



Department of Teaching & Learning
Parent/Student Course Information

HEALTH, PHYSICAL AND DRIVER EDUCATION II (HPE10)
(PE 7405)
One credit, one
year

Counselors are available to assist parents and students with course selections and career planning. Parents may arrange to meet with the counselor by calling the school's guidance department.

COURSE DESCRIPTION

Students in grade ten are proficient in fundamental movement skills and skill combinations and are competent in self-selected physical activities that they are likely to pursue throughout life including outdoor pursuits, fitness activities, dance and rhythmic activities, aquatics, selected individual performance activities, and net/wall and target games. They understand and apply concepts and principles of mechanics and anatomy in relation to human movement and apply the concepts and principles of the body's metabolic response to short-term and long-term physical activity. Students are good leaders and good followers; they respect others and anticipate and avoid unsafe physical activity situations. They develop the ability to understand and they anticipate how physical activity interests and abilities change across a lifetime. Students demonstrate competency in lifelong physical activities and plan, implement, self-assess, and modify a personal fitness plan. Students are prepared to lead a physically active lifestyle.

Students in grade ten demonstrate comprehensive health and wellness knowledge and skills. Their behaviors reflect a conceptual understanding of the issues associated with maintaining good personal health. They serve the community through the practice of health-enhancing behaviors that promote wellness throughout life (self-awareness, social awareness, self-management, responsible decision making, and relationship skills). One semester of health during the HPEII course is dedicated to Driver Education.

The Family Life Education (FLE) program is implemented during the second semester of the health program. Prior to the start of the family life program, students receive information in their schools to take home to their parents/guardians. This information includes the dates of instruction for the program as well as more specific information related to the Opt-Out program. The Opt-Out program offers parents/guardians the opportunity to withdraw their children from the Family Life Education Program if they do not wish them to participate in the lessons. Since individual schools schedule the dates for their FLE instruction, deadlines for opting out of the program will vary. However, requests must be in writing to be honored at any time during the Family Life program. The grade 10 Family Life Education program focuses on the topics of evolution of relationships (courtship and marriage), abstinence outside the marriage, and community resources.

PREREQUISITE

Health and Physical Education I

OPTIONS FOR NEXT COURSE

Physical Education Level

III Anatomy and Sports

Injury

REQUIRED STUDENT TEXTBOOK

None

Modified physical education is provided for students certified by a doctor as being unable to participate in the regular program

HEALTH EDUCATION (HPEII)

Essential Health Concepts

10.1 The student will demonstrate an understanding of health concepts, behaviors, and skills that reduce health risks and enhance the health and wellness of oneself and of others throughout life.

Body Systems

a) Identify and describe the major structures and functions of the lymphatic system.

Nutrition

b) Identify a variety of diets (e.g., typical American, Mediterranean, vegetarian, vegan).

Physical Health

c) Explain the physical, mental, social, and academic benefits of sufficient sleep and the relationship between sleep deficiency, chronic disease, and the increased risk for injury and substance use.

Disease Prevention/Health Promotion

d) Identify technologies individuals can use to assess, monitor, improve, and maintain health.

e) Identify regular screenings, immunizations, vaccines, tests, and other medical examinations needed for different stages of life and their role in reducing health risks.

f) Identify and research a selected personal, community, or global health issue.

Substance Abuse Prevention

g) Research trends and factors that contribute to teen use/abuse and non-substance use of alcohol, tobacco, nicotine products (e.g., e-cigarettes), opioids, and other drugs and their impact on the community.

h) Evaluate the causal relationship between tobacco, alcohol, inhalant, and other drug use and chronic disease.

i) Identify unsafe behaviors that may result in unintentional injury while riding in or operating a vehicle.

Safety/Injury Prevention

j) List examples and describe the risks of sharing/posting personal information online.

Mental Wellness/Social and Emotional Skills

k) Identify factors that can influence an individual's mental health, including family, social environment, trauma, genetics, brain chemistry, health behaviors, personal values, peers, media, technology, culture, and community.

l) Identify characteristics of healthy, unhealthy, and abusive peer, family, and dating relationships.

m) Identify health professionals and types of services available for mental illnesses and emotional challenges.

n) Identify different personal relationships teens are involved in and the characteristics of each.

Violence Prevention

o) Identify the skills needed to effectively navigate peer pressure situations.

p) Identify the consequences of using acts of violence to settle disputes.

q) Compare and contrast assertive and aggressive communication and how they affect conflict resolution.

r) Analyze the short- and long-term consequences of gang involvement on personal and community health now and in the future.

Community/Environmental Health

s) Investigate natural disasters and emergency situations that affect the community.

t) Explain how the quality of the environment (e.g., secondhand smoke, carbon monoxide, allergens, lead, toxic chemicals) directly affects a person's health status and quality and length of life.

u) Identify health-related social issues, such as organ donation, homelessness, the spread of infectious diseases, underage drinking, substance abuse, and violence, and their impact on the community.

v) Analyze how health literacy and health-science skills prepare one to become a productive citizen.

w) Describe attributes, characteristics, and interests of individuals in health-related professions and the core academic skills needed for workplace skills in a health career.

Healthy Decisions

10.2 The student will analyze, synthesize, and evaluate the protective factors needed to make healthy decisions throughout life.

Body Systems

- a) Describe the role of the lymphatic system in providing protection against the spread of disease and cancer.

Nutrition

- b) Compare and contrast diverse diets (e.g., typical American, Mediterranean, vegetarian, vegan).

Physical Health

- c) Explain the role of the environment, individual behavior, family history, social norms, legislation, and policies in preventing chronic diseases.

Disease Prevention/Health Promotion

- d) Research the costs and benefits of various technologies that allow individuals to assess, monitor, improve, and maintain health.
- e) Explain the purpose of medical screenings, immunizations, vaccines, and tests for different stages of life and the importance of access to health care throughout life.
- f) Explain the impact of the social determinants of health on a selected personal, community, or global health issue.

Substance Abuse Prevention

- g) Explain reasons why teenagers use or avoid drugs or alcohol and how positive role models can influence that decision.
- h) Evaluate the protective factors needed to reduce or prevent risk-taking behaviors, acts of violence, and substance use.
- i) Explain the role of the environment, individual behavior, social norms, legislation, and policies in preventing motor vehicle-related injuries.

Safety/Injury Prevention

- j) Identify what needs to be considered before posting pictures, videos, and communicating with others online.

Mental Wellness/Social and Emotional Skills

- k) Describe the stigma surrounding mental illnesses and challenges and the impact of stigma and discrimination on help-seeking behavior.
- l) Explain the role of respecting the experiences of others; accepting differences; and establishing, communicating, and respecting boundaries for healthy relationships.
- m) Identify help-seeking strategies and resources and when to seek support for oneself and others with signs of mental illnesses or challenges (e.g., depression, suicide ideation).
- n) Evaluate potentially harmful and abusive relationships, including dangerous dating situations.

Violence Prevention

- o) Examine the influences of peer approval and peer pressure on decision making.
- p) Identify protective factors and strategies that may prevent acts of violence.
- q) Identify strategies for the peaceful resolution of conflict.
- r) Evaluate protective factors needed to prevent gang involvement.

Community/Environmental Health

- s) Identify life-threatening situations that may result from emergencies and natural disasters and community resources for emergency preparedness.
- t) Explain the role of health, wellness, education, safety, and business professionals in addressing environmental health concerns.

- u) Describe how and where to access community resources related to organ donation, homelessness, underage drinking, and/or substance abuse.
- v) Analyze how health literacy reduces health risks and enhances health and wellness of oneself and others throughout life.
- w) Research high school health and medical science industry-recognized credentials (e.g., personal trainer, athletic trainer, dietary aide, dental assistant, certified nurse assistant, home health aide, geriatric aide).

Advocacy and Health Promotion

10.3 The student will advocate for personal health and well-being and promote health-enhancing behaviors for others.

Body Systems

- a) Promote strategies for maintaining healthy cardiovascular and lymphatic systems.

Nutrition

- b) Create or modify a personal wellness plan (i.e., goals and action steps based on current guidelines) for healthy eating to meet current and future needs.

Physical Health

- c) Create or modify a personal wellness plan for physical activity, sleep, personal hygiene, and other health-enhancing behaviors to prevent communicable and chronic disease.

Disease Prevention/Health Promotion

- d) Promote strategies to help individuals select technologies to assess, monitor, improve, and maintain health.
- e) Determine strategies for improving access to health care and medical services for different stages of life.
- f) Design strategies to address and communicate to others about a selected personal, community, or global health issue.

Substance Abuse Prevention

- g) Demonstrate assertive communication skills to resist pressure to use alcohol, tobacco, and other drugs.
- h) Educate others about the dangers of electronic cigarettes through a brochure, social media campaign, or school club.
- i) Encourage responsible teen driving behaviors, and practice using refusal and negotiation skills to avoid riding in a car with someone who has been using alcohol or other drugs.

Safety/Injury Prevention

- j) Promote safe practices related to online communication and in-person interactions with individuals one meets online.

Mental Wellness/Social and Emotional Skills

- k) Explain how demonstrating empathy, compassion, and acceptance can support others who are dealing with mental illnesses and challenges and help reduce stigma.
- l) Promote resources and strategies to address unhealthy and abusive peer, family, and dating relationships.
- m) Advocate for the use of and the additional need for mental health resources at school and in the community.
- n) Describe strategies to set personal boundaries to reduce and prevent relationship and dating violence.

Violence Prevention

- o) Demonstrate effective communication in response to situations influenced by peer pressure and/or peer approval.
- p) Describe methods to avoid violent acts of aggression and use of weapons.
- q) Practice procedures for peaceful resolution of conflict.
- r) Describe and demonstrate methods of avoiding gang-related activity and gang involvement.

Community/Environmental Health

- s) Design crisis-management strategies for natural disasters and emergency situations.

- t) Describe strategies to reduce risk to environmental health, and establish goals for improving environmental health.
- u) Identify and create a plan to address a community health-related social issue, such as organ donation, homelessness, underage drinking, or substance abuse.
- v) Identify health promotion opportunities to enhance the health and wellness of oneself and others.
- w) Identify high school courses that lead to health and medical science industry certifications.

Physical Education (HPEII)

Motor Skill Development

- 10.1 The student will demonstrate proficiency and apply the concepts and principles of exercise physiology, biomechanics, and anatomy in a variety of lifetime activities that may include outdoor pursuits, fitness activities, dance and rhythmic activities, aquatics, selected individual performance activities, and net/wall and target games in at least two self-selected, lifelong, skill-related physical activities.
- a) Demonstrate skill attainment in one or more lifetime activities.
 - b) Apply and demonstrate knowledge of how movement is created, directed, and stabilized in one or more lifetime activities.
 - c) Identify and demonstrate movement activities in each plane of motion (frontal, sagittal, and transverse) and activities that occur in multiple planes.
 - d) Demonstrate appropriate and proper use of equipment in one or more lifetime activities.

Anatomical Basis of Movement

- 10.2 The student will apply knowledge of biomechanics and anatomy and analyze and evaluate the ability to move proficiently and efficiently in a variety of lifetime activities.
- a) Explain how the body responds to energy needs for anaerobic and aerobic activities, including fast and slow-twitch muscle fibers, and anaerobic respiration (ATP-PC and lactic acid system) and aerobic respiration.
 - b) Analyze movement activities for component skills and movement patterns for one or more lifetime activities.
 - c) Identify and explain the relationship of opposing muscle groups (agonist/antagonist).
 - d) Explore common musculoskeletal injuries and the role of ergonomically correct movement for injury prevention.
 - e) Explain and demonstrate ergonomically correct form in strength and conditioning activities.

Fitness Planning

- 10.3 The student will demonstrate the ability to apply basic principles of training and scientific concepts and principles to evaluate current fitness behaviors and identify strategies needed for health-enhancing fitness for the present and into adulthood.
- a) Construct a fitness and activity plan for the present and the future (postsecondary education, college/career) to address the health-related components of fitness.
 - b) Identify the key factors an informed fitness consumer must evaluate to make critical and effective decisions when purchasing fitness products and/or services.
 - c) Identify fitness needs to prevent health concerns in the present and into the future.
 - d) Identify the effects of life choices, economics, motivation, accessibility, exercise adherence, and participation in physical activity in college or career settings.
 - e) Describe components of health-related fitness in relation to one career goal.
 - f) Explain the effects of physical activity on emotional and social well-being for the present and into the future.
 - g) Apply rate of perceived exertion (RPE) and pacing to a conditioning plan that meets the needs of one or more lifetime activities.
 - h) Design and implement a program for strength and conditioning.

Social and Emotional Development

- 10.4 The student will demonstrate appropriate behaviors in all physical activity settings and the social skills needed to be a contributing member of society.
- a) Explain the importance of and demonstrate effective communication skills in physical activity settings.

- b) Explain the importance of and apply relationship and conflict resolution skills and social awareness for current and future health and fitness.
- c) Identify and avoid prejudices and biases in physical activity settings.
- d) Explain the importance of understanding cultural diversity for personal health and fitness.
- e) Evaluate opportunities for social interaction and social support in a self-selected physical activity or dance.
- f) Apply stress-management strategies (e.g., mental imagery, relaxation techniques, deep breathing, aerobic exercise, meditation) to reduce stress.
- g) Explain the mental and emotional benefits of mind-body exercise/activities (e.g., yoga, Pilates, tai chi).
- h) Identify ways to promote equity and inclusion and embrace diversity in a physical activity setting.

Energy Balance

- 10.5 The student will explain the importance of energy balance and evaluate current caloric intake and caloric expenditure to maintain optimal health and prevent chronic disease for the present and into adulthood.
- a) Analyze the relationships among physical activity, nutrition, body composition, and sleep that are optimal for personal health and/or for participation in lifetime activities.
 - b) Evaluate current activity and intensity levels.
 - c) Evaluate current caloric expenditure and intake needs.
 - d) Evaluate current sleep needs.
 - e) Evaluate the caloric intake needs for before, during, and after a variety of lifetime activities.
 - f) Explain energy balance (caloric expenditure vs. caloric intake) in relation to changing needs from adolescence through adulthood.
 - g) Explain the potential consequences of energy imbalance (e.g., over-exercising, under-eating, overeating, sedentary lifestyle).
 - h) Explain the role of perseverance and tenacity in achieving lifelong energy balance.

Driver Education

DE.1 The student will demonstrate an understanding of Virginia traffic laws, licensing procedures, and other responsibilities associated with the driving privilege. Key concepts include

- a) demonstrating an understanding of graduated driver licensing requirements, types of licenses, and required identification documentation;
- b) analyzing traffic safety information in the *Virginia Driver's Manual*;
- c) comparing the *Virginia Driver's Manual* information with the motor vehicle section of the *Code of Virginia*; and
- d) investigating the social implications and understanding the civic responsibility of the organ- and tissue-donation designation process.

DE.2 The student will demonstrate an understanding of basic vehicle operating procedures. Key concepts/skills include

- a) understanding and sequentially demonstrating pre-driving procedures;
- b) comparing starting procedures for automatic and manual transmissions;
- c) interpreting and accurately responding to vehicle information, warning, and control devices;
- d) applying efficient accelerating, braking, and steering techniques; and
- e) demonstrating vehicle securing procedures.

DE. 3 The student will demonstrate the ability to use vehicle reference points and explain how visual referencing skills aid in judging vehicle position and distance when executing basic driving maneuvers for

- a) parking;
- b) turning;
- c) establishing lane position; and
- d) backing.

DE. 4 The student will identify how laws of physics (i.e., momentum, gravity, inertia) effect force of impact.

Key concepts/skills include

- a) analyzing how sitting and hand position affect ergonomics and vehicle control;
- b) evaluating how steering, braking, and accelerating positively and negatively impact vehicle control and balance;
- c) identifying and accurately compensating for shifts in vehicle load (from side to side, front to rear, and rear to front) that affect vehicle performance;
- d) demonstrating how to prevent and correctly manage front tire traction loss (understeer) and rear tire traction loss (oversteer); and
- e) analyzing the cause and severity of types of collisions, (i.e., head-on, near-frontal, broadside, rear-end, rollover, sideswipe).

DE.5 The student will demonstrate the ability to manage visibility, time, and space to reduce driving risks and avoid collisions. Key concepts/skills include

- a) demonstrating targeting and tracking skills;
- b) synthesizing information visually from the driving environment using the Search, Evaluate and Execute in Time (SEEiT) space-management decision-making process;
- c) applying following distance, time and other space management concepts;
- d) selecting appropriate speed, maintaining adequate space, and skillfully judging time and distance to safely execute basic driving maneuvers;
- e) estimating time and space needs for passing; and
- f) identifying and adeptly responding to open and closed spaces and changes to line-of-sight and path-of-travel.

DE.6 The student will demonstrate skills to make appropriate adjustments when approaching controlled and uncontrolled intersections, curves, work zones, railroad crossings, and hills with line-of-sight and path-of-travel limitations. Key concepts/skills include

- a) analyzing and applying right-of-way rules and demonstrating appropriate communication skills;
- b) displaying responsible actions and safe response to roadway signs, signals, and markings;
- c) assessing and managing slope/grade of terrain; and
- d) modifying vehicle position and speed to manage the effects on momentum, balance, and control.

DE.7 The student will identify the unique characteristics of an expressway and apply risk management driving strategies. Key concepts/skills include

- a) managing different types of interchanges (e.g., diamond, trumpet, cloverleaf);
- b) entering, merging, and exiting without interrupting traffic flow, preparing for variable and higher speeds and managing toll facilities;
- c) selecting appropriate speed, correct lane, lane position, changing lanes on multi-lane roadways, and detecting and avoiding highway hypnosis; and
- d) demonstrating an understanding of the integrated numbering system for highways within the nationwide grid in the contiguous United States.

DE.8 The student will demonstrate the ability to communicate presence and intentions to other highway transportation users. Key concepts/skills include

- a) interpreting vehicle position and driver action;
- b) utilizing vehicle communication devices; and
- c) demonstrating hand signals for slow/stop, right turn and left turn.

DE.9 The student will analyze and describe the physiological, psychological, and cognitive effects of alcohol, marijuana and other drugs and their impact on a driver's awareness of risks, and involvement in collisions. Key concepts/skills include

- a) evaluating the impact of prescription and nonprescription medications on mood, personality, risk taking, coordination, judgment, reaction time, and driver performance;

- b) demonstrating an understanding that driving while impaired by any substance (legal or illegal drugs) places the driver and others in harm's way.
- c) researching the effects of alcohol, marijuana, and other drugs on vision and space management;
- d) analyzing how the synergistic effects of using two or more drugs at the same time can amplify the impairing effects of each drug; and
- e) examining physiological and biological factors that influence how alcohol, marijuana, and other drugs are absorbed, metabolized, and eliminated from the body.

DE.10 The student will identify and analyze the legal and economic consequences associated with alcohol, marijuana, and other drug use while driving. Key concepts/skills include

- a) analyzing the impact of positive and negative peer pressure;
- b) describing the mediating influence of refusal and peer-intervention skills on preventing alcohol, marijuana, and other drug misuse;
- c) comparing Implied Consent, Zero Tolerance and Use and Lose laws and demonstrating an understanding of why driving while impaired is illegal;
- d) researching Administrative License Revocation, loss of license, ignition interlock and other licensing restrictions,
- e) analyzing court costs, insurance requirements, Virginia Alcohol Safety Action Program referral, and other penalties associated with impaired driving; and
- f) evaluating the effectiveness of alternative safe transportation programs as countermeasures for reducing impaired driving.

DE.11 The student will recognize the consequences of aggressive driving and the influence of emotions on driving behaviors. Key concepts/skills include

- a) evaluating how stress and anxiety affect driver fitness and mental preparedness;
- b) identifying how anger management strategies reduce hostility and frustration;
- c) analyzing how aggressive driving and road rage pose a threat to the health and safety of everyone on the road; and
- d) quantifying the legal and financial consequences of reckless driving and road rage.

DE.12 The student will analyze the effects of fatigue and other conditions that impact driver performance. Key concepts include

- a) identifying fatigue warning signs and countermeasures;
- b) analyzing the relationship between circadian rhythms and sleep deprivation;
- c) comparing the effect of short- and long-term physical and cognitive disorders on the driving tasks; and
- d) evaluating how chronic health conditions may affect driver performance.

DE.13 The student will identify visual, auditory, manual, and cognitive distractions that divert attention from the driving task and analyze how divided visual and mental attention contribute to driver error. Key concepts/skills include

- a) researching and evaluating the most dangerous distracted driving behaviors (e.g., texting, setting navigation systems, reading emails, adjusting radio and other controls, eating, drinking, smoking, personal grooming);
- b) gathering and analyzing strategies to prevent distractions that take the driver's eyes off the road and hands off the wheel;
- c) identifying interior distractions (e.g., interactive technologies, passengers, pets, insects);
- d) evaluating the impact of exterior distractions (e.g., looking at crash scenes, places of interest, billboards, emergency vehicles); and
- e) demonstrating an understanding of distracted driving laws and analyzing the cost of distracted driving.

DE.14 The student will identify changes in the environment that affect visibility and traction and evaluate appropriate communication, speed, and lane position adjustment to reduce risks. Key concepts/skills include

- a) mitigating limitations (e.g., nighttime visibility, overdriving headlights, curve-adaptive headlights) when driving at night;
- b) evaluating multiple solutions for smoke- and weather-related conditions that reduce visibility;
- c) demonstrating an understanding and responding appropriately to road construction and other adverse road conditions; and
- d) examining the difference between electronic vehicle stability control and traction control systems.

DE.15 The student will demonstrate an understanding of the proper use of vehicle occupant-protection features and analyze how they can reduce injury severity and increase collision survival. Key concepts/skills include

- a) investigating the efficacy of active restraint systems (e.g., seat belts, head restraints, child safety seats);
- b) analyzing the effect of seating and steering wheel position on injury severity;
- c) investigating legal obligation, ethical decision making, and the importance of advocating for proper use of vehicle occupant-protection devices; and
- d) researching Virginia's occupant protection laws and understanding the dangers of riding in the bed of a truck; and
- e) analyzing automotive safety and highway transportation system career options based on personal interests, abilities, achievements, and goals.

DE.16 The student will analyze how technological innovations affect driving practices and reduce human error. Key concepts/skills include

- a) demonstrating an understanding of advanced safety features (e.g., electronic stability control systems, blind spot detection, forward collision warning, lane departure warning);
- b) comparing efficacy of passive occupant protection systems to include thorax, curtain, knee and other airbags and adaptive cervical head restraint systems;
- c) demonstrating an understanding of advanced driver assist features (e.g., rearview video systems, automatic emergency braking, pedestrian automatic emergency braking, rear automatic emergency braking, lane centering assist);
- d) researching partially automated safety features (e.g., lane keeping assist, adaptive cruise control, traffic jam assist, self-park);
- e) analyzing the impact of fully autonomous safety features (e.g., autopilot self-driving vehicles that will integrate onto roadways by progressing through six levels of driver assistance technology advancements in coming years); and
- f) analyzing the transformative potential of new mobility options and employment opportunities that automated vehicles may provide for millions of people with disabilities.

DE.17 The student will identify and evaluate emergency-response strategies to avoid or reduce the severity of a collision. Key concepts/skills include

- a) analyzing and demonstrating evasive maneuvers, using braking and steering combinations while maintaining front and rear traction control;
- b) identifying open space as an emergency escape route;
- c) recognizing how decisions are influenced and limited by the environment, the vehicle, driver error, and driver capabilities; and
- d) demonstrating a gradual stepwise approach to safe off-road recovery.

DE.18 The student will identify and describe the performance characteristics of other road users and apply problem-solving skills to minimize risks when sharing the roadway. Key concepts/skills include investigating the unique characteristics and vulnerabilities of

- a) pedestrians and animals;
- b) bicycles, scooters, mopeds, and motorcycles;
- c) tractor-trailers, trucks, and construction vehicles;
- d) sport utility vehicles, recreation vehicles, and trailers;
- e) emergency vehicles;

- f) funeral processions;
- g) passenger and school buses;
- h) farm machinery and horse-drawn vehicles; and
- i) highway workers.

DE.19 The student will compare vehicle braking systems and explain proper braking techniques for various conditions. Key concepts/skills include

- a) demonstrating proper use of conventional hydraulic brake systems and understanding of new technologies such as regenerative braking;
- b) demonstrating and evaluating appropriate use of controlled braking, trail braking, and threshold braking;
- c) engaging antilock brake systems (ABS) and steering toward a target; and
- d) analyzing how preventive maintenance and the annual state safety inspection reduces the possibility of brake failure and enhances safety.

DE.20 The student will analyze how regular preventive maintenance reduces the possibility of vehicle failures and recognize the warning signs that indicate the need for maintenance, repair, or replacement. Key concepts/skills include demonstrating an understanding of

- a) vehicle warning devices;
- b) lights and signals;
- c) steering and suspension systems;
- d) tires and braking systems;
- e) fluids, cooling systems, and belts; and
- f) fuel system and ignition electronics.

DE.21 The student will investigate vehicle ownership responsibilities including the processes and legal responsibilities for purchasing or leasing a vehicle as well as the operating and maintenance costs. Key concepts/skills include

- a) demonstrating an understanding of the Financial Responsibility Law (*Code of Virginia § 46.2-706*);
- b) differentiating between required and optional insurance coverage;
- c) demonstrating an understanding of title and vehicle and registration requirements;
- d) analyzing vehicle inspection and emissions requirements;
- e) evaluating the advantages and disadvantages of purchasing or leasing an all-electric, hybrid electric, hydrogen fuel cell, ethanol, biodiesel, natural gas or traditional gas-powered vehicle; and
- f) calculating depreciation and estimating a budget for routine maintenance and repair costs for new and older vehicles.

DE.22 The student will demonstrate competent map-reading and road-trip-planning skills by utilizing available resources. Key concepts/skills include

- a) analyzing reliable trip-planning resources;
- b) creating an itinerary, calculating total trip time, investigating alternative routes, traffic, rest stops, and other options;
- c) calculating the cost of a trip to include fuel, tolls, daily and total mileage, fuel efficiency, food, hotels, and other variables; and
- d) demonstrating an understanding of safe and legal practices for using navigation tools while driving.

DE. 23 The student will research and evaluate the environmental impact of transportation options and how to choose fuel-efficient vehicles. Key concepts/skills include

- a) analyzing how all-electric, hybrid electric, hydrogen fuel cell, ethanol, biodiesel, and natural gas-powered vehicles conserve fuel and lower vehicle emissions;
- b) comparing and evaluating the environmental impact of using public transportation, walking, cycling, ridesharing, and carpooling;

- c) examining the health risks of air pollution and how some passenger vehicles produce significant amounts of nitrogen oxides, carbon monoxide, and other pollution;
- d) investigating appropriate disposal of batteries, fluids, tires, and other environmentally hazardous materials; and
- e) demonstrating an understanding of energy conservation, alternative or renewable sources of energy, conservation of natural resources, and green driving practices (e.g., smooth acceleration, idle reduction, properly inflated tires, eliminating excess weight, anticipating stops).

DE.24 The student will demonstrate an understanding of safe interaction with law enforcement and the steps to take if involved in or a witness to a crash. Key concepts/skills include

- a) analyzing factors that may enhance safe interaction with law enforcement at the roadside (e.g., don't panic, slow down, signal and locate a safe location, pull over, turn engine and radio off, keep hands on steering wheel, show respect, provide registration, driver's license, and proof of insurance when asked);
- b) investigating the consequences of moving violations and demerit points; and
- c) examining the driver's legal responsibilities at a crash scene (*Code of Virginia § 46.2-896*).

Aaron C. Spence, Ed.D., Superintendent
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For further information, please call (757) 263-1070.

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The School Division is committed to providing educational environments that are free of discrimination, harassment, and bullying. Students, staff, parents/legal guardians who have concerns about discrimination, harassment, or bullying should contact the school administration at their school. Promptly reporting concerns will allow the school to take appropriate actions to investigate and resolve issues. School Board Policy [5-7](#) addresses non-discrimination and anti-harassment, Policy [5-44](#) addresses sexual harassment and discrimination based on sex or gender. Policy [5-36](#) and its supporting regulations address other forms of harassment.

Alternative formats of this publication which may include taped, Braille, or large print materials are available upon request for individuals with disabilities. Call or write Casey Conger, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038. Telephone 263-1070 (voice); fax 263-1424; 263-1240 (TDD) or email her at Casey.Conger@vbschools.com.

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