



Working memory
executive control
(Prefrontal network)

Processing quantity
information in
visuo-spatial formats
(Parietal)

Attention control,
saliency detection
(MPPC and anterior insula)

Processing number
information as
visual symbols
(PITOC/pFC)

Episodic and semantic
memory systems
(MTL/Hippocampus, ATL/post isortex)

$$5 + 8 = ?$$

Brain networks for mental arithmetic

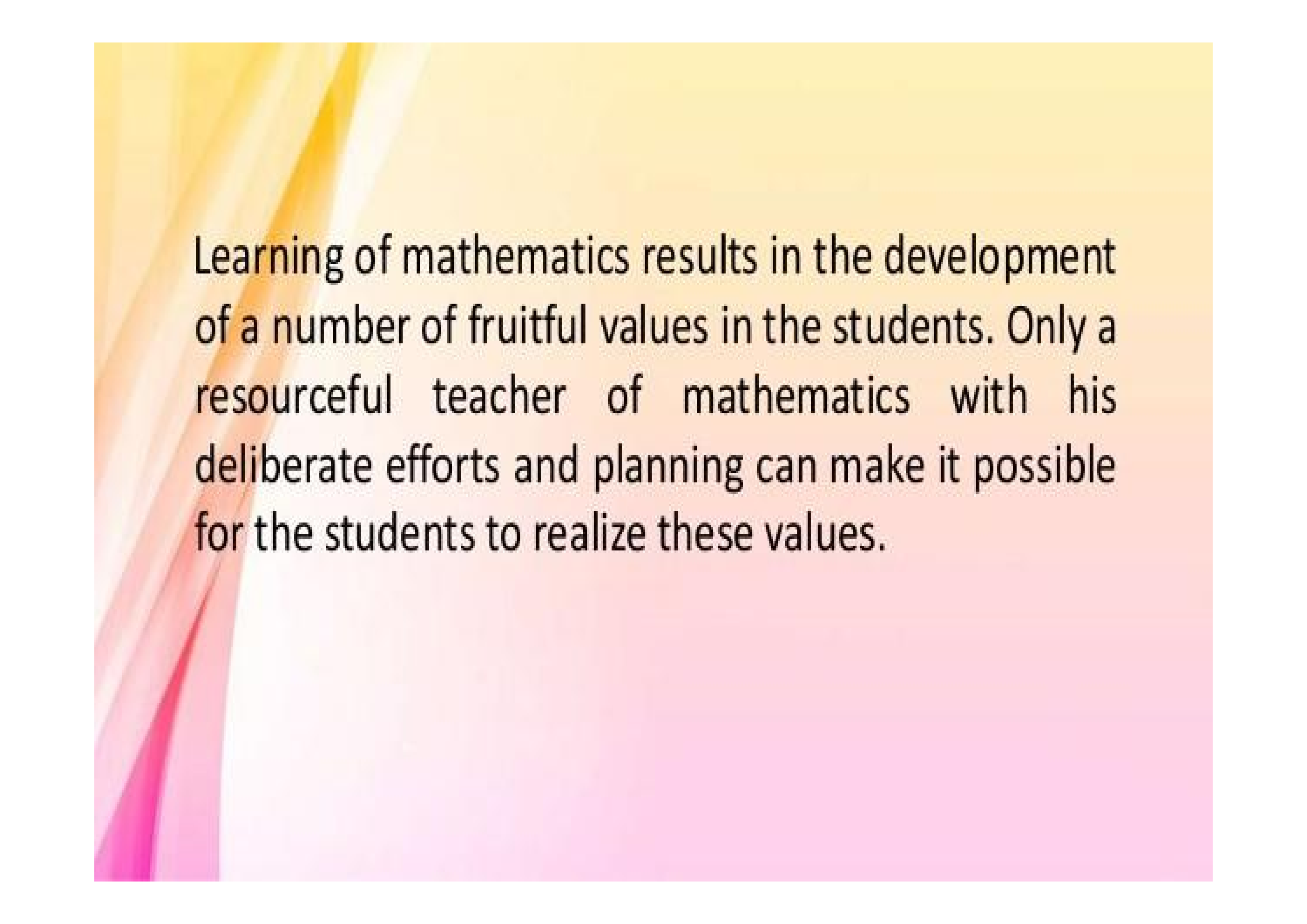
VALUES OF MATHEMATICS TEACHING

FOR THE PUPIL TEACHERS OF BCTE
(PATNA)

I. Values of Learning Mathematics

Values are the outcomes or results achieved after teaching according to certain aims. They are the actual results of our teaching effort.

- Practical or Utilitarian values
- Intellectual values
- Social values
- Moral values
- Disciplinary values
- Cultural values
- International values
- Aesthetic values
- Vocational values
- Psychological values



Learning of mathematics results in the development of a number of fruitful values in the students. Only a resourceful teacher of mathematics with his deliberate efforts and planning can make it possible for the students to realize these values.

Educational Values of Mathematics.

Every teacher of mathematics needs to be informed and convinced about the educational values of his subject.

His own conviction about its soundness enables him to convince the students, parents and the society likewise.

1. Practical or Utilitarian Value

- Everybody uses mathematics in their daily life.
- Any person who is ignorant of mathematics can be easily cheated. He will always be at the mercy of others.
- We have to make purchases daily. We buy cloth, food items, fruit, vegetables, grocery etc. We have to calculate how much we have to pay for everything.
- Mathematics is needed by all of us whether rich or poor, high or low.

2. Intellectual values

➤ Develops intellectual powers:

- imagination
- Memorization
- Observation
- Invention
- Concentration
- Originality
- Creativity
- reasoning

➤ If a child faces mathematical problems, his mind become active in solving that problem.

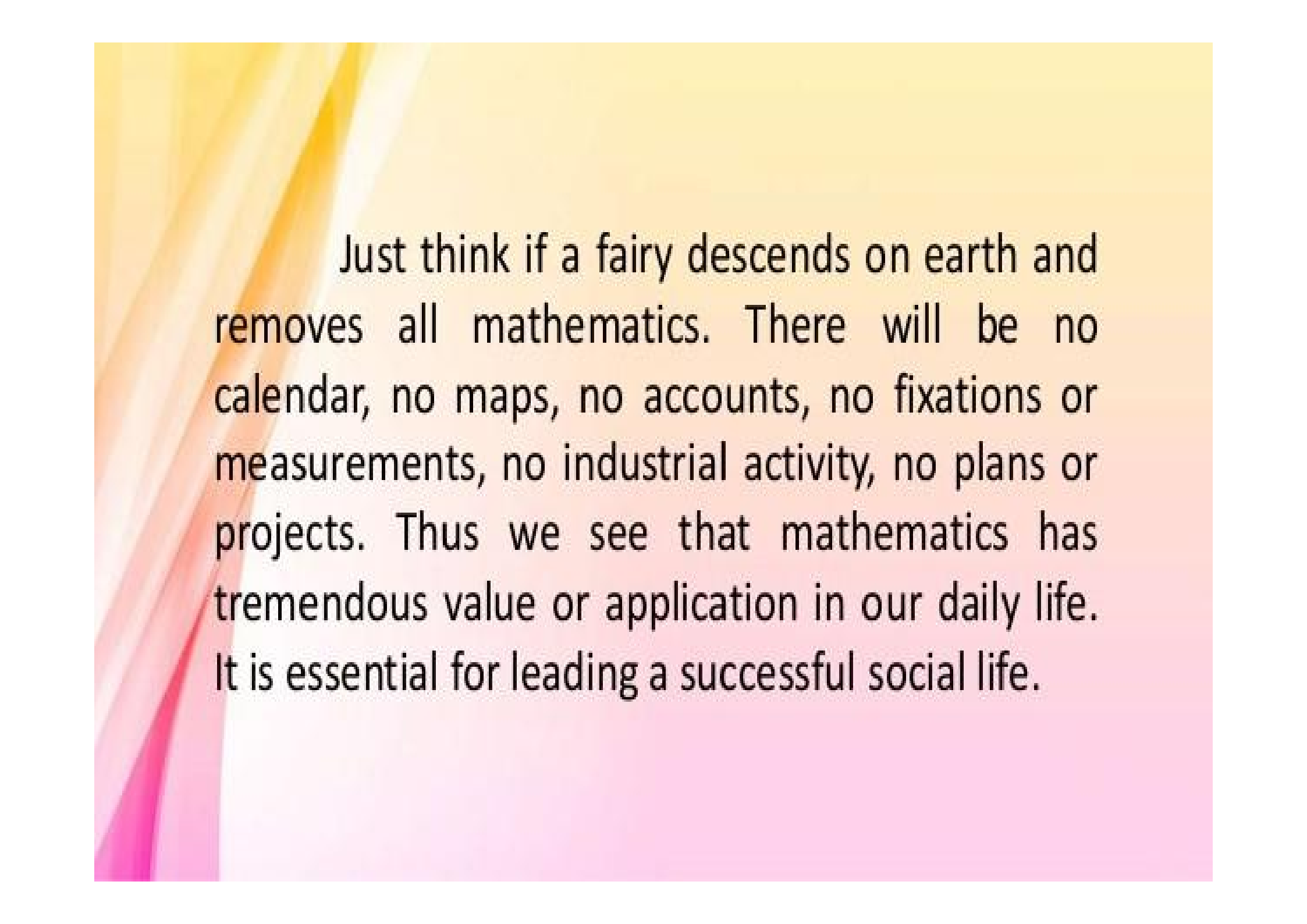
3. Social values

➤ Social values can be acquired

- Tolerance
- Open mindedness
- Objectivity
- Honesty
- Truthfulness
- Co-operation
- Will power

➤ Organization and maintenance of social institutions

- banks
- co-operations
- Railways
- post offices



Just think if a fairy descends on earth and removes all mathematics. There will be no calendar, no maps, no accounts, no fixations or measurements, no industrial activity, no plans or projects. Thus we see that mathematics has tremendous value or application in our daily life. It is essential for leading a successful social life.

4. Moral values

➤ Develops moral qualities:

- Honesty
- Truthfulness
- Justice
- Dutifulness
- Punctuality
- self confidence
- power of distinguishing between right and wrong
- Cleanness
- Patience
- listening to others
- respect to others

➤ Deprives off the feelings of jealousy, hate etc.

➤ Ability in arguing on the correctness and incorrectness of a statement.

5. Disciplinary Values

“Mathematics is the way to settle in the mind a habit of reasoning”

-Locke

- As mathematical knowledge is exact, logical, real and to that point, it creates discipline in a human mind.
- Develops an ability to grasp a situation, to analyze the situation and to perceive correctly the state of affairs

6. Cultural values

“Mathematics is the mirror of civilization”

- By the culture of a nation or society we mean the mode of living of its inhabitants.
- Helps in promoting cultural heritage and transmitting it to future generation.
- The welfare of our civilization almost depends upon scientific and mathematical developments.
- Helped in the development of various subjects and occupations.

7. International values

- Mathematicians research their mathematical ideas from one nation to another nation.
- Mathematician's books and journals are circulated among almost all the nations of the world.

8. Aesthetic values

“Education as a whole should foster the higher impersonal pleasures”

-Thorndike

- One gets pleasure in solving mathematical problems, especially when he get correct answers to his problems.
- Different symmetric designs by Ramanujan are a source of great pleasure
- Eg:
$$1 \times 9 + 2 = 11$$
$$12 \times 9 + 3 = 111$$
$$123 \times 9 + 4 = 1111$$
- Mathematics is closely related with arts like drawing, painting, music etc
- All musical instruments like harmonium, drum, flute, guitar, violin etc are played with the rules of mathematics.

9. Vocational values

- Mathematics has great vocational values.
- Study of mathematics prepares the students for a wide variety of vocations.
- It finds extensive application in all vocations like:
 - Agriculture
 - Accountancy
 - Banking
 - Business
 - Engineering
 - information technology
 - Tailoring
 - Carpentry
 - surveying etc.

Psychological values

Helps the students to imbibe qualities:

- Simplicity
- Accuracy
- Certainty of results
- Originality
- Similarity to reasoning in life
- Verification of results
- Concentration of mind

CONCLUSION

There are mainly ten values in learning mathematics. They are practical value, intellectual value, social value, moral values, disciplinary values, cultural values, international values, aesthetic values, vocational values and psychological values.

Also we learned the correlation of mathematics. We know that mathematics is an universal subject. It has application everywhere. We can't consider anything without mathematics. We observed that mathematics has relation with life, other subjects, and different branches of mathematics and different topics of same subject. Mathematics is a main part in our daily life.

Home work

Can you Solve this?

$$\boxed{A} + \boxed{B} = 8$$

$$+ \quad +$$

$$\boxed{C} - \boxed{D} = 6$$

$$= 13$$

$$= 8$$

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Thank
you

