too worried about their looks to pay adequate attention to their body requirements. In other cases, young people may not be able to get adequate nutrition due to poverty, cultural myths and taboos.
- Tell them that food is critical for survival and healthy life.
- Divide students into groups.
- Instruct them to discuss their daily diet and anxieties or concerns they have regarding their eating habits. Invite them to use flip charts and marker pens to record the discussion for their presentation.
- Allow twenty minutes.
- Reconvene, and ask each group to make their presentation.
- The following questions may be used to facilitate a discussion:
 - What is the average diet of a young person in your group?
 - Do you notice any differences between the diet of a young man and a young woman? What and why?
 - Do you know any beliefs and taboos regarding food in your society? What are they?



- What could be the reasons for not eating enough?
- Are there any differences between men and women in their consumption of food? What and why?
- Do you have a friend who does not get enough to eat or know someone who avoids food due to some reason? Would you like to share your knowledge with the group?
- Are you familiar with the terms “*anorexia*” and “*obesity*”? What do these words mean?

Key Messages

1. Food is critical for survival and healthy life.
2. During adolescence the body needs extra nutrients.

Suggested Further Activity:

Instruct students to make a diet chart for all the members of their family, according to their body requirements.

You determine the right time to move forward and take a step.
Remember these important truths:

- | | | |
|---|---|--------------|
| a. The wrong decision at the wrong time | = | DISASTER |
| b. The wrong decision at the right time | = | MISTAKE |
| c. The right decision at the wrong time | = | UNACCEPTANCE |
| d. The right decision at the right time | = | SUCCESS |

Courtesy: nilportugues.com

