

21st Century Skills

As part of an evolving world, students must be prepared for the challenges ahead of them. 21st century skills are the essential abilities students need to be successful in an information-rich, dynamic, technological world.

These skills include:

- *Communication & Collaboration*
- *Technology Literacy*
- *Creativity & Innovation*
- *Global / Cultural Connections*
- *Life and Career Skills*
- *Critical Thinking and Problem Solving*



Communication and Collaboration

Students engage with others using both digital media and face-to-face interactions as they work together to master content, learn about themselves and their environment, and contribute to their personal success and the success of others. Students:



- Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- Develop cultural understanding and global awareness by engaging with learners of other cultures.
- Communicate responsibly in awareness of their digital footprint
- Collaborate beyond the school walls with people of varying ages, academic backgrounds and social groups.
- Contribute to project teams to produce original works or solve problems.

STUDENTS' ATTITUDES TOWARD LEARNING AND THEIR OWN SELF-CONCEPT IMPROVED CONSISTENTLY WHEN COMPUTERS WERE USED FOR EDUCATION." (THE APPLE CLASSROOMS FOR TOMORROW STUDY, 1994)

RESEARCH

Technology Literacy

Students responsibly use the appropriate technology to communicate; solve problems; access, manage, integrate, evaluate, design, and create information to improve learning in all subject areas and to acquire lifelong knowledge and skills in the 21st century. Students :



- Apply technology effectively.
- Use technology as a tool to research, organize, evaluate and communicate information.
- Use digital technologies (Computers, media players, PDA's, GPS, etc), communication/networking tools appropriately to access, manage, integrate, evaluate and create information.
- Use innovative ways of applying technology in challenging new situations
- Develop an awareness of technology-related careers and of factors critical to success in those careers, as well as an understanding of and sensitivity to societal issues related to technology.
- Acquire a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies.

RESEARCH

THE NET GEN READILY TAKES PART IN COMMUNITY ACTIVITIES. GIVEN A CHOICE, THEY SEEM TO PREFER WORKING ON THINGS THAT MATTER, SUCH AS ADDRESSING AN ENVIRONMENTAL CONCERN OR A COMMUNITY PROBLEM. THEY BELIEVE THEY CAN MAKE A DIFFERENCE AND THAT SCIENCE AND TECHNOLOGY CAN BE USED RESOLVE DIFFICULT PROBLEMS. EDUCASE, 2005.

Creativity & Innovation

Students engage in mental and social processes to generate new ideas and concepts, and new associations between existing ideas and concepts, leading to new ways of doing things that can change thinking, processes, and products. Students:



- Tap in to multiple intelligences.
- Thrive when given a choice in process and product results.
- Use higher level questioning.
- Use applied imagination through the Imagine ⇒ Create ⇒ Play ⇒ Share ⇒ Reflect ⇒ Imagine process.
- Participate in authentic learning experiences and reflection.
- Create new products and processes.
- Express themselves artistically.

STUDENTS NEED TO PERSONALLY CONSTRUCT THEIR OWN KNOWLEDGE BY POSING QUESTIONS, PLANNING INVESTIGATIONS, CONDUCTING THEIR OWN EXPERIMENTS, AND ANALYZING AND COMMUNICATING THEIR FINDINGS. (NCR, 1996; AAAS, 1990, 1993; NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS [NCTM], 1991; ROSENSHINE, 1995; FLICK, 1995)

RESEARCH

Global/Cultural Connections

Students understand and interact productively world-wide with people from cultures dissimilar to their own. Students:

- Seek out diverse perspectives and points of view to better understand global problems and issues, past and present.
- Use social media and other electronic tools to communicate and collaborate with people in other nations.
- Use their knowledge of global issues to become involved in improving local and global communities.



THE BOARD ON CHILDREN, YOUTH, AND FAMILIES, WHICH PRODUCED THE 2004 NATIONAL RESEARCH COUNCIL REPORT, OFFERED A RESEARCH-BASED SET OF RECOMMENDATIONS FOR WHAT WE CAN DO TO KEEP YOUNG PEOPLE IN SCHOOL, MAKE HIGH SCHOOL MEANINGFUL, AND KEEP STUDENTS ENGAGED AND MOTIVATED. THE IDEAS INCLUDE:
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Life & Career Skills

Students will acquire and use fundamental skills that are necessary for learning to occur and for life-long success. Students:

- Demonstrate flexibility and adaptability by applying what they learn to a variety of situations.
- Show initiative and self-direction by collecting data to track their own progress to monitor and adjust their learning strategies.
- Exhibit productivity and accountability when they complete products on time to express learning.
- Show leadership and responsibility when they participate in school, district and community activities.
- Show respect for differing opinions, interests and experiences.
- Make environmentally responsible choices.
- Set challenging personal goals.
- Reflect on their own learning and refocus their efforts accordingly.



STUDENTS NEED TO HAVE OPPORTUNITIES TO PROGRESS FROM CONCRETE TO ABSTRACT IDEAS, RETHINK THEIR HYPOTHESES, AND RETRY EXPERIMENTS AND PROBLEMS (NRC, 1996; AAAS, 1990, 1993; NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS [NCTM], 1991; ROSENSHINE, 1995; FLICK, 1995)

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Critical Thinking & Problem Solving

Students engage in purposeful and reflective evaluations and judgments about what to believe or what to do in response to observation, experience, and communication.

Students:

- Use purposeful and reflective evaluation and judgments based upon evidence.
- Identify authentic problems and questions for investigation.
- Find, evaluate, and select appropriate resources and information.
- Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.
- Maintain a critical stance by questioning the validity, seeking divergent perspectives, and accuracy of information.



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- FORMING A GOOD CONNECTION BETWEEN A LEARNER AND THE SOCIAL CONTEXT IN WHICH LEARNING WILL TAKE PLACE; AND
- MAKING "THE CURRICULUM AND INSTRUCTION RELEVANT TO ADOLESCENTS' EXPERIENCES, CULTURES, AND LONG-TERM GOALS, SO THAT STUDENTS SEE SOME VALUE IN THE HIGH SCHOOL CURRICULUM." EDUCASE, 2005.

H

ow do you increase 21st Century Learning?



| DO MORE OF THIS: | DO LESS OF THIS: |
|---|---|
| STRATEGIES THAT ACTIVATE PRIOR KNOWLEDGE | TEXTBOOK DRIVEN INSTRUCTION |
| TESTING AND MAKING PREDICTIONS | SOLITARY SEATWORK |
| HOLISTIC, HIGHER-ORDER THINKING SKILLS | EVALUATION FOCUSED ON INDIVIDUAL, LOW-LEVEL SUB SKILLS |
| STUDENT OWNERSHIP AND RESPONSIBILITY | EVALUATION BASED SOLELY ON TEST SCORES |
| REAL PURPOSES AND AUDIENCES FOR WRITING | ISOLATED LESSONS ON SKILLS WITHOUT CONTEXT |
| COLLABORATIVE GROUP WORK | "TURNING IT IN," AS OPPOSED TO PUBLISHING FOR REAL AUDIENCES |
| CUMULATIVE VIEW OF GROWTH AND SELF-EVALUATION | STRESSING OF MEMORIZATION AS OPPOSED TO UNDERSTANDING |
| ACTIVE EXCHANGE AND VALUING OF STUDENTS' IDEAS | TESTING EXCLUSIVELY FOR GRADES |
| PROBLEM-SOLVING APPROACH TO INSTRUCTION | ROTE MEMORIZATION OF FACTS WITHOUT CONTEXT |
| QUESTIONING AND MAKING CONJECTURES | FOCUSING ON LARGE NUMBER OF ISOLATED SKILLS |
| FACILITATION OF LEARNING | RIGIDLY FOLLOWING CURRICULUM |
| DEPTH OF LEARNING WITH FEWER OBJECTIVES | BROAD COVERAGE OF UNCONNECTED FACTUAL INFORMATION |
| FORMATIVE EVALUATION | TEACHER TAKING ON FINAL AUTHORITY AND RESPONSIBILITY FOR STUDENT LEARNING |
| BUILDING UNDERSTANDING OF CONCEPTS THROUGH REFLECTION | INCLUDING EVERYTHING WITHOUT ALLOWING TIME FOR DEEPER UNDERSTANDING OF TOPICS |
| PROJECT-BASED LEARNING | LECTURING |
| REAL-WORLD APPLICATIONS | EXCLUSIVE USE OF SUMMATIVE EVALUATION |
| PROVIDE CHALLENGING OPPORTUNITIES FOR LEARNING | MEASURING SUCCESS ONLY BY TEST SCORES |
| BACKWARDS DESIGN | EXCLUSIVE USE OF WHOLE-CLASS INSTRUCTION |
| LEARNING ACTIVITIES BASED ON ESSENTIAL QUESTIONS | SENSE OF CLASS AS A GROUP OF COMPETING INDIVIDUALS |
| INTEGRATION OF SUBJECT AREAS | "DISPENSING" KNOWLEDGE |
| UNDERSTANDING AND RESPONDING TO STUDENT INTEREST | LOOKING FOR THE "RIGHT ANSWER" |
| ACTIVITIES THAT ENGAGE STUDENTS IN INQUIRY AND PROBLEM SOLVING ABOUT SIGNIFICANT HUMAN ISSUES | ASSESSING STUDENTS ONLY AT THE END OF A GRADING PERIOD OR PROJECT |
| INTEGRATION OF THE ARTS | TEACHING BY TELLING |
| USE OF TECHNOLOGY TOOLS AND SKILLS | ASSESSING ONLY WHAT IS EASY TO MEASURE |

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