ACADEMIC & CAREER PLANNING AND PROGRAM OF STUDIES

SVGS

SHENANDOAH VALLEY GOVERNOR'S SCHOOL
ARTS & SCIENCES

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Sponsored by:
Virginia Department of Education
Office of Gifted Programs
and
Augusta County Schools
Staunton City Schools
Waynesboro City Schools

Shenandoah Valley Governor's School is committed to maintain an environment free from harassment and discrimination. All students attending Shenandoah Valley Governor's School may participate in education programs and activities, including but not limited to health and physical education, music, vocational and technical education. Educational programs and services will be designed to meet the varying needs of all students and will not discriminate against any individual for reasons of race, color, national origin, religion, age, disability, or gender. Students and school personnel are protected against retaliation.

Retaliation against students or school personnel who report harassment or participate in any related proceedings is prohibited. The School division will take appropriate action against students or school personnel who retaliate against any student or school personnel who report alleged harassment or discriminate or participate in related proceedings.

The Augusta County School Board does not discriminate on the basis of race, color, national origin, religion, age, disability, or gender in its programs and activities and provides equal access to the Boy Scouts and other designated youth groups. The following persons have been designated to handle inquires regarding non-discrimination policies:

Title IX Coordinator
Eric W. Bond, Ed.D.
Assistant Superintendent for Personnel
18 Government Center Lane
PO Box 960
Verona, VA 24482
540-245-5107

Section 504 Coordinator
George R. Earhart
Assistant Superintendent for Administration
18 Government Center Lane
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Dear Parents and Students,

Our programs and courses are designed to challenge highly motivated students in the arts and sciences. Students are asked to demonstrate their abilities and talents in different ways and to become effective independent learners and thinkers. Our students have worked hard for this opportunity and have been selected to become a valued part of a unique educational environment.

We work to help students understand and appreciate their ability to positively affect the world as the leaders, thinkers and creators of the next generation. We appreciate students' accomplishments as evidence of what they have done but challenge them to gain new skills and to understand their potential for what they can and will accomplish in the future.

Beginning in 2013-14, each student in Virginia is required to develop a formal academic and career plan which begins in 7th grade. This plan is designed to be a working document to better assist students in goal setting, specifying interests, learning about career paths, tracking progress and developing an academic plan to successfully reach his or her educational and career goals. Students and parents will work with their school counselors at their middle or high school to formalize and revise this plan as the student moves through each grade.

SVGS supports this state initiative and embraces the opportunity to better inform and guide students as they prepare for postsecondary education and professional life.

This academic and career planning guide is designed to:

- ✓ *Provide students and parents relevant information about careers*
- ✓ *Provide students and parents information to connect academic choices with career*
- ✓ *Provide prospective students and parents information about middle school and high school curriculum as related to SVGS courses*
- ✓ *Provide current students and parents the information needed to make informed choices about SVGS courses as related to their academic and career goals*

Students and parents should review this guide and consult with their school counselor regularly. It is in the student's best interest to develop a focused and challenging program of studies for extensive preparation and continued growth. Making informed decisions and setting goals are keys to future success.

There are often many variables and fluctuations in interest and performance throughout a student's academic career. We look forward to working collaboratively with you to help maximize each student's potential. Please feel free to contact me if you have questions or we can assist in anyway.

Sincerely,

Lee Ann Whitesell

Lee Ann Whitesell
Program Director

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MESSAGE FOR PARENTS: *TALKING WITH YOUR STUDENT ABOUT ACADEMIC PLANS AND CAREER GOALS*

The following is an adaptation of a document titled "Talking with College Students about Careers" written by Diane Kohler, former Senior Associate Director of the James W. Stuckert Career Center at the University of Kentucky.

"Indeed, the very thought of career planning and making academic choices strikes fear in the hearts of many students. The implication is that one false step, one wrong decision, and life will be unfulfilled at best, ruined at worse. With that kind of pressure, it is understandably difficult for students to discuss their plans and uncertainties. There are twists along the path, but few wrong turns".

All experience and knowledge your student acquires, both in and out of the college classroom, will help develop skills that may be used in many different careers and employment settings. Because your role as a parent has been, and will continue to be, one of the most influential in your son or daughter's choices, the following suggestions are offered for your consideration and use in discussions with your student.

ENCOURAGE: Career Exploration before Choice

Whether your student seems to have definite career goals, or is still uncertain about the future, encourage career exploration before career choice. The high school experience is meant to expand options before narrowing them. To foster career exploration, resist the urge to give your nod of parental approval too early in the process. By sharing your experience and knowledge, rather than your opinions and judgments, you allow your student to "save face" when s/he inevitably decides to scrap previously stated plans and explore other options. This is a natural part of the process.

REASSURE: Career Decisions are a Process

Students sometimes avoid or postpone seeking help with career decisions due to faulty assumptions that are prevalent and counter-productive to exploring careers.

1. *Finding a career direction is a "process" not a one time "event."* This process is simple and can easily be applied to many different life choices. The first step of self-assessment involves identification of personal interests, values and skills. In the second step, career exploration, a list of career alternatives is generated that possibly meet one's needs. Thirdly, assessing the alternatives by evaluating the "fit" between the individual's needs and the career field's rewards is accomplished by talking and reading about the alternatives as well as seeking shadowing experiences and internships. If the decision is deemed less than satisfactory, one simply backs up and re-enters the process at the appropriate step, doing more self-assessment and/or career exploration.

2. *Be assured, and assuring, that there is more than one good career fit for your son or daughter.* Students are often overcome by "analysis paralysis" when they labor under the false assumption that there is only one perfect career for them and they must find it or be doomed to failure. All individuals are multi-talented with hundreds of skills developed in academic, employment, social and family settings. These skills will transfer to a number of different employment environments.

3. *There is not always a direct link between majors and careers.* Many jobs routinely draw on a much wider variety of majors than most students imagine. By encouraging your student to study something s/he loves, you will almost assuredly be promoting career "fitness." All academic majors

promote critical thinking skills—understanding concepts as well as details and making connections between abstract and specific meanings—that are important in most occupations. In addition, encourage your student to "tailor" their field of academic study by seeking volunteer work, mentorships, leadership roles, service learning or summer and part-time jobs in career-related areas to add breadth and depth to their academic pursuits.

PROMPT RATHER THAN PRY

As parents who among us has not experienced the sinking feeling of a "disconnect" when trying to engage our sons and daughters in conversations about their plans? If we proceed slowly, choose our timing for periods of relaxed and uninterrupted time, we can be valuable sounding boards in the career decision-making process.

1. *Ask "open-ended" questions that begin with "how," "what," "where," and "when."* Avoid starting your questions with the word "why" which often puts your listener on the defensive. By staying away from questions that can be answered with a simple 'yes' or 'no,' you will be more likely to keep conversations flowing and encourage further exploration. For example:
   "What are some ways of working with people that you have enjoyed the most?"
   "What settings or environments seem appealing to you when you think about work?"
   "What issues are you passionate about that you would like to make a difference about?"
   "How do you suppose you could get some work experience using the skills you're developing as an English major?"
   "Whenever you talk about doing research in your biology class, your eyes really seem to light up. What type of research do you enjoy the most?"
   "What classes have you enjoyed the most these past two years? Disliked?"
   "If you weren't worried about making money where would you like to work? Doing what kinds of things?"

2. *Observe and label strengths and skills.*
   Many students will discount parental praise as too subjective to be meaningful. Rather than heap general praise and accolades, even though well-deserved, your objective, non-judgmental observations sometimes carry more weight, e.g.

   "You appear comfortable and sound persuasive when you speak to small groups. How do you feel when you're doing that?"
   "You seem to have a flair for_____."
   "How did you go about raising money for your group? It sounds like you had to make contact with people you didn't know and convince them you had a good cause."

The career decision-making process is easy to learn and applicable to many of life's major decisions. As a positive and powerful influence in your student's life, you have many opportunities to help with the self-assessment and occupational exploration that lead to satisfying and rewarding career choices. Encourage your student to get involved in the process—it's only too late if s/he doesn't start!

CAREER INFORMATION

Shenandoah Valley Governor's School offers students many different options in addition to the variety of courses available at their home high school. It is important for *both prospective and current students* to be well informed about their academic options and how they relate to various career paths. Academic choices should reflect 1) *graduation requirements*; 2) *program requirements*; 3) *academic and career preparation*; and 4) *personal and/or career interests.*

The career information that follows highlights examples of careers which have favorable projections growth and job availability in the year 2020 and require post-secondary education. Careers are organized by career cluster. (Source:

AGRICULTURE, FOOD, AND NATURAL RESOURCES

The agricultural, food and natural resources industries prepare learners for careers in the planning, implementation, production, processing and/or marketing of agricultural commodities including food, fiber, wood products, natural resources, horticulture, and other plant and animal products.

CAREERS	Employment Projections		Average Salary		Education
	VA	US	VA	US	
Food Scientist and Technologist	Faster than average	Faster than average	$60,200	$44,400	Bachelor's Degree
Environmental Engineer	Much faster than average	Much faster than average	$79,200	$78,700	Bachelor's Degree
Veterinarian	Much faster than average	Much faster than average	$87,000	$82,000	Doctoral/Professional Degree

ARCHITECTURE AND CONSTRUCTION

The architecture and construction career cluster prepare learners for careers for designing, planning, managing, building, processing and maintaining the site environment.

CAREERS	Employment Projections		Average Salary		Education
	VA	US	VA	US	
Architect	Faster than average	Faster than average	$71,800	$72,600	Bachelor's Degree
Civil Engineer	Much faster than average	Much faster than average	$76,800	$77,600	Bachelor's Degree
Construction Manager	Much faster than average	Much faster than average	$83,700	$83,900	Bachelor's Degree
Landscape Architect	Faster than average	Much faster than average	$55,300	$62,000	Bachelor's Degree

ART, AUDIO/VISUAL TECHNOLOGY AND COMMUNICATIONS

The arts, audio-video technology, and communications careers are divided into six pathways: audio and visual technology and film: journalism and broadcasting; performing arts; printing technology and design; and entertainment services

CAREERS	Employment Projections		Average Salary		Education
	VA	US	VA	US	
Actor/Actress	Faster than average	Average	$15+ per hour	$17+ per hour	Varies
Graphic Designer	Faster than average	Average	$47,200	$43,500	Bachelor's Degree
Photographer	Faster than average	Average	$33,200	$29,100	Varies
Reporter/Correspondent	Slower than average	Average	$35,900	$34,500	Bachelor's Degree

Writer and Author	Much faster than average	Faster than average	$56,900	$55,400	Bachelor's Degree

BUSINESS, MANAGEMENT, AND ADMINISTRATION					
There are six pathways in this cluster: Management; Financial Management and Accounting; Human Resources; Business Analysis; Marketing; and Administration and Information Support. These careers encompass planning, organizing, directing and evaluating business operations found in every sector of the economy.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Accountant	Much faster than average	Much faster than average	$65,600	$61,700	Bachelor's Degree
Financial Manager	Average	Average	$114,100	$103,900	Bachelor's Degree
Management Analyst	Much faster than average	Much faster than average	$89,600	$78,200	Bachelor's Degree
Public Relations Specialist	Much faster than average	Much faster than average	$60,200	$52,100	Bachelor's Degree
Training and Development Specialist	Much faster than average	Much faster than average	$57,400	$54,200	Bachelor's Degree

EDUCATION AND TRAINING					
The careers in this cluster include: teaching and training; professional support services and administration. Education and training occupations involve planning, managing and providing education, training and related learning support.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Curator	Much faster than average	Much faster than average	$50,200	$48,500	Master's Degree
Instructional Coordinator	Much faster than average	Much faster than average	$65,600	$58,800	Master's Degree
Librarian	Faster than average	Average	$59,700	$54,500	Master's Degree
Nursing Instructor	Much faster than average	Much faster than average	$59,800	$62,400	Doctoral/ Professional Degree
Teacher, Elementary	Much faster than average	Faster than average	$53,100	$51,600	Bachelor's Degree
Teacher, Secondary	Faster than average	Average	$54,800	$53,200	Bachelor's Degree

FINANCE					
Careers in the financial industry are found in financial and investment planning, business financial management, banking and insurance services.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Actuary	Much faster than average	Much faster than average	$88,400	$87,700	Bachelor's Degree
Financial Analyst	Much faster than average	Much faster than average	$73,900	$74,300	Bachelor's Degree
Personal Financial Advisor	Much faster than average	Much faster than average	$74,700	$64,800	Bachelor's Degree
Securities and Commodities Trader	Faster than average	Average	$54,500	$56,200	Bachelor's Degree

GOVERNMENT AND PUBLIC ADMINSTRATION					
Careers in this cluster fall into seven areas: governance; national security; foreign service; planning; revenue and taxation; regulation and public management and administration.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Climate Change Analyst	Much faster than average	Much faster than average	$69,200	$61,700	Master's Degree
Economist	Faster than average	Slower than average	$111,100	$89,500	Master's Degree
Urban and Regional Planner	Much faster than average	Faster than average	$59,200	$63,000	Master's Degree

HEALTH SCIENCES					
Careers in this cluster fall into five areas: therapeutic services; diagnostic services; health informatics; support services and biotechnology research and development.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Biomedical Engineer	Much faster than average	Much faster than average	$69,700	$81,500	Bachelor's Degree
Dentist	Faster than average	Faster than average	$166,400	$141,000	Doctoral/ Professional Degree
Occupational Therapist	Much faster than average	Much faster than average	$79,200	$72,300	Master's Degree
Pharmacist	Faster than average	Faster than average	$116,100	$111,600	Master's Degree
Physician Assistant	Much faster than average	Much faster than average	$74,300	$86,400	Master's Degree
Physician, General Practitioner	Much faster than average	Much faster than average	$149,700	$163,500	Doctoral/ Professional Degree
Physician, Specialist *(Allergists, Immunologists, Dermatologists, Neurologists, Ophthalmologists, Pathologists)*	Much faster than average	Much faster than average	$187,200	$187,200	Doctoral/ Professional Degree
Recreational Therapist	Much faster than average	Faster than average	$36,500	$39,400	Bachelor's Degree
Registered Nurse	Much faster than average	Much faster than average	$62,600	$64,700	Associates or Bachelor's Degree

HUMAN SERVICES					
People working in this cluster are employed in these areas: early childhood development, counseling and mental health services, family and community services, personal care services and consumer services.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Child, Family and School Social Worker	Much faster than average	Average	$41,900	$40,200	Bachelor's Degree
Clergy	Much faster than average	Average	$36,500	$44,000	Master's Degree
Industrial Organizational Psychologist	Much faster than average	Much faster than average	$88,600	$87,300	Master's Degree
Mental Health Counselor	Much faster than average	Much faster than average	$42,800	$38,100	Master's Degree

INFORMATION TECHNOLOGY					
Occupations in this cluster include: network systems, information support and services, programming and software development or interactive media.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Computer and Information Systems Manager	Much faster than average	Much faster than average	$133,000	$115,800	Bachelor's Degree
Computer Systems Analyst	Much faster than average	Much faster than average	$90,000	$77,700	Bachelor's Degree
Database Administrator	Much faster than average	Much faster than average	$81,700	$73,500	Bachelor's Degree
Information Security Analyst	Much faster than average	Much faster than average	$83,100	$75,700	Bachelor's Degree
Network Administrator	Much faster than average	Much faster than average	$77,300	$69,200	Bachelor's Degree

LAW, PUBLIC SAFETY, CORRECTIONS, and SECURITY					
Occupations in this cluster are found in correction services, emergency and fire management services, service protection, law enforcement and legal services.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Emergency Management Director	Much faster than average	Much faster than average	$72,800	$115,200	Experience, Long Term on the job training
Fire Fighter	Much faster than average	Faster than average	$46,100	$45,300	Long Term on the job training
Forensic Science Technician	Much faster than average	Much faster than average	$65,000	$51,600	Bachelor's Degree
Lawyer	Faster than average	Average	$123,700	$113,000	Bachelor's Degree
Paralegal	Faster than average	Faster than average	$45,700	$47,000	Associates Degree

MANUFACTURING					
Occupations in this cluster are found in: production, manufacturing product process development, maintenance, installation and repair, quality assurance, logistics and inventory control.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Mechanical Engineering Technician	Little Change	Little Change	$50,200	$50,100	Associates Degree
Medical Equipment Repair	Much faster than average	Much faster than average	$41,700	$44,500	Associates Degree
Security & Fire Alarm Installer	Much faster than average	Much faster than average	$39,000	$38,500	Associates Degree

MARKETING, SALES and SERVICE					
Occupations in this cluster are found in: management and entrepreneurship, professional sales and marketing, buying and merchandising, marketing and communications, distribution and logistics and e-marketing.					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Fashion Designer	Little Change	Little Change	$35,900	$64,500	Associates Degree
Market Research Analyst	Much faster than average	Much faster than average	$59,800	$61,000	Bachelor's Degree
Real Estate Agent	Faster than	Faster than	$41,200	$40,000	Specialized

	average	average			Training

SCIENCE, TECHNOLOGY, ENGINEERING and MATHEMATICS					
CAREERS	**Employment Projections**		**Average Salary**		**Education**
	VA	**US**	**VA**	**US**	
Anthropologist	Much faster than average	Much faster than average	$42,900	$54,200	Master's Degree
Biological Scientist	Much faster than average	Faster than average	$71,200	$68,200	Doctoral Degree
Geodetic Surveyors	Faster than average	Faster than average	$49,900	$56,200	Bachelor's Degree
Geographer	Much faster than average	Much faster than average	$92,000	$72,800	Master's Degree
Hydrologist	Much faster than average	Faster than average	$103,000	$75,700	Master's Degree
Industrial Engineer	Much faster than average	Faster than average	$75,500	$76,100	Bachelor's Degree
Mathematician	Faster than average	Much faster than average	$102,700	$99,400	Doctoral Degree
Technical Writer	Much faster than average	Faster than average	$72,600	$63,300	Bachelor's Degree

Other Resources for Career Information

BigFuture™ by the College Board
https://bigfuture.collegeboard.org/

College View
http://www.collegeview.com/careers/index.jsp

Federal Jobs by College Major
http://www.ars.usda.gov/SP2UserFiles/Place/54000000/CREEODiversity/Federal%20Jobs%20by%20College%20Major.pdf

Occupational Outlook Employment Projections 2010-2020
http://www.bls.gov/news.release/ecopro.toc.htm

O*Net Online – American Job Center Network
http://www.onetonline.org/

ACADEMIC PLANNING for SPECIFIC CAREER GOALS

Shenandoah Valley Governor's School offers students many different options in addition to the variety of courses available at their home high school. It is important for *both prospective and current students* to be well informed about their academic options and how they relate to various career paths. Academic choices should reflect 1) *graduation requirements*; 2) *program requirements*; 3) *academic and career preparation*; and 4) *personal and/or career interests.*

To assist students in relating academic choices to career and postsecondary goals, several "Tentative Plan of Study with SVGS Enrollment" are provided as a possible roadmap describing career paths for: *architecture, business, engineering, finance, graphic design, nursing, performing arts, and veterinary medicine.*

REMEMBER:

1. *These are guidelines and "tentative" plans*. Students will continue to develop their interests and career goals as they move through each grade level and have additional academic and personal experiences which will continue to help define their interests.

2. *There are multiple pathways to a successful career in all areas.* The programs of study presented in this document are one option.

3. *Specific, clear and challenging goals can often be motivating and improve performance.* Encourage students reflect on their interests or new experiences, identify their strengths and areas for growth and explore career information. Students who have specific goals or have extensive experiences in areas of interest are more likely to develop significant career goals and direction.

4. *For true and persistently multitalented students, finding a clear career path may be challenging.* Many gifted students have the ability to succeed in multiple areas. Multi-potentiality, or "having potential to make significant contributions in two or more domains", can be somewhat problematic for a gifted college student, as students are advised to choose a major and enter a career field based on their strengths in a particular area. These students may feel scattered and unfocused when they can't find a specific career that combines their unique talents. Encourage students to extensively explore a wide range of experiences based on their talents. Their career path will likely be a unique, individualized and a creative synthesis of their talents such as entrepreneurship.

ARCHITECTURE

Tentative Plan of Study with SVGS Enrollment

The purpose of this plan is to provide students and parents guidelines for making academic choices related to post-secondary and career goals. These are recommendations intended to best prepare students attending SVGS for a specific area of study.

This Plan of Study has been adapted from Virginia Department of Education Programs/Plans of Study. For more information, see http://www.doe.virginia.gov/instruction/career_technical/career_clusters/plans_of_study/index.shtml.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics			Science	Social Studies/ Science	Other Required Courses	Recommended Elective Courses
MIDDLE	6	English 6	Math 6	Math 6	Pre-Algebra	Science 6	U S History I		Art, Technology Any Exploratory
	7	English 7	Math 7	Math 7	Algebra I	Life Science	U S History II		Art, Technology Any Exploratory
	8	English 8	Algebra I	Algebra I	Geometry	Physical Science	Civics & Economics	For. Lang. I	Art, Technology Any Exploratory
HIGH SCHOOL	9	English 9 (9A, Honors)	Geometry	Geometry, Algebra II/Trig	Algebra II/Trig, Pre Calculus	Earth Sciences, Biology	World Geography	PE 9 For. Lang. II	Art Computer Applications Basic Technical Drawing Technology
	10	English 10 (10A, Honors)	Algebra II/Trig	Pre Calculus	Statistics (AP/DE)	Biology (Honors/AP/DE)	World History	PE 10 For. Lang. III Economics & Personal Finance	Art, Computer Applications Engineering Graphics Technology For. Lang. IV Adv. Composition
	11 SVGS AH	Humanities I(DE) (English 11)	Pre Calculus	Calculus* (AP, DE)	Calculus* (AP, DE)	Chemistry (Honors/AP/DE)	US/VA History (AP)		Studio Art II(AP) Survey of World Art II Crafts & Skills II Advanced Technical Drawing
	11 SVGS STEM	English 11 (11AA,Honors/ AP/DE)	Pre Calculus	Calculus* (AP, DE)	Calculus* (AP, DE)	Physics DE	US/VA History (AP)		For. Lang. IV Adv. Composition Advanced Technical Drawing Scientific Research/Engineering I
	12 SVGS AH	Humanities II (DE) (English 12)	Calculus (AP, DE)	AP Statistics	AP Statistics	Physics	US/VA Government (AP)		Studio Art II(AP) Survey of World Art II Crafts & Skills II Mentorship
	12 SVGS STEM	English 12 (Honors/AP/DE)	Calculus (AP, DE)	AP Statistics Adv. Calculus- Multivariate or Diff. Eq.	AP Statistics Adv. Calculus- Multivariate or Diff. Eq.	AP Chemistry AP Environmental Science Molecular Biology(DE)	US/VA Government (AP)		AP Computer Science Adv. Technology Geospatial Information Systems Science Elective Mentorship

KEY
AP – Advanced Placement
DE – Dual Enrollment
Courses/Activities listed in "red" are available at SVGS

NOTES
10th - Take PSAT in Fall, Apply to SVGS in Spring
11th – Take PSAT in Fall, Take SAT or ACT in spring
12th - Take SAT/ACT in Fall

ACTIVITIES
HS –TSA, NAHS
SVGS – Robotics,Scientific Research – VJAS, science fairs

SUMMER PROGRAMS
Summer Residential Governors School, Internship/Co-op/Job Shadowing
For more information, contact your school counselor.

COLLEGE

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
(The course listed below represent typical degree requirements for this area of study.
College credits earned through dual-enrollment and AP courses in high school may transfer and meet these requirements.)

	GENERAL EDUCATION REQUIREMENTS			DEGREE REQUIREMENTS for MAJOR in ARCHITECTURE			OTHER
Year 1	English Composition I & II	Social Science Elective	Ethics, Communication	Geometry of Design	Physics	Architecture Design Lab CAAD/Visualization	
Year 2	English Literature Elective	Social Science Elective	Global Issues, Technology	History of Architecture	Material Science Construction Science	Architecture I, II	
Year 3	Other Gen. Ed. Requirements	Electives of Interest	Major Electives	Building Assemblies, Structural Design	Architecture III, IV	Internship, Co-op, Travel Abroad, Independent Research	
Year 4	Other Gen. Ed. Requirements	Electives of Interest	Major Electives	Building Analysis	Major Electives	Internship, Co-op, Travel Abroad, Independent Research	

COLLEGE

University/College:

Degree or Major: **ARCHITECTURE**

Number of Possible Articulated Credits*: ***CAUTION: Please note each university/college differs in how they accept or award credit for high school dual enrollment or AP courses. Be sure to review the policies for high school/ transfer credits with the college admission office of each institution. The information provided below represents the least restrictive requirements and typical policies.***

From SVGS AH –	College Requirements
Calculus(AP or DE)	Calculus I & II
AP Chemistry	Chemistry I & II
AP Environmental Science	Science Elective
Molecular Biology(DE)	Science Elective
Physics(DE)	Science Elective or Physics I
AP Computer Science	Intro to Computer Programming
Engineering II (DE)	Elective or Intro to Engineering
Geospatial Information Systems(DE)	Social Science or Technology Elective
	English Composition I & II
Humanities I DE	
Humanities II DE	English Literature
Studio Art II(AP)	Fine Arts Elective or Introductory Course for Major
Survey of World Art I(DE)	Art History I
Survey of World Art II(DE)	Art History II

From High School – Varies by School	College Requirements
AP English Language or English Composition DE	English Composition I & II
AP English Literature	English Literature
AP History/Government	Social Science Elective
AP Psychology	Social Science Elective
AP/DE Science	Science Elective
AP Studio Art/AP Music Theory	Fine Arts Elective

Notes:

The college program noted above reflects basic requirements of most architecture programs and is presented as an example.
FOR THE COLLEGES/UNIVERSITIES YOU ARE INTERESTED IN ATTENDING, PLEASE REVIEW THEIR ENGINEERING PROGRAMS AND THEIR REQUIREMENTS FOR ADMISSIONS!!!
Programs vary greatly by institution and by type of degree.

COMPUTER SCIENCE ENGINEERING

Tentative Plan of Study with SVGS Enrollment

The purpose of this plan is to provide students and parents guidelines for making academic choices related to post-secondary and career goals. These are recommendations intended to best prepare students attending SVGS for a specific area of study.

This Plan of Study has been adapted from Virginia Department of Education Programs/Plans of Study. For more information, see http://www.doe.virginia.gov/instruction/career_technical/career_clusters/plans_of_study/index.shtml.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics			Science	Social Studies/ Science	Other Required Courses	Recommended Elective Courses
MIDDLE	6	English 6	Math 6	Math 6	Pre-Algebra	Science 6	U S History I		Any
	7	English 7	Math 7	Math 7	Algebra I	Life Science	U S History II		Any
	8	English 8	Algebra I	Algebra I	Geometry	Physical Science	Civics & Economics	For. Lang. I	Any
HIGH SCHOOL	9	English 9(9A, Honors)	Geometry,	Geometry, Algebra II/Trig	Algebra II/Trig, Pre Calculus	Earth Sciences, Biology	World Geography	PE 9, For. Lang. II	Agriculture Computer Applications
	10	English 10(10A, Honors)	Algebra II/Trig	Pre Calculus	Statistics (AP/DE)	Biology, Chemistry (AP/DE)	World History	PE 10 For. Lang. III Economics & Personal Finance	Agriculture Nutrition/Wellness For. Lang. IV Adv. Composition
	11 SVGS STEM	English 11 (11AA,Honors/AP/ DE)	Pre Calculus	Calculus* (AP, DE)	Calculus* (AP, DE)	Physics DE	US/VA History (AP)		Agriculture Athletic Training For. Lang. IV Adv. Composition Scientific Research/Engineering I
	12 SVGS STEM	English 12 (Honors/AP/DE)	Calculus (AP, DE)	Discrete Math(DE)	Adv. Calculus- (Multivariate or Diff. Eq.)	AP Chemistry AP Environmental Science Molecular Biology(DE)	US/VA Government (AP)		Agriculture AP Computer Science Computer Networking & Security Mentorship

KEY
AP – Advanced Placement
DE – Dual Enrollment
Courses/Activities listed in "red" are available at SVGS.

NOTES
10th - Take PSAT in Fall, Apply to SVGS in Spring
11th – Take PSAT in Fall, Take SAT or ACT in spring
12th - Take SAT/ACT in Fall

ACTIVITIES
HS - FFA, FCCLA
SVGS – Scientific Research, Science Fairs

SUMMER PROGRAMS
Summer Residential Governors School, Internship/Co-op/Job Shadowing
For more information, contact your school counselor.

COLLEGE

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY

(The courses listed below represent typical degree requirements for this area of study.
College credits earned through dual-enrollment and AP courses in high school may transfer and meet some of these requirements.)

	GENERAL EDUCATION REQUIREMENTS			DEGREE REQUIREMENTS for MAJOR in COMPUTER SCIENCE			OTHER
Year 1	English Composition I & II	Social Science Elective	Ethics, Communication	Calculus I,II Linear Algebra Vector Geometry	Chemistry Physics	Intro to Engineering Software Design Media Computation	
Year 2	English Literature Elective	Social Science Elective	Global Issues, Technology	Multivariable Calculus Discrete Math	Science Elective Computer Organization	Software/Design Structures	
Year 3	Other Gen. Ed. Requirements	Electives of Interest		Differential Equations Combinatorics	Data Structures/Algorithms Comparative Languages	Major Electives	Internship, Co-op, Travel Abroad, Independent Research
Year 4	Other Gen. Ed. Requirements	Electives of Interest		Statistics	Technical Writing	Major Electives	Internship, Co-op, Travel Abroad, Independent Research

COLLEGE

University/College:

Degree or Major: **COMPUTER SCIENCE**

Number of Possible Articulated Credits*: ***CAUTION: Please note each university/college differs in how they accept or award credit for high school dual enrollment or AP courses. Be sure to review the policies for high school/ transfer credits with the college admission office of each institution. The information provided below represents the least restrictive requirements and typical policies.***

From SVGS AH – 12 college credits(approx. 4 classes)	College Requirements
Calculus(AP or DE)	Calculus I & II
AP Statistics	Statistics
Discrete Math(DE)	Discrete Math
AP Chemistry	Chemistry I & II
AP Environmental Science	Science Elective
Molecular Biology(DE)	Science Elective
Physics(DE)	Physics I, II
AP Computer Science	Intro to Computer Programming
Engineering II (DE)	Elective or Intro to Engineering
Geospatial Information Systems(DE)	Social Science or Technology Elective

From High School – Varies by School	College Requirements
AP English Language or English Composition DE	English Composition I & II
AP English Literature	English Literature
AP History/Government	Social Science Elective
AP Psychology	Social Science Elective
AP/DE Science	Science Elective
AP Studio Art/AP Music Theory	Fine Arts Elective

Notes:

FOR THE COLLEGES/UNIVERSITIES YOU ARE INTERESTED IN ATTENDING, PLEASE REVIEW THEIR BUSINESS PROGRAMS AND THEIR REQUIREMENTS FOR ADMISSIONS!!!

Programs vary greatly by institution and by type of degree.

ENGINEERING

Tentative Plan of Study with SVGS Enrollment

The purpose of this plan is to provide students and parents guidelines for making academic choices related to post-secondary and career goals. These are recommendations intended to best prepare students attending SVGS for a specific area of study.

This Plan of Study has been adapted from Virginia Department of Education Programs/Plans of Study. For more information, see http://www.doe.virginia.gov/instruction/career_technical/career_clusters/plans_of_study/index.shtml.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics			Science	Social Studies/ Science	Other Required Courses	Recommended Elective Courses
MIDDLE	6	English 6	Math 6	Math 6	Pre-Algebra	Science 6	U S History I		Any
	7	English 7	Math 7	Math 7	Algebra I	Life Science	U S History II		Any
	8	English 8	Algebra I	Algebra I	Geometry	Physical Science	Civics & Economics	For. Lang. I	Any
HIGH SCHOOL	9	English 9(9A, Honors)	Geometry,	Geometry, Algebra II/Trig	Algebra II/Trig, Pre Calculus	Earth Sciences, Biology	World Geography	PE 9, For. Lang. II	Technology/ Manufacturing Technical Drawing, Computer Applications
	10	English 10(10A, Honors)	Algebra II/Trig	Pre Calculus	Statistics (AP/DE)	Biology, Chemistry (AP/DE)	World History	PE 10 For. Lang. III Economics & Personal Finance	Technology/ Manufacturing Technical Drawing Computer Info. Systems For. Lang. IV Adv. Composition
	11 SVGS STEM	English 11 (11AA,Honors/AP/ DE)	Pre Calculus	Calculus* (AP, DE)	Calculus* (AP, DE)	Physics DE	US/VA History (AP)		For. Lang. IV Adv. Composition Scientific Research/Engineering I
	12 SVGS STEM	English 12 (Honors/AP/DE)	Calculus (AP, DE)	Adv. Calculus- (Multivariate or Diff. Eq.) AP Statistics	Adv. Calculus- (Multivariate or Diff. Eq.) AP Statistics	AP Chemistry Modern Physics AP Environmental Science Molecular Biology(DE)	US/VA Government (AP)		AP Computer Science Computer Networking & Security Engineering II (DE) Geospatial Information Systems(DE) Mentorship

KEY
AP – Advanced Placement
DE – Dual Enrollment
Courses/Activities listed in "red" are available at SVGS.

NOTES
10th - Take PSAT in Fall, Apply to SVGS in Spring
11th – Take PSAT in Fall, Take SAT or ACT in spring
12th - Take SAT/ACT in Fall

ACTIVITIES
HS - TSA, FFA, CAD
SVGS – Electric Vehicle , Robotics, Research

SUMMER PROGRAMS
NASA, Summer Residential Governors School, Internship/Co-op/Job Shadowing
For more information, contact your school counselor.

COLLEGE

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
(The courses listed below represent typical degree requirements for this area of study.
College credits earned through dual-enrollment and AP courses in high school may transfer and meet some of these requirements.)

	GENERAL EDUCATION REQUIREMENTS			DEGREE REQUIREMENTS for MAJOR in ENGINEERING			OTHER
Year 1	English Composition I & II	Social Science Elective	Ethics, Communication	Calculus I,II Linear Algebra Vector Geometry	Chemistry, Physics I	Computer Programming	
Year 2	English Literature Elective	Social Science Elective	Global Issues, Technology	Multivariable Calculus Statistics Differential Equations	Physics II, Materials Science	Statics, Thermodynamics	
Year 3	Other Gen. Ed. Requirements	Electives of Interest		Math Elective	Experimental & Research Methods Lab	Design I & II	Internship, Co-op, Travel Abroad, Independent Research
Year 4	Other Gen. Ed. Requirements	Electives of Interest		Engineering Electives	Engineering Electives	Engineering Electives	Internship, Co-op, Travel Abroad, Independent Research

COLLEGE

University/College:
Degree or Major: **ENGINEERING**
Number of Possible Articulated Credits*: ***CAUTION: Please note each university/college differs in how they accept or award credit for high school dual enrollment or AP courses. Be sure to review the policies for high school/ transfer credits with the college admission office of each institution. The information provided below represents the least restrictive requirements and typical policies.***

From SVGS AH – 12 college credits(approx. 4 classes)	College Requirements
Calculus(AP or DE)	Calculus I & II
AP Chemistry	Chemistry I & II
AP Environmental Science	Science Elective
Molecular Biology(DE)	Science Elective
Physics(DE)	Science Elective or Physics I
AP Computer Science	Intro to Computer Programming
Engineering II (DE)	Elective or Intro to Engineering
Geospatial Information Systems(DE)	Social Science or Technology Elective

From High School – Varies by School	College Requirements
AP English Language or English Composition DE	English Composition I & II
AP English Literature	English Literature
AP History/Government	Social Science Elective
AP Psychology	Social Science Elective
AP/DE Science	Science Elective
AP Studio Art/AP Music Theory	Fine Arts Elective

Notes:
The college engineering program noted above reflects basic engineering requirements of most programs and is presented as an example. Engineering electives are those courses related to a specific field of engineering(aeronautical, biomedical, civil, computer, electrical, mechanical, etc.).

FOR THE COLLEGES/UNIVERSITIES YOU ARE INTERESTED IN ATTENDING, PLEASE REVIEW THEIR ENGINEERING PROGRAMS AND THEIR REQUIREMENTS FOR ADMISSIONS!!! Programs vary greatly by institution and by type of engineering degree.

FINANCE

Tentative Plan of Study with SVGS Enrollment

The purpose of this plan is to provide students and parents guidelines for making academic choices related to post-secondary and career goals. These are recommendations intended to best prepare students attending SVGS for a specific area of study.

This Plan of Study has been adapted from Virginia Department of Education Programs/Plans of Study. For more information, see http://www.doe.virginia.gov/instruction/career_technical/career_clusters/plans_of_study/index.shtml.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics			Science	Social Studies/ Science	Other Required Courses	Recommended Elective Courses
MIDDLE	6	English 6	Math 6	Math 6	Pre-Algebra	Science 6	U S History I		Any
	7	English 7	Math 7	Math 7	Algebra I	Life Science	U S History II		Any
	8	English 8	Algebra I	Algebra I	Geometry	Physical Science	Civics & Economics	For. Lang. I	Any
HIGH SCHOOL	9	English 9(9A, Honors)	Geometry,	Geometry, Algebra II/Trig	Algebra II/Trig, Pre Calculus	Earth Sciences, Biology	World Geography	PE 9, For. Lang. II	Agriculture Computer Applications
	10	English 10(10A, Honors)	Algebra II/Trig	Pre Calculus	Statistics (AP/DE)	Biology, Chemistry (AP/DE)	World History	PE 10 For. Lang. III Economics & Personal Finance	Agriculture Nutrition/Wellness For. Lang. IV Adv. Composition
	11 SVGS STEM	English 11 (11AA,Honors/AP/ DE)	Pre Calculus	Calculus* (AP, DE)	Calculus* (AP, DE)	Physics DE	US/VA History (AP)		Agriculture Athletic Training For. Lang. IV Adv. Composition Scientific Research/Engineering I
	12 SVGS STEM	English 12 (Honors/AP/DE)	Calculus (AP, DE)	AP Statistics	Adv. Calculus- (Multivariate or Diff. Eq.)	AP Chemistry AP Environmental Science Molecular Biology(DE)	US/VA Government (AP)		Agriculture Advanced Technology AP Computer Science Computer Networking & Security Geospatial Information Systems(DE) Mentorship

KEY
AP – Advanced Placement
DE – Dual Enrollment
Courses/Activities listed in "red" are available at SVGS.

NOTES
10th - Take PSAT in Fall, Apply to SVGS in Spring
11th – Take PSAT in Fall, Take SAT or ACT in spring
12th - Take SAT/ACT in Fall

ACTIVITIES
HS - FFA, FCCLA
SVGS – Scientific Research, Science Fairs

SUMMER PROGRAMS
Summer Residential Governors School, Internship/Co-op/Job Shadowing
For more information, contact your school counselor.

COLLEGE

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY

(The courses listed below represent typical degree requirements for this area of study.
College credits earned through dual-enrollment and AP courses in high school may transfer and meet some of these requirements.)

	GENERAL EDUCATION REQUIREMENTS			DEGREE REQUIREMENTS for MAJOR in Finance			OTHER
Year 1	English Composition I & II	Social Science Elective	Ethics, Communication	Calculus I,II	Microeconomics Macroeconomics	Accounting I	
Year 2	English Literature Elective	Social Science Elective	Global Issues, Technology	Statistics	Business Applications Financial Management	Marketing	
Year 3	Other Gen. Ed. Requirements	Electives of Interest		Information Technology	Organizational Management Business Law	Major Electives	Internship, Co-op, Travel Abroad, Independent Research
Year 4	Other Gen. Ed. Requirements	Electives of Interest		Portfolio Management	Money/Debt Markets Corporate Financial Strategy International Finance	Major Electives	Internship, Co-op, Travel Abroad, Independent Research

COLLEGE

University/College:

Degree or Major: **FINANCE**

Number of Possible Articulated Credits*: ***CAUTION: Please note each university/college differs in how they accept or award credit for high school dual enrollment or AP courses. Be sure to review the policies for high school/ transfer credits with the college admission office of each institution. The information provided below represents the least restrictive requirements and typical policies.***

From SVGS AH – 12 college credits(approx. 4 classes)	College Requirements
Calculus(AP or DE)	Calculus I & II
AP Statistics	Statistics
AP Chemistry	Chemistry I & II
AP Environmental Science	Science Elective
Molecular Biology(DE)	Science Elective
Physics(DE)	Physics I, II
AP Computer Science	Intro to Computer Programming
Engineering II (DE)	Elective or Intro to Engineering
Geospatial Information Systems(DE)	Social Science or Technology Elective

From High School – Varies by School	College Requirements
AP English Language or English Composition DE	English Composition I & II
AP English Literature	English Literature
AP History/Government	Social Science Elective
AP Psychology	Social Science Elective
AP/DE Science	Science Elective
AP Studio Art/AP Music Theory	Fine Arts Elective

Notes:

FOR THE COLLEGES/UNIVERSITIES YOU ARE INTERESTED IN ATTENDING, PLEASE REVIEW THEIR BUSINESS PROGRAMS AND THEIR REQUIREMENTS FOR ADMISSIONS!!!

Programs vary greatly by institution and by type of degree.

GRAPHIC DESIGN

Tentative Plan of Study with SVGS Enrollment

The purpose of this plan is to provide students and parents guidelines for making academic choices related to post-secondary and career goals. These are recommendations intended to best prepare students attending SVGS for a specific area of study.

This Plan of Study has been adapted from Virginia Department of Education Programs/Plans of Study. For more information, see http://www.doe.virginia.gov/instruction/career_technical/career_clusters/plans_of_study/index.shtml.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics			Science	Social Studies/ Science	Other Required Courses	Recommended Elective Courses
MIDDLE	6	English 6	Math 6	Math 6	Pre-Algebra	Science 6	U S History I		Art, Technology Any Exploratory
	7	English 7	Math 7	Math 7	Algebra I	Life Science	U S History II		Art, Technology Any Exploratory
	8	English 8	Math 8 Alg. I Pt. I	Algebra I	Geometry	Physical Science	Civics & Economics	For. Lang. I	Art, Technology Any Exploratory
HIGH SCHOOL	9	English 9 (9A, Honors)	Alg. I Pt. II Algebra I Alg. I Pt. I, II	Geometry Geometry Pt. I, II	Algebra II/Trig, Pre Calculus	Earth Sciences, Biology	World Geography	PE 9 For. Lang. II	Art Computer Applications Basic Technical Drawing Technology
	10	English 10 (10A, Honors)	Geometry Geometry Pt. I, II	Algebra II/Trig Algebra II/Trig I,II	Pre Calculus	Biology (Honors/AP/DE)	World History	PE 10 For. Lang. III Economics & Personal Finance	Art Computer/Multimedia Engineering Graphics Technology For. Lang. IV Adv. Composition
	11 (AH)	Humanities I(DE) (English 11)	Algebra II/Trig Algebra II/Trig I,II	Pre Calculus	Calculus* (AP, DE)	Chemistry (Honors/AP/DE)	US/VA History (AP)		Studio Art I Survey of World Art I(DE) Crafts & Skills I
	12 (AH)	Humanities II (DE) (English 12)	Pre Calculus	AP Statistics	AP Statistics	Physics	US/VA Government (AP)		Studio Art II(AP) Survey of World Art II(DE) Crafts & Skills II

KEY
AP – Advanced Placement
DE – Dual Enrollment
(AH)- SVGS AH Program
Courses/Activities listed in "red" are available at SVGS.

NOTES
10th - Take PSAT in Fall, Apply to SVGS in Spring
11th – Take PSAT in Fall, Take SAT or ACT in spring
12th - Take SAT/ACT in Fall

ACTIVITIES
HS –TSA, NAHS, Band, Chorus, Theater
SVGS – Art Shows

SUMMER PROGRAMS
Summer Residential Governors School, Internship/Co-op/Job Shadowing
For more information, contact your school counselor.

COLLEGE

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
(The courses listed below represent typical degree requirements for this area of study.
College credits earned through dual-enrollment and AP courses in high school may transfer and meet some of these requirements.)

	GENERAL EDUCATION REQUIREMENTS			DEGREE REQUIREMENTS for MAJOR in GRAPHIC DESIGN			OTHER
Year 1	English Composition I & II	Social Science Elective	Science Elective	Art History I, II	Drawing Studio 2D Design 3D Design	Computer Design	
Year 2	English Literature Elective	Social Science Elective	Math Elective	Art History Elective	2D Design Elective 3D Design Elective	Typography I,II Imaging I,II	
Year 3	Other Gen. Ed. Requirements	Electives of Interest		Design & Communication	Systems and Design	Print I,II Visualization	Internship, Co-op, Travel Abroad, Independent Research
Year 4	Other Gen. Ed. Requirements	Electives of Interest		Major Electives	Major Electives	Major Electives	Internship, Co-op, Travel Abroad, Independent Research

COLLEGE

University/College:
Degree or Major: **GRAPHIC DESIGN**

Number of Possible Articulated Credits*: ***CAUTION: Please note each university/college differs in how they accept or award credit for high school dual enrollment or AP courses. Be sure to review the policies for high school/ transfer credits with the college admission office of each institution. The information provided below represents the least restrictive requirements and typical policies.***

From SVGS AH – 15 college credits(approx. 5 classes)	College Requirements
Humanities I DE	English Composition I & II
Humanities II DE	English Literature
Studio Art II(AP)	Fine Arts Elective or Introductory Course for Major
Survey of World Art I(DE)	Art History I
Survey of World Art II(DE)	Art History II

From High School – Varies by School	College Requirements
AP History/Government	Social Science Elective
AP Psychology	Social Science Elective
DE Pre-Calculus and/or DE/AP Calculus	Mathematics Elective
AP/DE Science	Science Elective
AP Music Theory	Fine Arts Elective

Notes: The college program noted above reflects basic requirements of most programs and is presented as an example. Programs vary greatly by institution and by type of arts degrees.

FOR THE COLLEGES/UNIVERSITIES YOU ARE INTERESTED IN ATTENDING, PLEASE REVIEW THEIR PROGRAMS AND THEIR REQUIREMENTS FOR ADMISSIONS!!!

NURSING

Tentative Plan of Study with SVGS Enrollment

The purpose of this plan is to provide students and parents guidelines for making academic choices related to post-secondary and career goals. These are recommendations intended to best prepare students attending SVGS for a specific area of study.

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EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics			Science	Social Studies/ Science	Other Required Courses	Recommended Elective Courses
MIDDLE	6	English 6	Math 6	Math 6	Pre-Algebra	Science 6	U S History I		Any
	7	English 7	Math 7	Math 7	Algebra I	Life Science	U S History II		Any
	8	English 8	Algebra I	Algebra I	Geometry	Physical Science	Civics & Economics	For. Lang. I	Any
HIGH SCHOOL	9	English 9(9A, Honors)	Geometry,	Geometry, Algebra II/Trig	Algebra II/Trig, Pre Calculus	Earth Sciences, Biology	World Geography	PE 9, For. Lang. II	Agriculture Computer Applications
	10	English 10(10A, Honors)	Algebra II/Trig	Pre Calculus	Statistics (AP/DE)	Biology, Chemistry (AP/DE)	World History	PE 10 For. Lang. III Economics & Personal Finance	Agriculture Nutrition/Wellness For. Lang. IV Adv. Composition
	11 SVGS STEM	English 11 (11AA,Honors/AP/ DE)	Pre Calculus	Calculus* (AP, DE)	Calculus* (AP, DE)	Physics DE	US/VA History (AP)		Agriculture Athletic Training For. Lang. IV Adv. Composition Scientific Research
	12 SVGS STEM	English 12 (Honors/AP/DE)	Calculus (AP, DE)	AP Statistics	AP Statistics	AP Chemistry Molecular Biology(DE)	US/VA Government (AP)		Agriculture Advanced Technology Geospatial Information Systems(DE) Mentorship

KEY
AP – Advanced Placement
DE – Dual Enrollment
Courses/Activities listed in "red" are available at SVGS.

NOTES
10th - Take PSAT in Fall, Apply to SVGS in Spring
11th – Take PSAT in Fall, Take SAT or ACT in spring
12th - Take SAT/ACT in Fall

ACTIVITIES
HS - FFA, FCCLA
SVGS – Scientific Research, Science Fairs

SUMMER PROGRAMS
Summer Residential Governors School, Internship/Co-op/Job Shadowing
For more information, contact your school counselor.

COLLEGE

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY

(The courses listed below represent typical degree requirements for this area of study.
College credits earned through dual-enrollment and AP courses in high school may transfer and meet some of these requirements.)

	GENERAL EDUCATION REQUIREMENTS			DEGREE REQUIREMENTS for MAJOR related to NURSING			OTHER
Year 1	English Composition I & II	Social Science Elective	Ethics, Communication	Anatomy I, Physiology I Microbiology	Chemistry	Fundamentals of Nursing	
Year 2	English Literature Elective	Social Science Elective	Global Issues, Technology	Anatomy II, Physiology II Statistics	Psychology	Health Assessment Family Care	
Year 3	Other Gen. Ed. Requirements	Electives of Interest		Pathophysiology/Clinical Management I, II	Pharmacology I,II	Research Geriatric Nursing Pediatric Nursing	Internship, Co-op, Travel Abroad, Independent Research
Year 4	Other Gen. Ed. Requirements	Electives of Interest		Major Electives	Health Policy/Regulations	Mental Health Nursing Public Health	Internship, Co-op, Travel Abroad, Independent Research

COLLEGE

University/College:

Degree or Major: **NURSING**

Number of Possible Articulated Credits*: ***CAUTION: Please note each university/college differs in how they accept or award credit for high school dual enrollment or AP courses. Be sure to review the policies for high school/ transfer credits with the college admission office of each institution. The information provided below represents the least restrictive requirements and typical policies.***

From SVGS AH – 12 college credits(approx. 4 classes)	College Requirements
Calculus(AP or DE)	Calculus I & II
AP Statistics	Statistics
AP Chemistry	Chemistry I & II
AP Environmental Science	Science Elective
Molecular Biology(DE)	Science Elective
Physics(DE)	Physics I, II
AP Computer Science	Intro to Computer Programming
Engineering II (DE)	Elective or Intro to Engineering
Geospatial Information Systems(DE)	Social Science or Technology Elective

From High School – Varies by School	College Requirements
AP English Language or English Composition DE	English Composition I & II
AP English Literature	English Literature
AP History/Government	Social Science Elective
AP Psychology	Social Science Elective
AP/DE Science	Science Elective
AP Studio Art/AP Music Theory	Fine Arts Elective

Notes:

The college program noted above reflects basic requirements for most pre-vet and pre-medical programs and is presented as an example. Major electives are those courses related to a specific major. The required courses for proficiency in the sciences are essential to understanding medicine but concentration or a major in sciences is not a requirement for admissions to vet or medical school. Pre-veterinary students often major in animal and poultry sciences, biochemistry, biological science, dairy science, or fisheries and wildlife sciences. Students who elect majors other than the biological sciences or chemistry should include advanced coursework in biology and chemistry in their undergraduate programs. Suggested electives are anatomy, genetics, microbiology and nutrition.

FOR THE COLLEGES/UNIVERSITIES YOU ARE INTERESTED IN ATTENDING, PLEASE REVIEW THEIR PRE-VET PROGRAMS AND THEIR REQUIREMENTS FOR ADMISSIONS!!!

Programs vary greatly by institution and by type of degree.

PERFORMING ARTS - THEATER

Tentative Plan of Study with SVGS Enrollment

The purpose of this plan is to provide students and parents guidelines for making academic choices related to post-secondary and career goals. These are recommendations intended to best prepare students attending SVGS for a specific area of study.

This Plan of Study has been adapted from Virginia Department of Education Programs/Plans of Study. For more information, see http://www.doe.virginia.gov/instruction/career_technical/career_clusters/plans_of_study/index.shtml.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics			Science	Social Studies/ Science	Other Required Courses	Recommended Elective Courses
MIDDLE	6	English 6	Math 6	Math 6	Pre-Algebra	Science 6	U S History I		Art, Music, Theater Any Exploratory
	7	English 7	Math 7	Math 7	Algebra I	Life Science	U S History II		Art, Music, Theater Any Exploratory
	8	English 8	Math 8 Alg. I Pt. I	Algebra I	Geometry	Physical Science	Civics & Economics	For. Lang. I	Art, Music, Theater Any Exploratory
HIGH SCHOOL	9	English 9 (9A, Honors)	Alg. I Pt. II Algebra I Alg. I Pt. I, II	Geometry Geometry Pt. I, II	Algebra II/Trig, Pre Calculus	Earth Sciences, Biology	World Geography	PE 9 For. Lang. II	Art Band Business/Personal Finance Computer Applications Chorus Theater
	10	English 10 (10A, Honors)	Geometry Geometry Pt. I, II	Algebra II/Trig Algebra II/Trig I,II	Pre Calculus	Biology (Honors/AP/DE)	World History	PE 10 For. Lang. III Economics & Personal Finance	Art Band Business/Personal Finance Computer Applications Chorus Theater For. Lang. IV Adv. Composition
	11 (AH)	Humanities I(DE) (English 11)	Algebra II/Trig Algebra II/Trig I,II	Pre Calculus	Calculus* (AP, DE)	Chemistry (Honors/AP/DE)	US/VA History (AP)		Acting I Intro to Theater(DE) Crafts & Skills I Band Chorus
	12 (AH)	Humanities II (DE) (English 12)	Pre Calculus	AP Statistics	AP Statistics	Physics	US/VA Government (AP)		Acting II Drama Theory & Criticism Crafts & Skills II Band Chorus

KEY
AP – Advanced Placement
DE – Dual Enrollment
(AH)- SVGS AH Program
Courses/Activities listed in "red" are available at SVGS.

NOTES
10th - Take PSAT in Fall, Apply to SVGS in Spring
11th – Take PSAT in Fall, Take SAT or ACT in spring
12th - Take SAT/ACT in Fall

ACTIVITIES
HS –Band, Chorus, Theater Productions
SVGS – Performances, Conferences

SUMMER PROGRAMS
Summer Residential Governors School, Internship/Co-op/Job Shadowing
For more information, contact your school counselor.

COLLEGE

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
(The courses listed below represent typical degree requirements for this area of study.
College credits earned through dual-enrollment and AP courses in high school may transfer and meet some of these requirements.)

	GENERAL EDUCATION REQUIREMENTS			DEGREE REQUIREMENTS for MAJOR in PERFORMING ARTS			OTHER
Year 1	English Composition I & II	Social Science Elective	Science Elective	Foreign Lang. I, II	Acting I,II	Stagecraft Costume Construction	
Year 2	English Literature Elective	Social Science Elective	Math Elective	Intro to Drama History of Theater	Acting III,IV	Voice & Speech I,II Movement I,II	
Year 3	Other Gen. Ed. Requirements	Electives of Interest		History of Dramatic Literature Shakespeare Plays	Major Electives	Scene Design Lighting Design	Internship, Co-op, Travel Abroad, Independent Research
Year 4	Other Gen. Ed. Requirements	Electives of Interest		Business of Theater	Major Electives	Major Electives	Internship, Co-op, Travel Abroad, Independent Research

COLLEGE

University/College:
Degree or Major: **PERFORMING ARTS - THEATER**

Number of Possible Articulated Credits*: ***CAUTION: Please note each university/college differs in how they accept or award credit for high school dual enrollment or AP courses. Be sure to review the policies for high school/ transfer credits with the college admission office of each institution. The information provided below represents the least restrictive requirements and typical policies.***

From SVGS AH – 12 college credits(approx. 4 classes)
Humanities I DE
Humanities II DE
Introduction to Theater DE

College Requirements
English Composition I & II
English Literature
Fine Arts Elective or Introductory Course for Major

From High School – Varies by School
AP English Language or English Composition DE
AP English Literature
AP History/Government
AP Psychology
DE Pre-Calculus and/or DE/AP Calculus
AP/DE Science
AP Studio Art/AP Music Theory

College Requirements
English Composition I & II
English Literature
Social Science Elective
Social Science Elective
Mathematics Elective
Science Elective
Fine Arts Elective

Notes:
The college program noted above reflects basic requirements of most programs and is presented as an example. Programs vary greatly by institution and by type of performing arts degrees.

FOR THE COLLEGES/UNIVERSITIES YOU ARE INTERESTED IN ATTENDING, PLEASE REVIEW THEIR PROGRAMS AND THEIR REQUIREMENTS FOR ADMISSIONS!!!

VETERINARIAN

Tentative Plan of Study with SVGS Enrollment

The purpose of this plan is to provide students and parents guidelines for making academic choices related to post-secondary and career goals. These are recommendations intended to best prepare students attending SVGS for a specific area of study.

This Plan of Study has been adapted from Virginia Department of Education Programs/Plans of Study. For more information, see http://www.doe.virginia.gov/instruction/career_technical/career_clusters/plans_of_study/index.shtml.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics			Science	Social Studies/ Science	Other Required Courses	Recommended Elective Courses
MIDDLE	6	English 6	Math 6	Math 6	Pre-Algebra	Science 6	U S History I		Any
	7	English 7	Math 7	Math 7	Algebra I	Life Science	U S History II		Any
	8	English 8	Algebra I	Algebra I	Geometry	Physical Science	Civics & Economics	For. Lang. I	Any
HIGH SCHOOL	9	English 9(9A, Honors)	Geometry,	Geometry, Algebra II/Trig	Algebra II/Trig, Pre Calculus	Earth Sciences, Biology	World Geography	PE 9, For. Lang. II	Agriculture Computer Applications
	10	English 10(10A, Honors)	Algebra II/Trig	Pre Calculus	Statistics (AP/DE)	Biology, Chemistry (AP/DE)	World History	PE 10 For. Lang. III Economics & Personal Finance	Agriculture Nutrition/Wellness For. Lang. IV Adv. Composition
	11 SVGS STEM	English 11 (11AA,Honors/AP/ DE)	Pre Calculus	Calculus* (AP, DE)	Calculus* (AP, DE)	Physics DE	US/VA History (AP)		Agriculture Athletic Training For. Lang. IV Adv. Composition Scientific Research/Engineering I
	12 SVGS STEM	English 12 (Honors/AP/DE)	Calculus (AP, DE)	AP Statistics	Adv. Calculus-(Multivariate or Diff. Eq.) AP Statistics	AP Chemistry AP Environmental Science Molecular Biology(DE)	US/VA Government (AP)		Agriculture Advanced Technology AP Computer Science Computer Networking & Security Engineering II (DE) Geospatial Information Systems(DE) Mentorship

KEY
AP – Advanced Placement
DE – Dual Enrollment
Courses/Activities listed in "red" are available at SVGS.

NOTES
10th - Take PSAT in Fall, Apply to SVGS in Spring
11th – Take PSAT in Fall, Take SAT or ACT in spring
12th - Take SAT/ACT in Fall

ACTIVITIES
HS - FFA, FCCLA
SVGS – Scientific Research, Science Fairs

SUMMER PROGRAMS
Summer Residential Governors School, Internship/Co-op/Job Shadowing
For more information, contact your school counselor.

COLLEGE

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY

(The courses listed below represent typical degree requirements for this area of study.
College credits earned through dual-enrollment and AP courses in high school may transfer and meet some of these requirements.)

	GENERAL EDUCATION REQUIREMENTS			DEGREE REQUIREMENTS for MAJOR related to VETERINARY SCIENCE			OTHER
Year 1	English Composition I & II	Social Science Elective	Ethics, Communication	Calculus I,II	Chemistry I,II Biology I,II	Major Electives	
Year 2	English Literature Elective	Social Science Elective	Global Issues, Technology	Statistics	Organic Chemistry	Major Electives	
Year 3	Other Gen. Ed. Requirements	Electives of Interest		Math Elective	Animal Psychology	Major Electives	Internship, Co-op, Travel Abroad, Independent Research
Year 4	Other Gen. Ed. Requirements	Electives of Interest		Major Electives	Engineering Electives	Major Electives	Internship, Co-op, Travel Abroad, Independent Research

COLLEGE

University/College:

Degree or Major: **PRE-VETERNINARY**

Number of Possible Articulated Credits*: ***CAUTION: Please note each university/college differs in how they accept or award credit for high school dual enrollment or AP courses. Be sure to review the policies for high school/ transfer credits with the college admission office of each institution. The information provided below represents the least restrictive requirements and typical policies.***

From SVGS AH – 12 college credits(approx. 4 classes)	College Requirements
Calculus(AP or DE)	Calculus I & II
AP Statistics	Statistics
AP Chemistry	Chemistry I & II
AP Environmental Science	Science Elective
Molecular Biology(DE)	Science Elective
Physics(DE)	Physics I, II
AP Computer Science	Intro to Computer Programming
Engineering II (DE)	Elective or Intro to Engineering
Geospatial Information Systems(DE)	Social Science or Technology Elective

From High School – Varies by School	College Requirements
AP English Language or English Composition DE	English Composition I & II
AP English Literature	English Literature
AP History/Government	Social Science Elective
AP Psychology	Social Science Elective
AP/DE Science	Science Elective
AP Studio Art/AP Music Theory	Fine Arts Elective

Notes:

The college program noted above reflects basic requirements for most pre-vet and pre-medical programs and is presented as an example. Major electives are those courses related to a specific major. The required courses for proficiency in the sciences are essential to understanding medicine but concentration or a major in sciences is not a requirement for admissions to vet or medical school. Pre-veterinary students often major in animal and poultry sciences, biochemistry, biological science, dairy science, or fisheries and wildlife sciences. Students who elect majors other than the biological sciences or chemistry should include advanced coursework in biology and chemistry in their undergraduate programs. Suggested electives are anatomy, genetics, microbiology and nutrition.

FOR THE COLLEGES/UNIVERSITIES YOU ARE INTERESTED IN ATTENDING, PLEASE REVIEW THEIR PRE-VET PROGRAMS AND THEIR REQUIREMENTS FOR ADMISSIONS!!!

Programs vary greatly by institution and by type of degree.

SVGS INFORMATION AND ADMISSIONS REQUIREMENTS

One of 19 Governor's Schools in the state of Virginia, the purpose of SVGS is to provide an integrated math, science and technology program and an integrated arts and humanities program in a unique environment. SVGS has programs and courses designed to meet the unique needs of advanced ability and highly motivated students. Students may attend in one of three broad curriculum areas: 1)STEM (Science, Technology, Engineering and Mathematics), 2)Visual Arts and Humanities, and 3) Theatre Arts and Humanities.

Participating school divisions receive applications from any interested sophomore or junior. Home or privately schooled students may apply through the division in which they reside. Each division has established its own policy for admission of home or privately schooled students. It is expected that those accepted are full-time public school students while in the SVGS program. Each division follows its established selection process, which includes review by school-based personnel and/or division committees. Priority is given to current full-time students in Augusta County, Staunton or Waynesboro Schools.

How To Apply

Students submit an application portfolio to the high school's guidance department. Each high school sets its own timeline and deadlines. APPLICATIONS are available after Dec. 1 on our website www.svgs.k12.va.us.

The student application portfolio must include:

- Application Form
- Activities Sheet
- Student Profile Sheet (to be completed by a Guidance Counselor)
- Transcript, current class schedule and report card
- Two Teacher Recommendations (Math and Science or English and Art or Theatre)
- One Counselor Recommendation
- **PSAT scores**
- Principal's recommendation

Science applicants also participate in:

Science reasoning test (developed by, given at and scored by SVGS)

Arts applicants also participate in:

Portfolio or performance adjudication (developed by and given at SVGS; scored by SVGS staff and area professionals)

Criteria for Admissions

Applications for students who meet the established criteria and whom the school committee feels will be successful in the program offered at the Governor's School are forwarded to a designated Central Office person for each school division. Applications are reviewed at the division level. Selection committees

recommend students for placement, for interviews, or for a waiting-list. If recommended for an interview, SVGS faculty members conduct the interview at the students' high schools. The interviewers rate the students and provide their input to school division selection committees who make the final determination. The identification/placement process follows a timeline established by each school with the student taking responsibility for gathering necessary application data and guidance personnel being responsible for informing and assisting students and parents in the application process. The high school counselor and principal, and any others they wish to include, review applications according to the criteria listed below and make a recommendation based on an overall evaluation of all components. (A school division may add additional criteria to the selection process).

Costs

SVGS is a public high school program and there is no tuition costs to attend. Class fees($10-$15) are charged for some classes in accordance with Augusta County Schools policy. Students opting to take Advanced Placement or college dual enrollment courses are responsible for those fees and tuition.

Courses

Students enrolled in Humanities I are prepared to take the SOL assessments for English 11.

The test is administered at SVGS. Scores are reported to their high schools. Some classes are offered for Advanced Placement credit. Tests are administered at SVGS. Scores are reported to the high schools for inclusion on students' official transcripts.

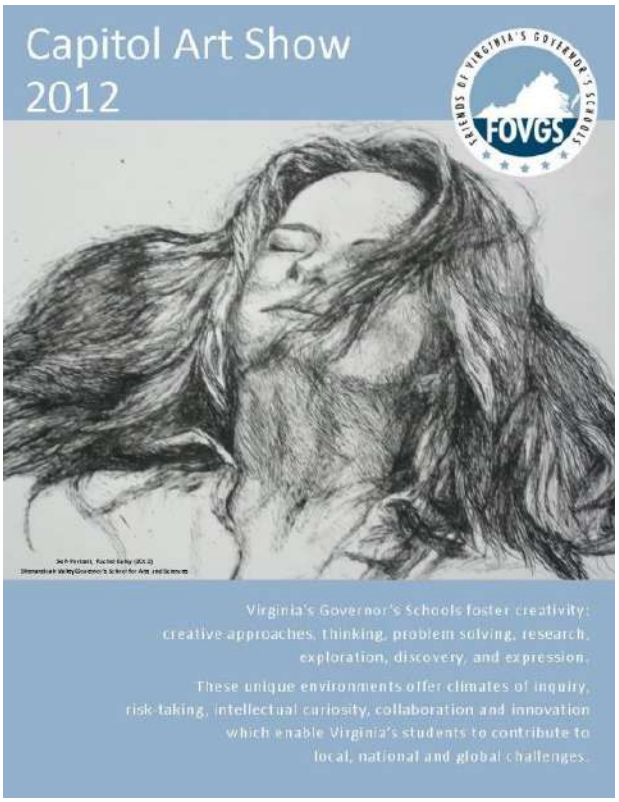
SVGS offers classes for dual enrollment credit through James Madison University, Blue Ridge Community College and University of Virginia.

JMU classes are Humanities II (HUM 200, 3 credits), Physics I (PHY140/140L, 4 credits), Physics II (PHY150/540L, 4 credits), Environmental Chemistry/AP Environmental Science (ISAT 112), Molecular and Microbiology (ISAT 113, 3 credits), Geospatial Systems (GEOG160) and Discrete Mathematics (CS/MTH 227), Survey of World Art (GARTH 205, 3 credits), Introduction to Theater (THEA210, 3 credits), and Dramatic Concepts and Criticism (THEA320, 3 credits).

BRCC classes are English 111 and 112 (3 credits each) and Calculus (MTH173/174, 5 credits each). Engineering II is a UVA class(ENGR 1520).

SVGS

ARTS & HUMANITIES



CRITERIA FOR ARTS AND HUMANITIES APPLICANTS (AH)

- Aptitude for successful study of visual or theatre arts, humanities and related disciplines (Indicators: test scores, demonstrated achievement, adjudicators assessment)
- Outstanding achievement in the areas of visual or theatre arts and humanities (Indicators: test scores, grades, awards)
- Participation in special arts and/or humanities activities (Indicators: record of activities including special summer programs, special training, performances, exhibitions, club membership, projects, job experience, community service)
- Demonstrated interest and commitment (Indicators: participation in special activities, student's chosen course of study, awards, student position statements, positive teacher/trainer recommendations)
- Appropriate program of study (Indicators: record of selection of a program of study which includes challenging arts and/or humanities courses, participation in special enrichment programs

Arts applicants also participate in:

Portfolio or performance adjudication (developed by and given at SVGS; scored by SVGS staff and area professionals). See next page for more information.

In 2013-14, there were 32 applicants(23 accepted) Arts & Humanities program.

OVERVIEW OF REQUIREMENTS FOR AUDITIONS/PORTFOLIOS

For the THEATRE PROGRAM:

Acting Audition

You will present two memorized contrasting monologues, approximately one minute each, or one monologue and an alternate activity relevant to either musical or technical theatre. "Contrasting" can be demonstrated through the character and type of material chosen, such as contemporary vs. classical, urban vs. rural, dramatic vs. comedic, etc. Find characters in your own material and emotional range and from material with which you are familiar. Do not use foreign dialects, costumes or props.

You will be required to participate in an improvisation with three (3) to five (5) other performers in addition to your monologue. The adjudicators will set up these improvisations as part of a warm-up for the group, after which your individual audition will be held.

Design/Production

You will bring examples of your work (photographs, drawings, etc) and discuss them with the adjudicators. You will participate in an improvisation activity with three (3) to five (5) other applicants. You will perform a short "hands-on" exercise with provided props and materials.

Auditions will take approximately one hour. There will be a fifteen-minute group warm-up activity for you and the other applicants. Following this will be your audition (see guidelines below) followed by a short interview. You will also be asked to perform an improvisation with other applicants.

SUCCESSFUL AUDITIONERS WILL FOLLOW THESE GUIDELINES:

Group Warm-Up: The group will play a series of theatre games. This should help you: relax and enjoy, focus and meet your fellow applicants

Audition Pieces: You must prepare two contrasting monologues (for example, comic and suspenseful)

- Time the pieces to ensure that each is about one minute long
- Choose characters close to your age
- Choose material from plays (not from poems, short stories, or novels)
- Do not wear costumes or bring props
- Memorize and rehearse your pieces

- Practice your pieces for your drama teacher, friends, and/or family
- Prepare to make adjustments (accept direction) after you have performed both pieces

Interview: Prepare to talk about the following:

- The works you chose to perform
- The process by which you prepared for the audition
- Your interest in theatre
- Your interest in attending Governor's School

Improvisation: Each applicant will be given a situation and asked to perform a short improvisation

- Wear clothes that allow for movement
- Work with your partner, not against him/her
- Relax and enjoy the experience

THE GOVERNOR'S SCHOOL STRIVES TO TRAIN WELL-ROUNDED ACTORS AND TECHNICIANS. THEREFORE, YOU WILL BE GIVEN NUMEROUS OPPORTUNITIES TO WORK IN BOTH MUSICAL AND TECHNICAL THEATRE.

If you have an interest in musical theatre, you may substitute one of the following for your second monologue:

Song: Prepare one verse of a song (approximately one minute)
Bring a tape or CD with your music (cued to your song)

Dance: Prepare one dance or movement piece (approximately one minute)
Wear appropriate dance attire and shoes
Bring a tape or CD with your music (cued to your music)

If you have an interest in technical theatre or design, you may substitute a portfolio review for your second monologue:

Portfolio: Present sketches, designs, photographs, costumes, slides, prompt books, sample properties or other evidence of your technical theatre work

OR

Present drawings, sculpture, or photography if your experience has previously been in the field of art

- Quality is more important than quantity
- Prepare to discuss your work during the interview

For the VISUAL ARTS PROGRAM:

Portfolio

You will present a portfolio of ten pieces of recent (within the last two years) artwork to the adjudicators. Variety of subject matter and media is encouraged. If available, you should include both 2-D and 3-D work. You are encouraged to present original material and drawings from life. A sketchbook should be included with your portfolio but does not count in the total of ten (10) required works.

Color slides or digital presentations of artwork may be offered in lieu of the actual piece(s) **ONLY** if size or transportation difficulties prevent your including the actual piece. You are responsible for bringing a slide projector and slide tray with your slides mounted and ready for viewing by the adjudicators.

Interview

You will have an informal, private interview and review of your work with the adjudicators during which questions may be asked about techniques and ideas demonstrated in your work. Your portfolio will be returned to you at the conclusion of the interview.

Portfolio Evaluations will take approximately twenty minutes. Portfolios should present your BEST work, NOT demonstrate development.

If you will need a computer for your portfolio, you must arrange to come to SVGS to load your portfolio prior to your adjudication date. SVGS supports both MacIntosh and Windows operating systems. SVGS will provide computer projection systems. To schedule loading your portfolio or if you have questions about the computers, please e-mail Jennifer Vaughan (vaughan@svgs.k12.va.us) or call her at 245-5088.

SUCCESSFUL PORTFOLIOS WILL FOLLOW THESE GUIDELINES:

Portfolios:

- Must contain 10 pieces of your best work
- Demonstrate your ideas and interests
- Include work in more than one medium, and both 2D and 3D if possible
- Include work that demonstrates the development of a theme
- Focus on craftsmanship, mastery of materials, and an indication of time spent to achieve a strong result
- Show originality in choice of subject, technique, and/or composition
- Original work MUST be submitted unless size or medium prevent transport. Only in this case may digital images or color slides be substituted

Portfolios should not:

- Show unfinished work or work of low quality along with work of high quality
- Bring your sketchbook.
- You should be prepared to discuss your work with the adjudicators.
- You will have a short interview during your adjudication.

SVGS ARTS & HUMANTITIES Selection Form

Fall 2014 Year

Applicant's Name: _____Current Grade Level:___

Experience/Training/Activities Points *(out of 50)*

Adjudication Score(out of 600)

Recommendations:

English Teacher (out of 60) _____

Art/Drama Teacher (out of 60) _____

Counselor (out of 40) _____

Overall recommendation (out of 60) _____

SUBTOTAL *(out of 220)*

PSAT Scores: Test Date: _____

Verbal Percentile _____x 0.2 = _____

Math Percentile _____ x 0.1 = _____

Writing Percentile _____ x 0.2 = _____

SUBTOTAL (out of 50**)**

Current GPA: (circle appropriate) **weighted** **unweighted**

*Please make "weighted" if student has taken DE or AP classes calculated in the reported GPA.
Please mark "unweighted" if the student does not have weighted grades calculated in the reported GPA.

GPA: _____ x 15 = _____

Strength of Academic Program

(Enter the appropriate number from below): _____

- Almost always most challenging courses (with one or two exceptions - available honors, AP or dual-enrollment courses) 20 points
- Usually most challenging courses (at least half of available) 15 points
- Few of the most challenging courses (one or two) 10 points

SUBTOTAL *(out of 80)*

TOTAL SCORE (out of 1000)

ARTS & HUMANITIES COURSE LIST

Course Name		College	Coll. Course No.	# of Coll. Credits
Acting I				
Acting II				
Crafts & Skills I Theater				
Crafts & Skills II Theater				
Crafts & Skills I Visual Arts				
Crafts & Skills II Visual Arts				
Drama, Theory & Criticism				
Humanities I				
Humanities I DE	DE	BRCC	ENG 111,112	3,3 = 6
Humanities II				
Humanities II DE	DE	JMU	HUM 200	3
Introduction to Theater				
Introduction to Theater DE	DE	JMU	THEA 210	3
AP Studio Art	AP			
Studio Art I				
Studio Art II				
Survey of World Art I – Pre-Historic to Renaissance				
Survey of World Art I – Pre-Historic to Renaissance DE	DE	JMU	GARTH 205	3
Survey of World Art II - Renaissance - Modern				
Survey of World Art II - Renaissance - Modern DE	DE	JMU	GARTH 206	3

*NOTE:

- ✓ Fees are set by Augusta County policy for specific classes (sciences, technology, arts & theater). Fees may be waived for students with free/reduced lunch.
- ✓ Tuition costs are set by the colleges awarding dual enrollment college credit. Tuition costs may not be waived for any reason.
- ✓ AP exams fees are set by College Board. AP exams are required for all AP classes unless there are financial considerations regarding the exam fee. Students with free/reduced lunch may qualify for exam fee reductions

ARTS & HUMANITIES COURSE SEQUENCE

Arts & Humanities students take four classes specifically designed to provide talented students an intensive program of study:

- ✓ *Humanities*
- ✓ *Appreciation/Critique*
- ✓ *Studio*
- ✓ *Crafts & Skills (a studio class with guest artists).*

SVGS Theater Arts Sequence

	ENGLISH	APPRECIATION/CRITIQUE	STUDIO
11th	**Humanities I** (DE w/ BRCC, Eng. 111 & 112, counts as English 11)	**Introduction to Theatre** (DE w/ JMU, for general education credit)	**Acting I** **Crafts & Skills I*** *(Work with professional guest artists)
12th	**Humanities II** (DE w/ JMU, for general English literature, counts as English 12)	**Drama Theory & Criticism**	**Acting II** **Crafts & Skills II**

SVGS Visual Arts Sequence

	ENGLISH	APPRECIATION/CRITIQUE	STUDIO
11th	**Humanities I** (DE w/ BRCC, Eng. 111 & 112, counts as English 11)	**Survey of World Art I** (DE w/ JMU for first semester of Art History)	**Studio Art I** **Crafts & Skills I*** *(Work with professional guest artists)
12th	**Humanities II** (DE w/ JMU, for general English literature, counts as English 12)	**Survey of World Art II** (DE w/ JMU for second semester of Art History)	**Studio Art II or AP Studio Art** **Crafts & Skills II**

ARTS & HUMANITIES COURSE DESCRIPTIONS

Overview

SVGS has programs and courses designed to meet the unique needs of gifted and highly motivated students. Students may attend in one of two curriculum areas: Theatre Arts with Humanities or Visual Arts with Humanities.

In the arts program, students take one credit in humanities and three credits from the following areas: studio, crafts and skills workshop, concepts and criticism, history, and practicum. Please see course descriptions below.

Numerous arts organizations and artists have partnered with SVGS to provide students with enrichment and extensions of the Arts and Humanities program. In particular, students and staff work with the Staunton-Augusta Art Center, Shenandoah Valley Art Center, Old Dominion Dance Studios, Dance Augusta, Stage IV, Waynesboro Players and Shenandoah Shakespeare. Many private artists have opened their homes and studios to SVGS students.

Humanities Courses

Governor's School Humanities I – Juniors connect the themes found throughout the history of American literature, theater, art and culture and explore common patterns in these different forms of expression. Students increase their understanding of the ways in which these different disciplines interact to create a uniquely American cultural and artistic heritage by reading a broad range of literary selections. In preparation for the Standards of Learning English 11 exam, students focus on basic and advanced composition skills in various subject and stylistic areas that prepare them not only for the high school classroom, but the college classroom. Students may opt to take this class for *BRCC credit (English 111 [College Composition] and 112, 3 credits each)* at their own expense.

Governor's School Humanities II -Seniors develop an overall understanding of the connections between literature, theater, and art in relation to the development of British history and culture. Students examine the ways in which themes in British and other world literature have influenced similar ideas in American culture. In preparation for graduation, students develop college entrance essays as well as hone their writing skills in other areas. Students develop their expository and technical writing skills, as well as their ability to research, write, and revise an extended research paper. Students are encouraged to combine the lessons learned in Humanities I with those learned in Humanities II to form a better understanding of the connectedness of all forms of art and culture and the resulting influences those connections may have on them as individuals. Students who have successfully completed the BRCC pre-requisites may opt to take this class for *JMU credit (HUM 200, 3 credits)* at their own expense.

Theatre Arts Courses

Governor's School Acting I – Students learn basic stage terminology, the importance of ensemble, basics of technical theatre, theatre management, rehearsal process, acting, and directing. Students will learn to give and accept constructive criticism. Students read, analyze, and respond to selected dramatic literature. Students learn to score a script using Stanislavski's Method of Physical actions. Analysis will be applied to scene and monologue studies.

Governor's School Acting II – Students will explore the incredible richness of theatrical tradition and style in a laboratory setting. Text and floor work will focus on the evolution of such major 20th century performance styles as realism, epic theatre, street theatre, musical comedy, theatre of the absurd, post-modernism, and script deconstruction. Students must have successfully completed Acting I or demonstrate exceptional talent and discipline and/or a thorough knowledge of the Acting I curriculum. Special focus workshops will introduce students to a variety of non-western theatrical forms and techniques

Governor's School Craft and Skills Workshops I/II – Students work with guest artists and practicing professionals on location in diverse acting spaces, including professional theatres. Students develop their skills in areas including voice and diction, Shakespeare, stage combat, movement, dance, design for the stage (lighting, costumes, set, and sound), puppetry and mask work, street theatre, children's theatre, improvisation, acting styles, and related audio-visual media skills. Students develop an understanding of life as a professional artist. [Note: Due to the importance of basic skills such as voice and movement, some Skills and Craft course offerings will be mandatory for first-year students.]

Governor's School Introduction to Theatre – Students analyze and perform theatre texts (and scenes) from the Greeks through the modern masters. Students explore plays within the context of the time and place in which they were written. Students research music, literature, and art of the time while they develop a repertoire of acting styles, which may include high tragedy, Shakespeare, Commedia dell'Arte, Comedy of Manners, Melodrama, Theatre of the Absurd, and theatre of social change. Students may opt to take this class for *JMU credit (THEA210, 3 credits)* at their own expense.

Governor's School Dramatic Theory and Criticism - Students will use a variety of critical tools as a basis for making informed judgments about theatre art. Students will read and discuss works of dramatic literature and criticism. Students will study theatre and acting training theorists and put their theories to the test in class. Theorists may include, but are not limited to, Aristotle, Meyerhold, Meisner, Strasberg, Artaud, Grotowski, and Brecht. Students must have successfully completed Introduction to Theatre or demonstrate exceptional talent and discipline and/or a thorough background in theatre history and dramatic literature.

Governor's School Theatre Practicum – Students will participate in mentorship with a professional theatre artist or internships in residency at a professional theatre, film, or television facility. Students will gain a working knowledge of the life of the theatre, film, or television artisan. Students are responsible for finding opportunities to study with professionals and setting and meeting goals for their own success. Internships can take place during the school year or in the summer months before the second year. Students must have

successfully completed all first-year courses and demonstrate maturity and the capacity to succeed in an independent learning situation. Pre-requisite: Permission of the Theater Head and the Director.

Visual Arts Courses

Governor's School Studio Art I - Students study many styles, topics, and techniques using a wide variety of media with the intention of receiving a breadth of knowledge from which to develop their own personal style. Emphasis is on basic skills development, self-expression and experimenting with materials and techniques. Students focus on art production using two- and three-dimensional media and building upon their prior studio experience. A portion of class time is devoted to improvement of basic drawing and design skills. The students begin developing a body of work to use for their portfolio. Students utilize the language of the visual arts and understand, evaluate, and celebrate art in its historical and cultural context as a multicultural means of communication. Students develop critical thinking and communication skills as they articulate their personal responses to the aesthetic qualities of works of art.

Governor's School Studio Art II - Students continue exploration of media and techniques with an emphasis on portfolio development through focused study of utilizing the elements and principles of design and in-depth investigation of self-selected topics. Students select an area of concentration in two-dimensional, three-dimensional, or drawing media, according to the course description for Advanced Placement Studio Art. A schedule of proposed projects in these concentration areas are individually arranged with their instructor. Students also complete project work assigned by the instructor and continue to develop drawing and design skills, especially color theory, through regular exercises in these areas. Through these assignments and the student-directed concentration projects, students create a body of work representing their own personal style for their portfolio. Students may opt to take this course for *Advanced Placement Studio Art* credit at their own expense by submitting a portfolio completed through the work created in this course.

Governor's School Art Craft and Skills Workshops I/II – Students will specialize in exploration of specific media and techniques through study with guest professional artists who are willing to share their knowledge and skills with them. Students will be offered two- and three-dimensional topics on a six to eight week basis. Classes may be taught at SVGS or may be taught at studio spaces in the community. By working with professional artists, students will learn about the career of an artist and the experience of working in the art world. The students also receive an in-depth studio experience in which experimentation, exploration, and individual development are encouraged.

Governor's School Survey of World Art I - This course is a traditional art history survey course. It covers artistic traditions from Prehistoric art to the transition from the art of the Middle Ages to the art of the Renaissance. Students will learn about art from an historical and cultural perspective during this period of

time by examining major forms of artistic expression from world cultures including European, African, Near Eastern, Asian, and Central, South, and Native American. Students will analyze and critique these artistic styles in architecture, sculpture, painting, and other art media. Part of the course is also devoted to art appreciation. Students develop skills in evaluation and judgment through increased knowledge of the range of media, techniques, and stylistic approaches utilized by artists. Students will study aesthetics and criticism, in addition to art history. Students may opt to take this class for *JMU credit available (GARTH 205, 3 credits)* at their own expense.

Governor's School Survey of World Art II - Introduction to art and architecture of the world from the Renaissance through Modern ages. Includes European Renaissance, Baroque, Enlightenment, 19th and 20th centuries, as well as Asian and African arts. Students will analyze and critique these artistic styles in architecture, sculpture, painting, and other art media. Part of the course is also devoted to art appreciation. Students develop skills in evaluation and judgment through increased knowledge of the range of media, techniques, and stylistic approaches utilized by artists. Students will study aesthetics and criticism, in addition to art history. They will learn to analyze, interpret, and judge.Students may opt to take this class for *JMU credit available (GARTH 206, 3 credits)* at their own expense.

Governor's School Art Practicum and Mentorship - Students gain knowledge of the business of art through practicum and mentorship experience with local galleries, art centers, or art-related businesses. Students may also choose to work with a local artist as a mentor. Students arrange this hands-on opportunity in an area of art that is of particular interest to them with approval of their SVGS coordinator. Students maintain a journal record of their work and receive on-site visits regularly from the SVGS coordinator. Presentations of the students' experiences are required at specified times during the course. Pre-requisite: Permission of the Visual Arts Department Coordinator and the SVGS Director.

AH CLASS SCHEDULE

All SVGS classes are taught year long. Lecture days are Monday, Tuesday & Friday. Studio days are Wednesday and Thursday. The notation "IWT" represents "Independent Work Time" when students are not involved with direct instruction but can work on assignments and studio work as needed.

Time	Monday	Tuesday	Friday
7:43	Homeroom	Homeroom	Homeroom
1st Block 7:45 - 8:31	Hum I - Art Survey of World Art Drama Theory and Crit. Theatre Jr. IWT	Hum I - Art Survey of World Art Drama Theory and Crit. Theatre Jr. IWT	Hum I - Art Survey of World Art Drama Theory and Crit. Theatre Jr. IWT
2nd Block 8:33 - 9:19	Studio Art I Studio Art II (Concentration) Hum I - Theatre Acting II	Studio Art I Studio Art II (Concentration) Hum I - Theatre Acting II	Art C&S I Workshop Survey of World Art Workshop Hum I - Theatre Acting II
3rd Block 9:21 - 10:07	Studio Art I Studio Art II (Concentration) Acting I Hum II - Theatre	Studio Art I Studio Art II (Project Prep.) Acting I Hum II - Theatre	Survey of World Art Art C&S II Workshop Acting I Hum II - Theatre
4th Block 10:09 - 10:55	Survey of World Art Hum II - Art Intro to Theatre Theatre Sr. IWT	Survey of World Art Hum II - Art Intro to Theatre Theatre Sr. IWT	Survey of World Art Hum II - Art Intro to Theatre Theatre Sr. IWT

STUDIO DAYS	Wednesday			Thursday		
THEATER	***Homeroom 7:43-7:45***	***Block 1 7:45-10:07***	***Block 2 10:09-10:55***	***Homeroom 7:43-7:45***	***Block 1 7:45-10:07***	***Block 2 10:09-10:55***
AHT Juniors	Homeroom	Crafts & Skills I	Intro to Theater	Homeroom	Acting I	Hum I
AHT Seniors	Homeroom	Acting II	Hum II	Homeroom	Crafts & Skills II	Drama Theory & Crit.

STUDIO DAYS	Wednesday			Thursday		
Visual Arts	***Homeroom 7:43-7:45***	***Block 1 7:45-8:31***	***Block 2 8:33-10:55***	***Homeroom 7:43-7:45***	***Block 1 7:45-8:31***	***Block 2 8:33-10:55***
AHV Juniors	Homeroom	Survey of World Art	Crafts & Skills I	Homeroom	Hum. I	Studio Art I
AHV Seniors	Homeroom	Hum II	Studio Art II	Homeroom	Survey of World Art	Crafts & Skills II

SVGS

SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

CRITERIA FOR MATH & SCIENCE APPLICANTS(STEM)

- ***Completion of required PRE-REQUISITES OF MATH THROUGH ALGEBRA II/TRIGONOMETRY AND TWO LABORATORY SCIENCE COURSES (Indicators: transcript, report card, schedule)***
- Aptitude for successful study of mathematics, science and related technological fields (Indicators: test scores, demonstrated achievement, interview [non-traditional students])
- Outstanding academic achievement in the areas of science, mathematics and technology (Indicators: test scores, grades, awards)
- Participation in special mathematics, science, technology activities (Indicators: record of activities including special summer programs, awards, club membership, projects, job experience, community service)
- Demonstrated interest and commitment (Indicators: participation in special activities, student's chosen course of study, awards, student position statements, positive teacher recommendations, interview [non-traditional students])
- Rigorous program of study (Indicators: record of selection of a program of study which includes challenging academic courses, participation in special enrichment programs)

In 2013-14, there were 103 applicants(73 accepted) for the STEM program.

SVGS STEM Selection Form

Fall 2014 Year

Applicant's Name: _____Current Grade Level:___

Experience/Training/Activities Points *(out of 50)*

Recommendations:

Math Teacher (out of 60) _____

Science Teacher (out of 60) _____

Counselor (out of 40) _____

School Recommendation (out of 60) _____

SUBTOTAL *(out of 220)*

PSAT Scores: Test Date: _____

Verbal Percentile	_____	x 0.9	=	_____
Math Percentile	_____	x 2.0	=	_____
Writing Percentile	_____	x 0.9	=	_____

SVGS Science Skills score: _____ = _____

SUBTOTAL *(out of 430)*

Current GPA: (circle appropriate) **weighted** **unweighted**

*Please make "weighted" if student has taken DE or AP classes calculated in the reported GPA.
Please mark "unweighted" if the student does not have weighted grades calculated in the reported GPA.

GPA: _____ x 40 = _____

Strength of Academic Program

(Enter the appropriate number from below): _____

- Almost always most challenging courses (with one or two exceptions - available honors, AP or dual-enrollment courses) 50 points
- Usually most challenging courses (at least half of available) 40 points
- Few of the most challenging courses (one or two) 30 points

SUBTOTAL *(out of 210)*

TOTAL SCORE (out of 910)

STEM COURSE LIST

Course Name		College	Coll. Crse No	# of Coll. Credits
Adv. Calculus - Multivariable				
Adv. Technology				
AP Calculus BC	AP			
AP Chemistry	AP			
AP Computer Science	AP			
AP Environmental Science	AP			
AP Environmental Science DE	DE	JMU	ISAT112	4
AP Statistics	AP			
Calculus				
Computer Software Operations/Security				
DE Calculus	DE	BRCC	MTH 173, 174	5,5 = 10
Discrete Math DE	DE	JMU	CS227	3
Engineering I				
Engineering II DE	DE	UVA	ENGR 1520	3
Environmental Chemistry				
Environmental Chemistry DE	DE	JMU	ISAT112	4
Geospatial Info. Systems	DE	JMU	GEOG 161	3
Molecular Biology DE	DE	JMU	ISAT113	4
Physics				
PhysicsDE	DE	JMU	PHYS140,140L150, 150L	4,4 = 8
PreCalculus				
Scientific Research				

*NOTE:

- ✓ Fees are set by Augusta County policy for specific classes (sciences, technology, arts & theater). Fees may be waived for students with free/reduced lunch.
- ✓ Tuition costs are set by the colleges awarding dual enrollment college credit. Tuition costs may not be waived for any reason.
- ✓ AP exams fees are set by College Board. AP exams are required for all AP classes unless there are financial considerations regarding the exam fee. Students with free/reduced lunch may qualify for exam fee reductions.

STEM COURSE SEQUENCE

Students in the STEM program are required to take one mathematics, one science and one technology course.

SVGS Math Sequence

NOTE: Juniors who completed the equivalent of two semesters of college calculus prior to matriculating to SVGS should take Advanced Calculus their junior year.

Juniors who completed the equivalent of one semester of college calculus prior to matriculating to SVGS will need to take Calculus DE or AP Calculus BC to complete the second semester of college Calculus.

11th	**Pre-Calculus**	***Calculus** (DE w/ BRCC)	****AP Calculus BC**
	↓	↓	↓
12th	*Choose from:* **Calculus**(DE w/ BRCC) **AP Calculus BC**	*Choose from:* *****Advanced Calculus**(Sem. 3) **AP Statistics** **Discrete Math** (DE w/ JMU)	*Choose from:* *****Advanced Calculus** (Sem. 3) **AP Statistics** **Discrete Math** (DE w/ JMU)

** Calculus DE w/ BRCC is two semesters of college calculus (college Calc. I & II) taught over a full year*
***AP Calculus BC is two semesters of college calculus (college Calc I & II) taught over a full year.*
****Advanced Calculus is a third semester of college calculus(college Calc III).*

SVGS Science Sequence

11th **Physics** (DE w/ JMU for 8 credits of lab science)*

**If the student has completed Physics, they would take Environmental Chemistry at SVGS or Chemistry at their home high school.*

**If the student has already taken both Chemistry and Physics, they may choose from senior sciences listed below.*

12th *Choose from:*

AP Environmental Science
AP Chemistry
Environmental Chemistry (DE w/ JMU for 4 credits of general science)
Molecular Biology (DE w/ JMU for 4 credits of general science)
Modern Physics

SVGS Technology Sequence

11th *Choose from:*

Scientific Research
Engineering

12th *Choose from:*
Advanced Technology
AP Computer Science
Software Operations & Networking Security
Engineering II (DE w/ UVA as an independent study on-line course)
Geospatial Information Systems(DE w/ JMU)

STEM COURSE DESCRIPTIONS

Overview

SVGS has programs and courses designed to meet the unique needs of gifted and highly motivated students. Students may attend in our STEM (Science, Technology, Engineering and Mathematics) program. Students take a mathematics, science and technology class.

All first year science students must conduct an independent research or engineering project during the first semester. This project is formally within the purview of the Research and Engineering course. However, students may choose a project in any area of science, math or engineering that is interesting, provided a SVGS faculty mentor and a community mentor can be found if the project falls outside in-house areas of expertise. *Students are required to present their projects at the Student Research Symposium held each spring, at which attendance is mandatory for all science students. Students are also required to submit their projects to the Virginia Junior Academy of Science or an equivalent venue, and if accepted, required to attend the annual conference and/or competition.*

Mathematics

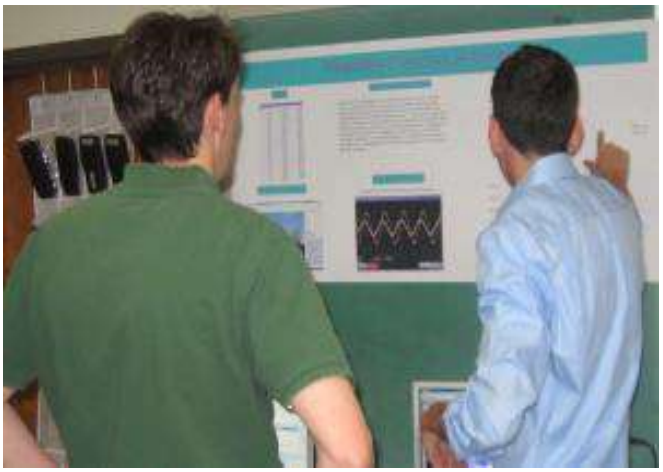
Governor's School Pre-Calculus - Students increase their understanding of functions and their characteristics including graphing techniques, using exponential, logarithmic and trigonometric functions to solve application problems, arithmetic and geometric sequences and series, mathematical induction, limits, first and second order derivatives, and integration. Students explore the use of mathematics in the natural sciences, thus fostering an application-oriented approach to mathematics that is enhanced through the use of technology. Students make extensive use of technology as an integral part of their learning. Students improve their facility with graphing calculators and the computer packages *Maple and Excel.*

Governor's School Calculus – Students become proficient with limits, the derivative and differentiation techniques, the integral and integration techniques, basic applications of differentiation and integration, and infinite series, including Taylor Series. Students explore the fundamental relationship between the derivative, the integral, and the Riemann Sum. Students begin their study of multidimensional calculus including vectors and parametric equations. Students enhance their learning through computer-based activities utilizing *Maple* and *Excel.* Students must take this class for BRCC credit (Math 173-174, 5 credits each) at their own expense. Prerequisite: Any Pre-Calculus course.

Governor's School A. P. Calculus BC – Students master limits, derivatives and anti-derivatives of polynomial, exponential and trigonometric functions and their inverses, as well as parametric, polar and vector functions for planar curves; techniques of differentiation and anti-differentiation; continuity of functions and the Intermediate Value Theorem and Mean Value Theorem; Fundamental Theorem of Calculus; physical applications of derivatives and anti-derivatives; series of constants and tests for convergence of

series; Taylor's series approximations of functions with radii of convergence and error bounding. Students actively participate in class discussions, which are supplemented by graphing calculator and computer activities. Students become proficient with *Maple* and *Excel.* This course prepares students to take the BC version of the Advanced Placement Calculus test, which is a required activity. Pre-requisite: SVGS Pre-Calculus (grade of A- or better) or a dual-enrollment pre-calculus class (grade of A- or better). Prerequisites may be waived by the Director.

Advanced Calculus: Multivariable Calculus: Concepts learned during the first year of calculus to advanced problems in multi-dimensional analysis. Students investigate topics including rectangular, spherical and cylindrical coordinates, three-dimensional vectors, partial differentiation, multiple integrals and matrices. Students' understanding of multi-dimensional mathematics is enhanced with computer visualization techniques. This course is designed for students who have exceptional math skills. Pre-requisite: A.P. Calculus B.C. or SVGS Calculus (grade of B or better)



Governor's School Discrete Mathematics - Discrete Mathematics is the branch of mathematics dealing with objects that can assume only distinct, separated values. This course offers a nice counterpoint to the study of continuous mathematics that students pursue in calculus. Students will study logic, set theory, and matrices. Students will understand elementary number theory, the basic techniques of proof, and the basics of counting including combinatorics and probability. The ideas of discrete mathematics inform the study of computer science and this course will emphasize the connections between them. It is strongly recommended for students taking AP Computer Science. Students may take this course for dual-enrollment credit through JMU (Math/CS 227) at their own expense.

Governor's School A. P. Statistics - Students become proficient with the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Four broad themes woven throughout the course are experimental design, measures of central tendency, anticipating patterns, mathematic modeling and statistical inference. Students enhance their understanding through the use of computer software packages such as *Excel* and *JMP*, which are used extensively to analyze, display and aide in the interpretation of data. This course prepares students to take the Advanced Placement Statistics test, which is a required activity. Pre-requisite: completion of Pre-Calculus (grade of C or better) and prior completion or concurrent enrollment in any Calculus class.

Science

Governor's School College Physics – Students conduct extensive laboratory investigations on topics including Newtonian mechanics, optics, electromagnetism, and materials science. Students' investigations

and assignments integrate the physical sciences with mathematics. Students enhance their learning through the use of technology to analyze and present data, and simulate experiments. Students may opt to take this class for dual enrollment credit with JMU (PHYS 140-140L/150-150L, 4 credits each semester)at their own expense.

Governor's School A. P. Chemistry - Advanced Placement Chemistry is designed to be equivalent to a first-year college chemistry course. Students will participate in lectures, demonstrations, activities & extensive laboratory experiments on topics such as atomic structure & quantum theory, chemical compounds, reactions & stoichiometry, states of matter & solutions, thermo-chemistry & kinetics, equilibrium, acids & bases, electro-chemistry, nuclear chemistry & organic chemistry. AP Chemistry also involves applying these concepts to "every-day" life with projects such as calorimetry, efficiency, crystal growth, catalysis and water treatment.

Governor's School Environmental Chemistry – Students master basic principles of chemistry and statistical analysis in the context of the chemical and physical characteristics of water, soils, rocks, the atmosphere and natural fuels. Students conduct extensive laboratory analysis and field sampling utilizing EPA methods where feasible. Students investigate anthropogenic influences on natural materials cycles from the viewpoint of the classical chemist. Students enhance their learning through the use of instrumental analysis, which supplements traditional micro and wet chemistry methods. Students will demonstrate mastery of computerized data recording, calculation and analysis; graphical presentation; researching primary and popular literature; and formal report writing and scientific presentation. This class is required of any SVGS student who will not otherwise have completed high school chemistry prior to graduation. Students may opt to take the class for JMU credit (ISAT 112, 3 credits) at their own expense.

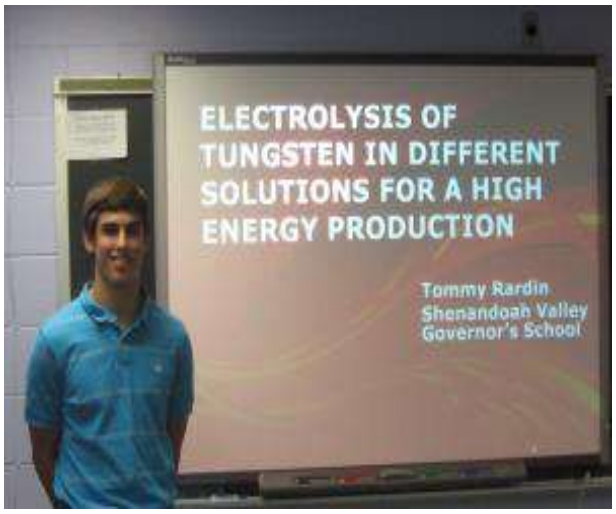
Governor's School A. P. Environmental Science - Students explore geology, paleontology, atmospheric science, ecology, and technology in the context of environmental problems facing humans today. Students conduct extensive laboratory and field studies including water and air quality, soil processes, population dynamics, and community and ecosystem processes. Students enhance their learning through the use of computer simulations and models, and the use of technology to analyze and present data. Students are prepared to take the Advanced Placement Environmental Science test, which is a required activity. Pre-requisites: Biology, Chemistry, Physics and Pre-Calculus, completion of Earth Science is strongly recommended. Students may opt to take the class for JMU credit (ISAT 112, 3 credits) at their own expense.

Governor's School Molecular and Microbiology – Students investigate fundamental life processes through the use and study of rapidly developing technologies such as genetic engineering, pharmaceutical developments, and treatment and prevention of infectious diseases. Students conduct extensive laboratory investigations on DNA extraction, gel electrophoresis, culture and identification of microbial organisms, and biochemistry. Students enhance their understanding of biological molecules through the use of mechanical and computer molecular modeling. Students become

proficient in the use of technology to analyze and present data. Students may opt to take this class for dual enrollment credit with JMU at their own expense (ISAT 113, 3 credits). Pre-requisites: Biology, Chemistry, Physics (all with grades of B or better) and Pre-Calculus.

Governor's School Modern Physics – Students explore the theoretical study of Special Relativity and Quantum Mechanics with an emphasis on computer models of the processes involved. Topics covered include Special Relativity, the Schrödinger equation, tunneling phenomena, General Relativity, Elementary Particle Physics, and the Hydrogen Atom. Students enhance their learning through extensive laboratory investigations and simulations. Students become proficient in the use of technology to analyze and present data. Pre-requisites: GS Physics, and GS Pre-Calculus or GS Calculus (grades of A- or better). Co-requisite: Calculus or above.*(Offered pending enrollment.)*

Technology Courses



Governor's School Scientific Research - Students discover and put into practice research methods and engineering design. Students apply principles of the natural sciences and applied statistics in solving research and engineering problems. Students complete an individual research project, write a scientific paper, and submit their results for presentation at various venues, including the SVGS Research Symposium (participation is required) and Virginia Junior Academy of Science (paper submission and participation, if accepted, is required). They make use of on-line libraries and review scholarly scientific resources.

Governor's School Engineering I - Introduction to Engineering familiarizes students with the engineering design process in a project-based learning environment. Toolkit skills such as dimensional analysis, computer-aided design, and statistical analysis will be introduced and incorporated in projects throughout the year. A project-based approach to the major branches of engineering (Electrical, Civil, Mechanical, and Chemical) will give students the opportunity to apply engineering design principles to a variety of problems while developing personal skills in teamwork and communication that are vital in the engineering profession.

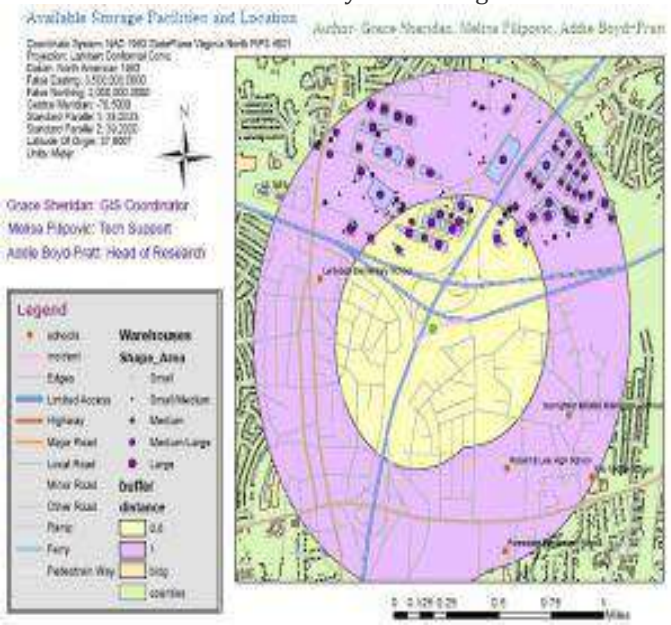
Governor's School Advanced Technology - The primary focus in Advanced Technology is the exploration of computer technology as a tool for communicating powerful ideas in mathematics and science. Students learn to animate in two-dimensions and build interactive presentations. Students will learn to create web sites and will develop an understanding of good design. Students will also explore digital photography and digital video production. The students will use all their skills to build pod-casts and other means of using MP3 players such as

iPods. The course is project-based and students will develop projects in conjunction with their mathematics and science courses. Students will also be asked to discuss ethical issues related to modern technology and to learn vocabulary associated with computers.

Governor's School A. P. Computer Science (A) - Students design, implement and interpret computer-based solutions to problems in several application areas using *Java.* Students become knowledgeable about programming concepts, algorithm designs, and documentation of the computer solution and proficient at writing and debugging code. The course material emphasizes those concepts outlined by the College Board and prepares students to take the Advanced Placement Computer Science test. Students may opt to take this class for dual enrollment credit with Blue Ridge Community College at their own expense (ITP 120, 3 credits). Pre-requisites: completion of Pre-Calculus, Research and Engineering, and Physics (grades of A- or better) OR permission of the Director and Instructor.

Governor's School Computer Network Software Operations/Networking Security - Students are provides instruction in the basics of computer networking, operating systems, system administration and network security. Course content includes a overview of networking, operating systems and other software applications, learning to perform common administrative functions in scripting environments. Students will examine PHP and PERL in the context of an Apache webserver, and use GNU BASH and Microsoft Powershell scripting from the command line to complete every day administrative functions. Course content also includes risk management, network security policy, security training, security keys, confidentiality, integrity, acess, accountability, and audit ability. Participation in various industry sponsored contests *such as Cyber Challenge and other contests* are expected. *Course offering is dependent on student interest, sufficient enrollment and staffing.*

Governor's School Engineering II – Students develop the "thought-work" behind applying concepts of multi-disciplinary engineering methods. Students are immediately immersed in advanced tenements of: static and dynamic equilibrium of particles, tools, and complex elements (like the human body); use of Computer Aided Design in basic engineering modeling; test and evaluation concepts; evaluation of structural and mechanical relationships; evaluation and application of problem design criteria, design for failure concepts, precision and safety-factors mark some but are not inclusive of all the principals touched-on during the course. Engineering Methodology combines mathematics and the physical sciences to resolve problems and reverse engineer solutions. Students complete a dozen team Design Projects and solutions are presented via CAD, schematics, and detailed technical write-ups. Individuals improve math, physics and material science skills by combining them to resolve problems. As part of this class, students may opt to enroll in the first semester of the University of Virginia's Introduction to Engineering (ENGR1520, 3 credits) at their own expense.



Governor's School Geospatial Information Systems - Students will develop the skills and knowledge necessary to make use of geographic technologies such as geospatial information systems (GIS), global positioning systems (GPS), and remote sensing. The class will focus on applying GIS technology to different fields, such as environmental science, city planning, ecology and many others.

Students will work with a variety of data sets, collect data, and develop their own GIS research project. Students in this class must enroll for dual enrollment credit with James Madison University at their expense (GEOG 161 , 3 credits).

Governor's School Electric Vehicle Technology – Students study, create and implement designs of electrical circuits and mechanical devices based on the needs of an electric vehicle. Students create web pages to explain their cars, develop trouble-shooting methods, make presentations, and investigate environmental issues related to transportation. The hands-on approach to this course enables students to develop personally, academically, and professionally. Students compete in organized electric vehicle meets, where they learn racing strategies and safety as well as new and innovative ways to improve the school's vehicle design.

STEM CLASS SCHEDULE

All SVGS classes are taught year long. Lecture days are Monday, Tuesday & Friday. Lab days are Wednesday and Thursday. The notation "IWT" represents "Independent Work Time" when students are not involved with direct instruction but can work on assignments and labs as needed.

Typical JUNIOR STEM Lecture Schedule Monday, Tuesday & Friday
(Students take a math, science and technology class at SVGS.)

	Fall	Spring
7:45	SVGS - Calculus	SVGS - Calculus
8:30	IWT	IWT
9:15	SVGS - Research	SVGS - Research
10:00	SVGS - Physics	SVGS - Physics
10:55	Return to Homeschool (carpool, parents, tech bus)	
11:15 -3:00	Homeschool 3rd Block/Lunch Homeschool 4th Block	Homeschool 3rd Block/Lunch Homeschool 4th Block

Typical JUNIOR STEM Lab Schedule Wednesday & Thursday
(Students take a math, science and technology class at SVGS.)

	Wednesday	Thursday
7:45	SVGS - Calculus	SVGS - Research
9:15	IWT	SVGS - Physics
10:55	Return to Homeschool (carpool, parents, tech bus)	
11:15 -3:00	Homeschool 3rd Block/Lunch Homeschool 4th Block	Homeschool 3rd Block/Lunch Homeschool 4th Block

Typical SENIOR STEM Lecture Schedule Monday, Tuesday & Friday
(Students take a math, science and technology class at SVGS.)

	Fall	Spring
7:45	SVGS – AP Statistics	SVGS – AP Statistics
8:30	SVGS – AP Computer Science	SVGS – AP Computer Science
9:15	IWT or SVGS STEM elective	IWT or SVGS STEM elective
10:00	SVGS – Molecular Biology	SVGS – Molecular Biology
10:55	Return to Homeschool (carpool, parents, tech bus)	
11:15 -3:00	Homeschool 3rd Block/Lunch Homeschool 4th Block	Homeschool 3rd Block/Lunch Homeschool 4th Block

Typical SENIOR STEM Lab Schedule Wednesday & Thursday
(Students take a math, science and technology class at SVGS.)

	Wednesday	Thursday
7:45	SVGS – AP Statistics	IWT or SVGS STEM elective
9:15	SVGS – AP Computer Science	SVGS – Molecular Biology
10:55	Return to Homeschool (carpool, parents, tech bus)	
11:15 -3:00	Homeschool 3rd Block/Lunch Homeschool 4th Block	Homeschool 3rd Block/Lunch Homeschool 4th Block

APPENDIX

The Secret to Raising Smart Kids

By Carol S. Dweck

Hint: Don't tell your kids that they are. More than three decades of research shows that a focus on effort — not on intelligence or ability — is key to success in school and in life.

A brilliant student, Jonathan sailed through grade school. He completed his assignments easily and routinely earned As. Jonathan puzzled over why some of his classmates struggled, and his parents told him he had a special gift. In the seventh grade, however, Jonathan suddenly lost interest in school, refusing to do homework or study for tests. As a consequence, his grades plummeted. His parents tried to boost their son's confidence by assuring him that he was very smart. But their attempts failed to motivate Jonathan (who is a composite drawn from several children). Schoolwork, their son maintained, was boring and pointless.

Our society worships talent, and many people assume that possessing superior intelligence or ability — along with confidence in that ability — is a recipe for success. In fact, however, more than 30 years of scientific investigation suggests that an overemphasis on intellect or talent leaves people vulnerable to failure, fearful of challenges and unwilling to remedy their shortcomings.

The result plays out in children like Jonathan, who coast through the early grades under the dangerous notion that no-effort academic achievement defines them as smart or gifted. Such children hold an implicit belief that intelligence is innate and fixed, making striving to learn seem far less important than being (or looking) smart. This belief also makes them see challenges, mistakes and even the need to exert effort as threats to their ego rather than as opportunities to improve. And it causes them to lose confidence and motivation when the work is no longer easy for them.

Praising children's innate abilities, as Jonathan's parents did, reinforces this mind-set, which can also prevent young athletes or people in the workforce and even marriages from living up to their potential. On the other hand, our studies show that teaching people to have a "growth mind-set," which encourages a focus on effort rather than on intelligence or talent, helps make them into high achievers in school and in life.

The Opportunity of Defeat

I first began to investigate the underpinnings of human motivation — and how people persevere after setbacks — as a psychology graduate student at Yale University in the 1960s. Animal experiments by psychologists Martin Seligman, Steven Maier and Richard Solomon of the University of Pennsylvania had shown that after repeated failures, most animals conclude that a situation is hopeless and beyond their control. After such an experience, the researchers found, an animal often remains passive even when it can affect change — a state they called learned helplessness.

People can learn to be helpless, too, but not everyone reacts to setbacks this way. I wondered:

Why do some students give up when they encounter difficulty, whereas others who are no more skilled continue to strive and learn? One answer, I soon discovered, lay in people's beliefs about why they had failed.

In particular, attributing poor performance to a lack of ability depresses motivation more than does the belief that lack of effort is to blame. In 1972, when I taught a group of elementary and middle school children who displayed helpless behavior in school that a lack of effort (rather than lack of ability) led to their mistakes on math problems, the kids learned to keep trying when the problems got tough. They also solved many of the problems even in the face of difficulty. Another group of helpless children who were simply rewarded for their success on easy problems did not improve their ability to solve hard math problems.

These experiments were an early indication that a focus on effort can help resolve helplessness and engender success.

Subsequent studies revealed that the most persistent students do not ruminate about their own failure much at all but instead think of mistakes as problems to be solved. At the University of Illinois in the 1970s I, along with my then graduate student Carol Diener, asked 60 fifth graders to think out loud while they solved very difficult pattern-recognition problems. Some students reacted defensively to mistakes, denigrating their skills with comments such as "I never did have a good rememory," and their problem-solving strategies deteriorated.

Others, meanwhile, focused on fixing errors and honing their skills. One advised himself: "I should slow down and try to figure this out." Two schoolchildren were particularly inspiring. One, in the wake of difficulty, pulled up his chair, rubbed his hands together, smacked his lips and said, "I love a challenge!" The other, also confronting the hard problems, looked up at the experimenter and approvingly declared, "I was hoping this would be informative!" Predictably, the students with this attitude outperformed their cohorts in these studies.

Two Views of Intelligence

Several years later I developed a broader theory of what separates the two general classes of learners — helpless versus mastery-oriented. I realized that these different types of students not only explain their failures differently, but they also hold different "theories" of intelligence. The helpless ones believe that intelligence is a fixed trait: you have only a certain amount, and that's that. I call this a "fixed mind-set." Mistakes crack their self-confidence because they attribute errors to a lack of ability, which they feel powerless to change. They avoid challenges because challenges make mistakes more likely and looking smart less so. Like Jonathan, such children shun effort in the belief that having to work hard means they are dumb.

The mastery-oriented children, on the other hand, think intelligence is malleable and can be developed through education and hard work. They want to learn above all else. After all, if you believe that you can expand your intellectual skills, you want to do just that. Because slipups stem from a lack of effort, not ability, they can be remedied by more effort. Challenges are energizing rather than intimidating; they offer opportunities to learn. Students with such a growth mind-set, we predicted, were destined for greater academic success and were quite likely to outperform their counterparts.

We validated these expectations in a study published in early 2007. Psychologists Lisa Blackwell of Columbia University and Kali H. Trzesniewski of Stanford University and I monitored 373 students for two years during the transition to junior high school, when the work gets more difficult and the grading more stringent, to determine how their mind-sets might affect their math grades. At the beginning of seventh grade, we assessed the students' mind-sets by asking them to agree or disagree with statements such as "Your intelligence is something very basic about you that you can't really change." We then assessed their beliefs about other aspects of learning and looked to see what happened to their grades.

As we had predicted, the students with a growth mind-set felt that learning was a more important goal in school than getting good grades. In addition, they held hard work in high regard, believing that the more you labored at something, the better you would become at it. They understood that even geniuses have to work hard for their great accomplishments. Confronted by a setback such as a disappointing test grade, students with a growth mind-set said they would study harder or try a different strategy for mastering the material.

The students who held a fixed mind-set, however, were concerned about looking smart with little regard for learning. They had negative views of effort, believing that having to work hard at something was a sign of low ability. They thought that a person with talent or intelligence did not need to work hard to do well. Attributing a bad grade to their own lack of ability, those with a fixed mind-set said that they would study less in the future, try never to take that subject again and consider cheating on future tests.

Such divergent outlooks had a dramatic impact on performance. At the start of junior high, the math achievement test scores of the students with a growth mind-set were comparable to those of students who displayed a fixed mind-set. But as the work became more difficult, the students with a growth mind-set showed greater persistence. As a result, their math grades overtook those of the other students by the end of

the first semester — and the gap between the two groups continued to widen during the two years we followed them [see box on page 39].

Along with Columbia psychologist Heidi Grant, I found a similar relation between mind-set and achievement in a 2003 study of 128 Columbia freshman premed students who were enrolled in a challenging general chemistry course. Although all the students cared about grades, the ones who earned the best grades were those who placed a high premium on learning rather than on showing that they were smart in chemistry. The focus on learning strategies, effort and persistence paid off for these students.

Confronting Deficiencies

A belief in fixed intelligence also makes people less willing to admit to errors or to confront and remedy their deficiencies in school, at work and in their social relationships. In a study published in 1999 of 168 freshmen entering the University of Hong Kong, where all instruction and coursework are in English, three Hong Kong colleagues and I found that students with a growth mind-set who scored poorly on their English proficiency exam were far more inclined to take a remedial English course than were low-scoring students with a fixed mind-set. The students with a stagnant view of intelligence were presumably unwilling to admit to their deficit and thus passed up the opportunity to correct it.

A fixed mind-set can similarly hamper communication and progress in the workplace by leading managers and employees to discourage or ignore constructive criticism and advice. Research by psychologists Peter Heslin and Don VandeWalle of Southern Methodist University and Gary Latham of the University of Toronto shows that managers who have a fixed mind-set are less likely to seek or welcome feedback from their employees than are managers with a growth mind-set. Presumably, managers with a growth mind-set see themselves as works-in-progress and understand that they need feedback to improve, whereas bosses with a fixed mind-set are more likely to see criticism as reflecting their underlying level of competence. Assuming that other people are not capable of changing either, executives with a fixed mind-set are also less likely to mentor their underlings. But after Heslin, VandeWalle and Latham gave managers a tutorial on the value and principles of the growth mind-set, supervisors became more willing to coach their employees and gave more useful advice.

Mind-set can affect the quality and longevity of personal relationships as well, through people's willingness — or unwillingness — to deal with difficulties. Those with a fixed mind-set are less likely than those with a growth mind-set to broach problems in their relationships and to try to solve them, according to a 2006 study I conducted with psychologist Lara Kammrath of Wilfrid Laurier University in Ontario. After all, if you think that human personality traits are more or less fixed, relationship repair seems largely futile. Individuals who believe people can change and grow, however, are more confident that confronting concerns in their relationships will lead to resolutions.

Proper Praise

How do we transmit a growth mind-set to our children? One way is by telling stories about achievements that result from hard work. For instance, talking about math geniuses who were more or less born that way puts students in a fixed mind-set, but descriptions of great mathematicians who fell in love with math and developed amazing skills engenders a growth mindset, our studies have shown. People also communicate mind-sets through praise [see box on page 40]. Although many, if not most, parents believe that they should build up a child by telling him or her how brilliant and talented he or she is, our research suggests that this is misguided.

In studies involving several hundred fifth graders published in 1998, for example, Columbia psychologist Claudia M. Mueller and I gave children questions from a nonverbal IQ test. After the first 10 problems, on which most children did fairly well, we praised them. We praised some of them for their intelligence: "Wow … that's a really good score. You must be smart at this." We commended others for their effort: "Wow … that's a really good score. You must have worked really hard."

We found that intelligence praise encouraged a fixed mind-set more often than did pats on the back for effort. Those congratulated for their intelligence, for example, shied away from a challenging assignment — they wanted an easy one instead — far more often than the kids applauded for their effort. (Most of those lauded for their hard work wanted the difficult problem set from which they would learn.) When we gave everyone hard problems anyway, those praised for being smart became discouraged, doubting their ability. And their scores, even on an easier problem set we gave them afterward, declined as compared with their previous results on equivalent problems. In contrast, students praised for their effort did not lose confidence when faced with the harder questions, and their performance improved markedly on the easier problems that followed [see box on opposite page].

Making Up Your Mind-set

In addition to encouraging a growth mind-set through praise for effort, parents and teachers can help children by providing explicit instruction regarding the mind as a learning machine. Blackwell, Trzesniewski and I recently designed an eight-session workshop for 91 students whose math grades were declining in their first year of junior high. Forty-eight of the students received instruction in study skills only, whereas the others attended a combination of study skills sessions and classes in which they learned about the growth mind-set and how to apply it to schoolwork.

In the growth mind-set classes, students read and discussed an article entitled "You Can Grow Your Brain." They were taught that the brain is like a muscle that gets stronger with use and that learning prompts neurons in the brain to grow new connections. From such instruction, many students began to see themselves as agents of their own brain development. Students who had been disruptive or bored sat still and took note. One particularly unruly boy looked up during the discussion and said, "You mean I don't have to be dumb?"

As the semester progressed, the math grades of the kids who learned only study skills continued to decline, whereas those of the students given the growth-mind-set training stopped falling and began to bounce back to their former levels. Despite being unaware that there were two types of instruction, teachers reported noticing significant motivational changes in 27 percent of the children in the growth mind-set workshop as compared with only 9 percent of students in the control group. One teacher wrote: "Your workshop has already had an effect. L [our unruly male student), who never puts in any extra effort and often doesn't turn in homework on time, actually stayed up late to finish an assignment early so I could review it and give him a chance to revise it. He earned a B+. (He had been getting Cs and lower.)"

Other researchers have replicated our results. Psychologists Catherine Good, then at Columbia, and Joshua Aronson and Michael Inzlicht of New York University reported in 2003 that a growth mind-set workshop raised the math and English achievement test scores of seventh graders. In a 2002 study Aronson, Good (then a graduate student at the University of Texas at Austin) and their colleagues found that college students began to enjoy their schoolwork more, value it more highly and get better grades as a result of training that fostered a growth mind-set.

We have now encapsulated such instruction in an interactive computer program called "Brainology," which should be more widely available by mid-2008. Its six modules teach students about the brain — what it does and how to make it work better. In a virtual brain lab, users can click on brain regions to determine their functions or on nerve endings to see how connections form when people learn. Users can also advise virtual students with problems as a way of practicing how to handle schoolwork difficulties; additionally, users keep an online journal of their study practices.

New York City seventh graders who tested a pilot version of Brainology told us that the program had changed their view of learning and how to promote it. One wrote: "My favorite thing from Brainology is the neurons part where when u [sic] learn something there are connections and they keep growing. I always picture them when I'm in school." A teacher said of the students who used the program: "They offer to practice, study, take notes, or pay attention to ensure that connections will be made."

Teaching children such information is not just a ploy to get them to study. People do differ in intelligence, talent and ability. And yet research is converging on the conclusion that great accomplishment, and even what we call genius, is typically the result of years of passion and dedication and not something that flows naturally from a gift. Mozart, Edison, Curie, Darwin and Cézanne were not simply born with talent; they cultivated it

through tremendous and sustained effort. Similarly, hard work and discipline contribute much more to school achievement than IQ does.

Such lessons apply to almost every human endeavor. For instance, many young athletes value talent more than hard work and have consequently become unteachable. Similarly, many people accomplish little in their jobs without constant praise and encouragement to maintain their motivation. If we foster a growth mind-set in our homes and schools, however, we will give our children the tools to succeed in their pursuits and to become responsible employees and citizens.

(The most persistent students do not ruminate about their own failure but think of mistakes as problems to be solved.)

FAST FACTS Growing Pains

1. >> Many people assume that superior intelligence or ability is a key to success. But more than three decades of research shows that an overemphasis on intellect or talent — and the implication that such traits are innate and fixed — leaves people vulnerable to failure, fearful of challenges and unmotivated to learn.
2. >> Teaching people to have a "growth mind-set," which encourages a focus on effort rather than on intelligence or talent, produces high achievers in school and in life.
3. >> Parents and teachers can engender a growth mind-set in children by praising them for their effort or persistence (rather than for their intelligence), by telling success stories that emphasize hard work and love of learning, and by teaching them about the brain as a learning machine.

(Further Reading)

• *Praise for Intelligence Can Undermine Children's Motivation and Performance. Claudia M. Mueller and Carol S. Dweck in Journal of Personality and Social Psychology. Vol. 75, No. 1, pages 33-52; November 1998.*

• *Self-Discipline Outdoes IQ in Predicting Academic Performance of Adolescents. A. Duckworth and M. Seligman in Psychological Science, Vol. 16, pages 939-944; 2005.*

• *Why Do Beliefs about Intelligence Influence Learning Success? A Social Cognitive Neuroscience Model. J. A. Mangels, B. Butterfield, J. Lamb, C. Good and C. S. Dweck in Social Cognitive and Affective Neuroscience, Vol. 1, No. 2, pages 75-86; September 2006.*

• *The Cambridge Handbook of Expertise and Expert Performance. Edited by K. A. Ericsson. N. Charness, P. J. Feltovich and R. R. Hoffman. Cambridge University Press, 2006.*

• *Implicit Theories of Intelligence Predict Achievement across an Adolescent Transition: A Longitudinal Study and an Intervention. Lisa S. Blackwell. Kali H. Trzesniewski and Carol S. Dweck in Child Development, Vol. 78, No. 1, pages 246-263; January/February 2007.*

• *Subtle Linguistic Cues Affect Children's Motivation. A. Cimpian, H.-M. C. Arce, E. M. Markman and C. S. Dweck in Psychological Science. Vol. 18, No. 4, pages 314-316: April 2007.*

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ANOTHER RESOURCE:

"There are many talented individuals who simply do not follow through on their commitments. In fact, in our data, grit is usually unrelated or even inversely related to measures of talent."

Very engaging, intelligent and practical, Dr. Angela Lee Duckworth studies intangible concepts such as self-discipline and grit to determine how they might predict both academic and professional success. See the link below for her keynote presentation AP Annual Conference 2013: "True Grit" in July 2013.

http://www.youtube.com/watch?feature=player_detailpage&v=BrkwrHSfsMY