

STUDY COURSE MATERIAL

COMPUTER

SESSION-2020-21

CLASS-4

TOPIC: STEPWISE THINKING

DAY-1

❖ TEACHING MATERIAL

STEPWISE THINKING

A **step** by **step** planning of an activity is called step-wise thinking.

REASONING is the capacity of understanding statements and making sense of them using logic and establishing theory.

PROBLEM SOLVING is the act of defining a problem; determining the cause of the problem; identifying, prioritizing, and selecting alternatives for a solution; and implementing a solution.

THE PROBLEM-SOLVING PROCESS

In order to effectively manage and run a successful organization, leadership must guide their employees and develop problem-solving techniques. Finding a suitable solution for issues can be accomplished by following the basic four-step problem-solving process and methodology outlined below.

Steps are :-

1. Define the problem
2. Generate alternative solutions
3. Evaluate and select an alternative
4. Implement and follow up on the solution

Steps to Plan Any Event



1. Develop Your Event Goal and Objectives
2. Organize Your Team
3. Establish Your Budget
4. Create an Event Master Plan
5. Set the Date
6. Book Your Venue
7. Brand Your Event
8. Make arrangements

9. Enjoy party

DAY-3

Let us consider some cases and check how they can be solved step-wise.

Case 1: Your little sister doesn't know how to brush her teeth.

Help her by giving stepwise instructions.

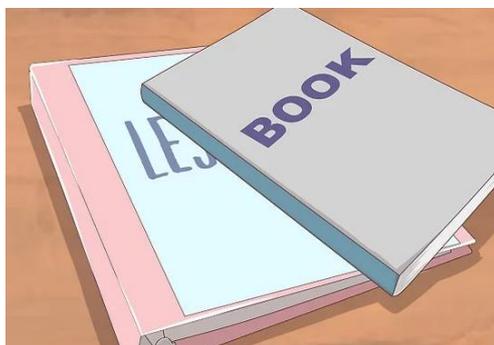


- Aim the toothbrush at a 45-degree angle towards the gum line.
- Use a pea-sized amount of toothpaste.
- Use a gentle circular motion.
- Repeat on the inside surfaces.
- Use a light back and forth motion on the chewing surfaces.
- Spit out the toothpaste after brushing.
You do not need to rinse, as the small amount of fluoridated toothpaste left in your mouth after spitting continues to protect against tooth decay.

DAY-4

Case 2: Write down the steps required to pack your bag for the next day

- ✚ Pack any books and binders you need to take to school first.



- ✚ Add your planner, notebooks, folders, and homework next.



✚ Include writing implements and other supplies you may need.



✚ Add items for electives or extracurricular activities.



✚ Pack a lunch if you don't buy yours at school.



ENCODING AND DECODING

The **encoding** of a message is the production of the message. It is a system of coded meanings, and in order to create that, the sender needs to understand how the world is comprehensible to the members of the audience.

In the process of encoding, the sender (i.e. encoder) uses verbal (e.g. words, signs, images, video) and non-verbal (e.g. body language, hand gestures, face expressions) symbols for which he or she believes the receiver (that is, the decoder) will understand. The symbols can be words and numbers, images, face expressions, signals and/or actions. It is very important how a message will be encoded; it partially depends on the purpose of the message.^[3]

The **decoding** of a message is how an audience member is able to understand, and interpret the message. It is a process of interpretation and translation of coded information into a comprehensible form. The audience is trying to reconstruct the idea by giving meanings to symbols and by interpreting the message as a whole. Effective communication is accomplished only when the message is received and understood in the intended way.

SOME SIMPLE ENCODING TECHNIQUES

1. **REVERSE THE WORDS CODE:** In this method, you can encode a word by writing the original word in a reverse order. For example:

Normal Language	Encoded Language
PEN	NEP
BOY	YOB
READ	DAER

2. **NUMBER SWAP CODE:** All the letters in the alphabet are assigned numbers according to their position in the alphabet, either in ascending or descending order.

In the number swap encoding, we swap the corresponding letters with the number assigned to them.

Following table depicts this method:

A	B	C	D	E	F	G	H	I
1	2	3	4	5	6	7	8	9
J	K	L	M	N	O	P	Q	R
10	11	12	13	14	15	16	17	18
S	T	U	V	W	X	Y	Z	
19	20	21	22	23	24	25	26	

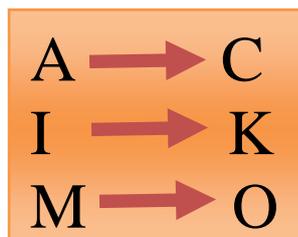
Now, let us see how to encode the word "FRIEND" using the **Number Swap Method**. Check the number assigned to the letter, and use that number to represent the letter in the code.

F	R	I	E	N	D
6	18	9	5	14	4

So, the code for the word "FRIEND" is 6 - 18 - 9 - 5 - 14 - 4.

3. CAESER CIPHER CODE: It is one of the simplest method in which letter substitute another letter in the text at some fixed number of places down the alphabet.

Let us understand how this method works. Suppose the word AIM is encoded as CKO. Now, analyze how we got this code.



A → C: There is one letter between A and C (i.e., B) which means we skipped one letter. Likewise, we skipped one letter between I and

K, as well as one letter between M and O. So, here we have got the code by shifting two places to the right.

VIDEO LINK

LINK: <https://www.youtube.com/watch?v=OzPqaTYCPiA>

LINK: https://www.youtube.com/watch?v=y-zHP-8_XBQ

PPT LINKS

LINK 1: https://www.youtube.com/watch?v=r6F8F4_gkc0

LINK 2: <https://www.youtube.com/watch?v=JHM99JrJPtk>

LINK 3: <https://www.youtube.com/watch?v=W9XXug9WBQI>

EXERCISE

1. What is reasoning?
2. Use your intelligence and write the steps to for making sandwich.
3. If FRIEND is coded as IULHQG, how can CANDLE be written in that code?
4. If BAT is coded as 2-1-20, then what would be the code for BETTER?
5. If GOOD is written as FNNC, ho will you write DREAM?