

7 Growth Mindset

Growing your superpowers



OBJECTIVES :

1. Be able to justify the statement that 'intelligence / skills / capabilities can be improved by training, practice and feedback'.
2. Be able to explain the term 'growth mindset' in their own words.
3. Be able to differentiate between statements made from a 'fixed mindset' and 'growth mindset'.
4. Be able to apply the concept of a growth mindset to respond constructively to everyday situations.
5. Be able to design an action plan to improve their own capability by thinking through a growth mindset.

1. What do we know about intelligence and capability?

Following are some statements. Some of them might be true while some of them may be false. Take a guess at which ones are true and which ones are false.

- Intelligence is something you inherit.
- It is fixed and does not increase or decrease with age.

TRUE

FALSE

- Talent is always inborn.
- You cannot acquire talent

TRUE

FALSE

- Talented people never fail.

TRUE

FALSE

- Talented people do not need to work hard or improve, they can do things naturally.

TRUE

FALSE

- If you are not good at something in your childhood, you can never be good at it.

TRUE

FALSE

- What you can be good at is not in your hands.

TRUE

FALSE



Encourage the students to discuss each statement and what they feel about it.

The students should try to give justifications for their belief.

Please remember, there is no correct answer.

Students can feel free to decide based on what they believe.

Are the stories real or fictional?

1. A boy who was not considered good enough to be selected for his high school basketball team became an international basketball star.
2. A man who was rejected for not having any creativity and original ideas went on to make highly successful cartoon characters.
3. A girl who lost one leg in an accident climbed the Mount Everest.
4. A boy who was labelled too stupid to learn anything by his teachers went on to become a great scientist.

Well, they are real stories!

The people in the stories are -



1. Michael Jordan

One of the greatest basket ball players of all times.



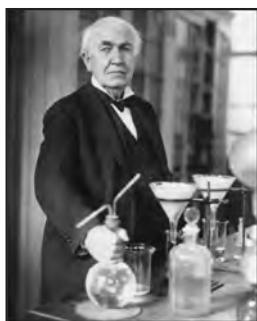
2. Walt Disney

The creator of famous Disney characters like Mickey Mouse and Donald Duck



3. Arunima Singh

The woman who went on to climb not only Mount Everest but also the highest peaks in Europe and Africa with a prosthetic (artificial) leg.



4. Thomas Edison

He not only invented the light bulb, but held more than 1000 patents.



Discuss the following in class :

- How do you think these people achieved whatever they did in their lives?
- Are we born with fixed intelligence/ skills?
- Is it possible for anybody to increase one's intelligence / capability / skills at any age ? How ?
- Can anybody learn something new at any age?



2. How do we learn something new ?

How do we learn ?

Human brain is the coordinator for all important life processes. It is responsible for sending signals to different body parts and receiving signals back as a feedback.

The brain is also the organ responsible for all forms of learning. Let us understand how the process of learning new things occurs in the brain.

READ AND UNDERSTAND



About neurons :

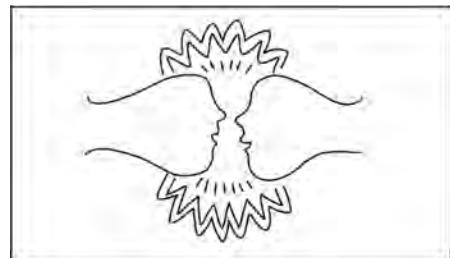
- Our nervous system is made up of billions of cells called neurons. A network of these neurons exists in our brain and throughout the body.
- Whenever we feel a sensation, electric impulses are passed from one neuron to another. These electric impulses travel from one neuron to another through the medium of some chemicals.
- Learning means forming connections between neurons by the passage of electric impulses.



Neuronal connections

Synapse - the space between two neurons

- No two neurons are connected to each other. There is an empty space between them. This empty space is called as synapse.
- Unless the electric impulses jump across the synapse, no activity, sensation or learning can happen.
- Imagine a hill covered with soil and grass. As animals and humans walk across it, pathways are created. Similarly, neurons exist in the brain and throughout the body. Connections are formed between these neurons when electric signals travel through them using the medium of chemicals. In other words, pathways are created in the brain.



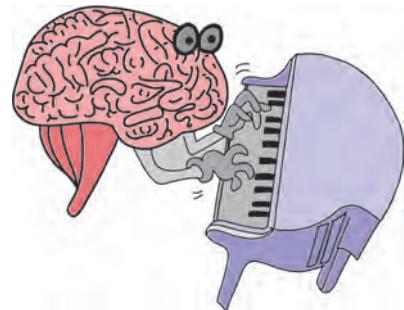
- When the pathways are being created, the initial journey is difficult. Thus when we try to learn something new, we initially struggle. Later on, with practice, the pathways in the brain are well established and we say that 'learning' takes place. Once this learning happens, with more practice we become skilled at something.

3. What does the research on the brain prove ?

Research I

The more we practice writing poems, playing a sport, learning an instrument, singing, solving math problems etc. again and again, the more a particular set of neurons are used, and the more stronger connections become.

Conclusion : we can increase our skills, intelligence, capabilities and creativity with practice.

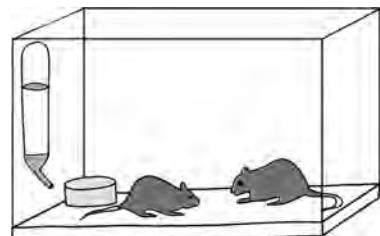


Research II

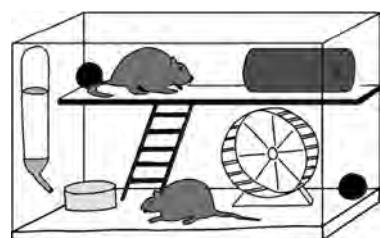
Studies were conducted on rats where some rats were raised in a simple cage with food and water and some in a cage with lots of puzzles, toys, and exercise equipment for the rats to explore.

The rats who were raised in enriched environments developed more neuronal connections. Interestingly, even the rats that were old were able to develop more neuronal connections in their brains !

This proves that if we take up higher challenges we can learn new things at any age



Cage No. 1



Cage No. 2



POINTS TO PONDER

Our brain is just like our muscles. Just as we can strengthen our muscles by exercising, so also, our brain can get stronger by taking up challenging tasks, regular training, practice and improvement based on feedback !

Discuss in class :

Have you ever exercised ? Running, lifting weights, climbing trees, climbing mountains, playing games ?

What happens when you exercise very hard for the first time ? Do your muscles get sore, do you feel the pain ?

Does the pain reduce and after some time do you feel stronger ? The next time you try, can you do the exercise with much less effort ?

What would have happened if you gave up after the first time because of the pain ?

4. Obstacles in learning and improvement

Mindset

Compare the two situations given below.



Observe the reactions of the parents in both the cases.

Discuss :

Do they differ ? If yes why ? Why do they feel confident that the child will learn to walk ?

A baby tries to walk, falls down, gets up, tries again, falls down again. This keeps repeating. Which of the following two sentences comes to your mind in this case ?

1. The baby is learning to walk.
2. The baby can never walk.

A boy tries to understand Maths but gets a low score in the test, he tries again but gets a low score again. Which of the following two sentences comes to your mind in this case?

1. The boy is learning Mathematics.
2. The boy can never learn Mathematics.



Let us Compare



Revati has always been praised by her parents and teachers for being an intelligent girl.

She scored well in her 10th exams and went to a good college. However, she found that there were many intelligent students like her. She started feeling inferior. She stopped asking questions, thinking that others might laugh at her. She started to fear examinations. She felt jealous of those who scored well. When she scored low in her examinations, she went into depression.



Reema has been scoring good marks in her school. However her parents and teachers always praised her hard work more than her intelligence.

They told her about a new brain research that anybody can become intelligent if they challenge their brains enough. She found the syllabus for 11th tough. But she knew she could grow her capability by training, practice and feedback. She asked questions, solved challenging problems and eventually passed 11th with good grades.

POINTS TO PONDER

Mindset - A mindset is a person's attitude/ way of thinking /opinion about something.

It is often seen that people's mindset about their own capabilities, intelligence and talent serves as the biggest obstacle in their own improvement.

Revati's belief (mindset) that intelligence/capabilities are inborn and fixed and cannot be changed is called a 'fixed mindset'.

Reema's belief (mindset) that intelligence / capabilities can change over time by working hard is called a 'growth mindset'

Discuss in class :

Read the above examples in class and discuss the questions given below -

How was Revati's mindset about herself different from Reema's mindset ?

Why was Revati afraid of taking examinations ?

Why was Reema not afraid of the examination despite the fact that she too found the 11th standard syllabus tough ?

Growth Mindset

The term growth mindset was coined by Carol Dweck who works as a professor of Psychology at the Stanford University. Through her research, Carol Dweck proved that students who believe that intelligence/capabilities can change over time by working hard (having a growth mindset) had a greater chance of overcoming their difficulties and improving themselves.

Given below is a list of characteristics of people with fixed mindset and growth mindset. Understand the differences.



Characteristics of people	Fixed Mindset	Growth Mindset
What is their Belief ?	believe intelligence is fixed and can't be developed.	believe intelligence can be developed.
Characteristics of people	leads to a desire to appear intelligent always.	leads to a desire to always learn.
How do they see challenges ?	avoid challenges ?	welcome challenges.
In case of obstacles,	they give up easily.	they continue to try.
How do they see effort ?	see effort as worthless.	see efforts as the pathway to achieve mastery.
How do they see criticism ?	ignore useful criticisms.	learn from criticism.
How they are affected by success of others ?	feel threatened by the success of others.	find inspiration and lessons from the success of others.

5. Adopting a Growth Mindset

There are situations when every person thinks through a fixed mindset. Read the statements below to know how you can identify when you are thinking from a fixed mindset and how to change that to a growth mindset.



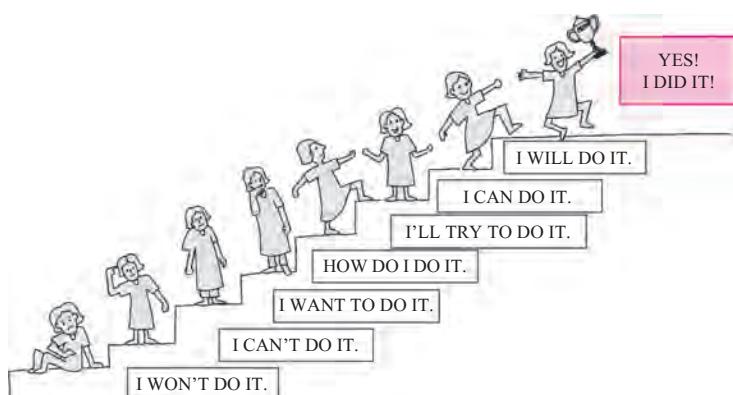
Fixed Mindset

- I am not that good at this.
- I am the best at this.
- My friend is intelligent, I can never be like her / him.
- I don't like to be challenged.
- When I fail I feel I am not good enough.
- I just don't have a math brain and I never will.
- I failed, Everything is over.
- Tell me I am smart.
- If anyone succeeds, I feel threatened and insecure.



Growth Mindset

- What can I do to be better ?
- I can be even better at this.
- I will try to find out what he / she does differently and change.
- I like to challenge myself.
- When I fail I learn from my mistakes.
- I'm going to train my brain in Mathematics.
- I can keep trying other alternatives.
- Tell me I work hard.
- If anyone succeeds, I am inspired.



Simple steps to develop growth mindset

1. Believe that you can change your intelligence and capabilities.
2. Work hard.
3. Use different strategies.
4. Seek help if needed.
5. Always seek higher challenges !

Lets apply what we learnt

1. Discuss :

Following are few situations. Form groups and discuss what a person with growth mindset will do in these situations.

You have recently joined a new group to play a team game. You realize that you are lagging in skills for playing the game. You do not play as well as the others in the group.

You wrote a poem and think you have done a good job. However when you show it to your teacher, she points out quite a few faults in it.

There has been a test series in the class and you have scored very low on most of them. At the same time, your friend has been consistently scoring very well in the tests.

You are good at public speaking in your school. Your teacher suggests that you participate in an inter school elocution competition. There are chances that you may end up not being the best in the competition.

You are struggling with Science. To improve your understanding, you have increased the time you devote to learning Science. However you realize that in spite of that, you have not been able to grasp the concepts in Science.

2. Interview :

Think of somebody who was not good at a skill/capability initially but developed it over a period of time. E.g. your parents, friends, relatives, famous personalities etc.

Try to find out more information about him/her. Interview him/her if possible. Submit a report covering the following points - Which were the incidents where he/she struggled and how did he/she overcome their challenges?



3. Letter to your best friend

Identify one area where you think you are not performing very well and need improvement. Device an action plan for improvement. Write a letter to your best friend informing him/her about your action plan to improve by applying a growth mindset.

ASSESSMENT RUBRICS

Weightage : 10%				
Criteria	Very Good	Satisfactory	Not - Satisfactory	Marks obtained
Participation in activities	Participated actively in completing the exercises/tasks in the chapter, completed all activities in the book	Completed all activities	Copied answers from others.	
Application of content in 'Lets apply what we learnt'	Application of more than two concepts explained in the chapter.	Application of at least one concept explained in the chapter.	No application	
Application of content in 'Letter to a best friend'	Application of more than two concepts explained in the chapter	Application of at least one concept explained in the chapter	No application	

