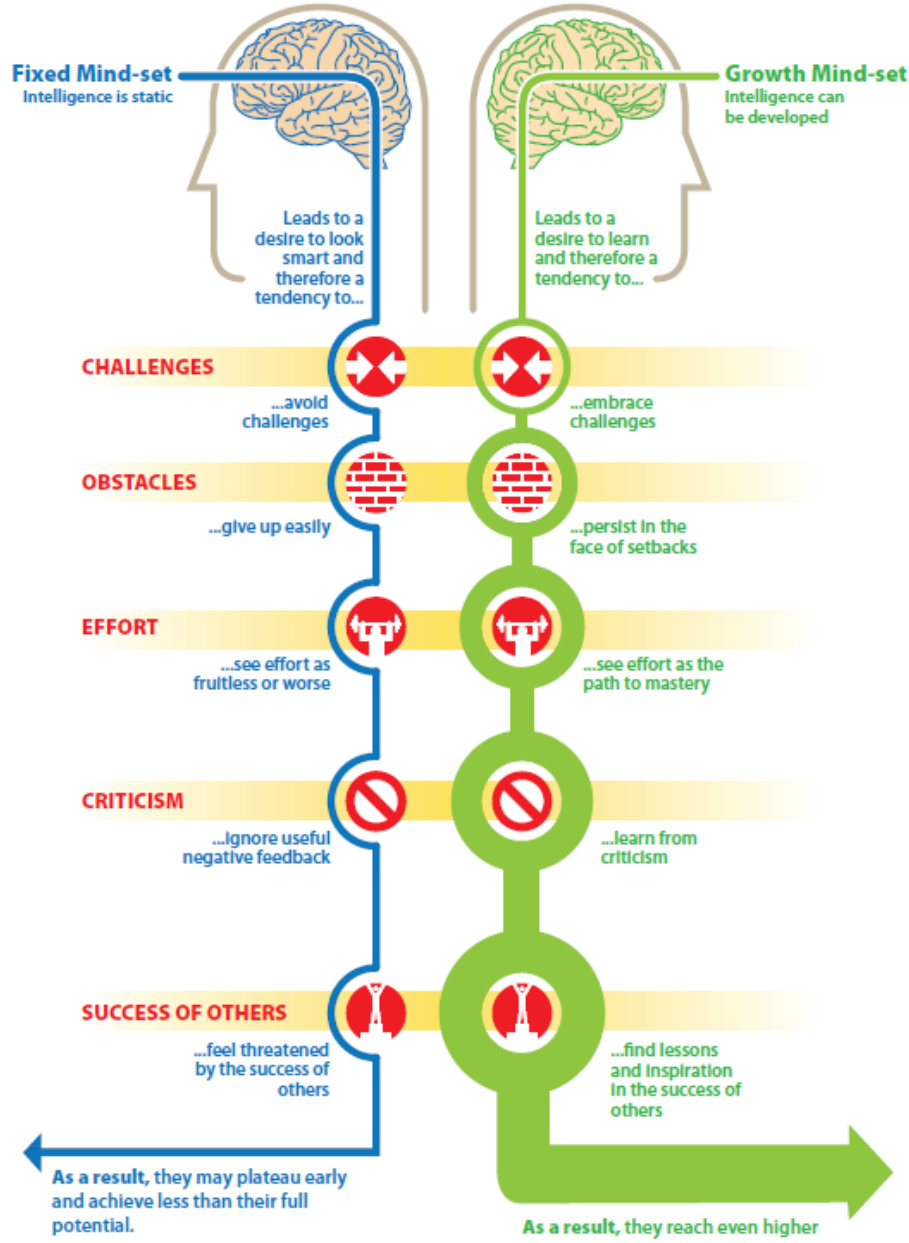


Two Mindsets



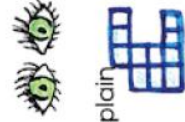
Teachers and students believe *everyone* can learn maths at HIGH LEVELS.

- Students are not tracked or grouped by achievement
- All students are offered high level work
- "I know you can do this" "I believe in you"
- Praise effort and ideas, not the person
- Students vocalize self-belief and confidence



The maths is VISUAL.

- Teachers ask students to draw their ideas
- Tasks are posed with a visual component
- Students draw for each other when they explain
- Students gesture to illustrate their thinking



The environment is filled with WONDER and CURIOSITY.

- Students extend their work and investigate
- Teacher invites curiosity when posing tasks
- Students see maths as an unexplored puzzle
- Students freely ask and pose questions
- Students seek important information
- "I've never thought of it like that before."



Communication and connections are valued.

- Students work in groups sharing ideas and visuals.
- Students relate ideas to previous lessons or topics
- Students connect their ideas to their peers' ideas, visuals, and representations.
- Teachers create opportunities for students to see connections.
- Students relate ideas to events in their lives and the world.



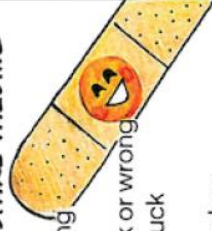
The maths is OPEN.

- Students are invited to see maths differently
- Students are encouraged to use and share different ideas, methods, and perspectives
- Creativity is valued and modeled.
- Students' work looks different from each other
- Students use ownership words - "my method", "my idea"



The classroom is a risk-taking, MISTAKE VALUING environment

- Students share ideas even when they are wrong
- Peers seek to understand rather than correct
- Students feel comfortable when they are stuck or wrong
- Teachers and students work together when stuck
- Tasks are low floor/high ceiling
- Students disagree with each other and the teacher



SCIENCE MOTIVATION QUESTIONNAIRE II (SMQ-II)

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In order to better understand what you think and how you feel about your science courses, please respond to each of the following statements from the perspective of "When I am in a science course..."

Statements	Never 0	Rarely 1	Sometimes 2	Often 3	Always 4
01. The science I learn is relevant to my life.					
02. I like to do better than other students on science tests.					
03. Learning science is interesting.					
04. Getting a good science grade is important to me.					
05. I put enough effort into learning science.					
06. I use strategies to learn science well.					
07. Learning science will help me get a good job.					
08. It is important that I get an "A" in science.					
09. I am confident I will do well on science tests.					
10. Knowing science will give me a career advantage.					
11. I spend a lot of time learning science.					
12. Learning science makes my life more meaningful.					
13. Understanding science will benefit me in my career.					
14. I am confident I will do well on science labs and projects.					
15. I believe I can master science knowledge and skills.					
16. I prepare well for science tests and labs.					
17. I am curious about discoveries in science.					
18. I believe I can earn a grade of "A" in science.					
19. I enjoy learning science.					
20. I think about the grade I will get in science.					
21. I am sure I can understand science.					
22. I study hard to learn science.					
23. My career will involve science.					
24. Scoring high on science tests and labs matters to me.					
25. I will use science problem-solving skills in my career.					

Note. The SMQ-II is copyrighted and registered. Go to <http://www.coe.uga.edu/smq/> for permission and directions to use it and its discipline-specific versions such as the Biology Motivation Questionnaire II (BMQ-II), Chemistry Motivation Questionnaire II (CMQ-II), and Physics Motivation Questionnaire II (PMQ-II) in which the words *biology*, *chemistry*, and *physics* are respectively substituted for the word *science*. Versions in other languages are also available.

OUTCOME	Watch For
GROWTH MINDSET	- Completing all 3 of the fundamental growth mindset techniques during each session: ☐ Praising a student's effort, regardless of outcome ☐ Asking a student to find, correct, and describe at least one mistake ☐ Using open tasks to help a student think through problems and ideas
STUDY STRATEGIES/ TIME MANAGEMENT	- Questions about: ○ class notes ○ class attendance ○ test preparation techniques ○ study /work/ school schedule - Suggesting appropriate changes in habits / schedule - Referrals to Success Coaching
	- Engaging student in evaluating effectiveness of their study habits and schedule - Practicing accepted changes with student before they leave
INDEPENDENT LEARNING	- Asking student what they have done so far to learn the material - Redirecting questions - Having student look things up (rather than tutor doing so) - Student doing most of the writing or typing ("student has the pencil") - Providing adequate wait time - Asking student to summarize their knowledge / understanding
	Using probing questions to instill deeper understanding of material
PROBLEM SOLVING	- Having student verbalize the steps they take to solve a problem - Teaches 4-step problem solving process 1. has student identify and define the given and unknown parts of problem 2. helps student devise a solution plan (i.e., comparing to other problems in hw and text) 3. allows student to carry out the plan on their own as much as possible 4. helps student assess whether or not plan was successful - Giving student another problem to work on alone for practice