Argumentative Essay Prompt A4: TABLETS v. TEXTBOOKS
Be sure to annotate before filling out your Planning Web.

ESSAY PROMPT: In a multi-paragraph, well-organized essay, take a stance on the following issue: Should tablets replace textbooks in K-12 schools?
Remember to support your claim with relevant textual evidence and be sure to include a counter-argument to make your argument more effective.

Source - ProCon.Org

Background:
Publishing for the K-12 school market is an $8 billion industry, with three companies - McGraw-Hill, Pearson, and Houghton Mifflin Harcourt - capturing about 85% of this market. [32] Tablets are a $72 billion industry with 42% of US adults owning a tablet. [33][34] As tablets have become more prevalent, a new debate has formed over whether K-12 school districts should switch from print textbooks to digital textbooks on tablets and e-readers.

Proponents of tablets say that they are supported by most teachers and students, are much lighter than print textbooks, and improve standardized test scores. They say that tablets can hold hundreds of textbooks, save the environment by lowering the amount of printing, increase student interactivity and creativity, and that digital textbooks are cheaper than print textbooks.

Opponents of tablets say that they are expensive, too distracting for students, easy to break, and costly/time-consuming to fix. They say that tablets contribute to eyestrain, headaches, and blurred vision, increase the excuses available for students not doing their homework, require costly Wi-Fi networks, and become quickly outdated as new technologies are released.

Some Interesting Facts:
- A 4GB tablet filled with 3,500 e-books weighs a billionth of a billionth of a gram more than if it were empty of data - a difference that is approximately the same weight as a molecule of DNA. The same number of physical books would weigh about two tons. [1]
- In San Francisco, New York, and Los Angeles, robberies related to internet-enabled handheld devices (including tablets) have accounted for 50, 40, and 25 percent respectively of all robberies in 2012. [2]
- Manufacturing one tablet requires the extraction of 33 pounds of minerals, 79 gallons of water, and 100 kilowatt hours of fossil fuels resulting in 66 pounds of carbon dioxide. [3]
- Students who used an interactive, digital version of an Algebra 1 textbook for Apple's iPad in California's Riverside Unified School District in 2012 scored 20 percent higher on standardized tests vs. students who learned with print textbooks. [4]
- During the 2011-12 school year more than 13,700 US children, aged 5 to 18, were treated in hospitals and doctors' offices for backpack-related injuries (5,000 in emergency rooms) such as contusions, sprains, fractures, and strains to the back and shoulders.

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Tablets help students learn more material faster. Technology-based instruction can reduce the time students take to reach a learning objective by 30-80%, according to the US Department of Education and studies by the National Training and Simulation Association.	**Handheld technological devices including tablets are associated with a range of health problems.** Handhelds contribute to Computer Vision Syndrome, which causes eyestrain, headaches, blurred vision, and dry eyes, according to the American Optometric Association. People who use mobile devices more often have a higher incidence of musculoskeletal disorders associated with repetitive strain on muscles, including carpal tunnel syndrome, neck pain ("text neck"), shoulder pain, and fibromyalgia.

81% of K-12 teachers believe that "tablets enrich classroom education." The survey of technology in the classroom by the Public Broadcasting Service (PBS) also concluded that 77% of teachers found technology to "increase student motivation to learn."

Tablets can hold hundreds of textbooks on one device, plus homework, quizzes, and other files, eliminating the need for physical storage of books and classroom materials. The average tablet contains anywhere from 8 to 64 gigabytes (GB) of storage space. On the Amazon Kindle Fire, for instance, 1,000 books take up one GB of space.

Using tablets is more expensive than using print textbooks. Implementing tablets in K-12 schools requires purchasing hardware (the tablet) and software (the textbooks), building new wi-fi infrastructure, and training teachers and administrators how to use the technology. Implementation costs for e-textbooks on iPad tablets are 552% higher than new print textbooks in an average high school. Lee Wilson, a prominent education marketing expert, estimated the annual cost per student per class with tablets to be $71.55 vs. $14.26 for print textbooks.

Tablets have too many distractions for classroom use. Students may pay attention to apps, email, games, and websites instead of their teachers. 87% of K-12 teachers believe that "today's digital technologies are creating an easily distracted generation with short attention spans." Four-fifths of students aged 8 - 18 multitask while using digital media.

E-textbooks on tablets cost on average 50-60% less than print textbooks. According to a 2012 report from the Federal Communications Commission (FCC), K-12 school districts spend more than $8 billion per year on textbooks. E-textbooks can save schools between $250-$1,000 per student per year. Tablet prices also continue to drop, making them increasingly affordable. Tablets cost on average $489 in 2011, $386 in 2012, and are projected to cost $263 in 2015.

People who read print text comprehend more, remember more, and learn more than those who read digital text. The brain interprets printed and digital text in different ways, and people generally read digital text 20-30% slower than print. According to Pulitzer Prize winning technology writer Nicholas Carr, peer-reviewed studies show that reading hyper-linked text may increase the brain's "cognitive load," lowering the ability to process, store, and retain information, or "translate the new material into conceptual knowledge."

Tablets help to improve student achievement on standardized tests. Publisher Houghton Mifflin Harcourt tested an interactive, digital version of an Algebra 1 textbook for Apple's iPad in California's Riverside Unified School District. Students who used the iPad version scored 20 percent higher on standardized tests versus students who learned with traditional textbooks.

Many students do not have sufficient home internet bandwidth to use tablets. Students "need home broadband to access digital content and to complete Internet based homework," according to FCC Chairman Julius Genachowski and Secretary of Education Arne Duncan, but about a third of Americans – 100 million people – do not have broadband internet at home. A 2010 FCC survey found that nearly 80% of K-12 schools reported broadband connections that were "inadequate to meet their current needs.

Tablets contain many technological features that cannot be found in print textbooks. Tablets give users the ability to highlight and edit text and write notes without ruining a textbook for the next user. Tablets have a search function, a backlighting option to read in low light, and a built-in dictionary. Interactive diagrams and videos increase student creativity, motivation, attentiveness, and engagement with classroom materials.

Manufacturing tablets is environmentally destructive and dangerous to human health. According to the New York Times, the "adverse health impacts from making one e-reader are estimated to be 70 times greater than those from making a single book." One tablet requires the extraction of 33 pounds of minerals, 79 gallons of water, and 100 kilowatt hours of fossil fuels resulting in 66 pounds of carbon dioxide. Print books produce 100 times fewer greenhouse gases. Two gallons of water are required to make the pulp slurry that is pressed and heat-dried to make paper, and only two kilowatt hours are required to form and dry the sheets of paper.

Print textbooks are heavy and cause injuries, while a tablet only weighs 1-2 pounds. Pediatricians and chiropractors recommend that students carry less than 15% of their body weight in a backpack, but the combined average weight of textbooks in History, Mathematics, Science, and Reading/Language Arts exceeds this percentage at nearly all grade levels from 1-12. According to the US Consumer Product Safety Commission, during the 2011-12 school year more than 13,700 kids, aged 5 to 18, were treated for backpack-related injuries.

Tablets help students better prepare for a world immersed in technology. Students that learn technology skills early in life will be better prepared to pursue relevant careers later in life. The fastest growing and highest paying jobs in the United States are technology intensive. Employment in "computer and information systems" is expected to grow by 18% between 2010-20, according to the US Bureau of Labor Statistics.

A broken tablet requires an experienced technician to fix, which can be costly and time-consuming. Textbooks can usually be repaired with basic supplies such as glue or tape.

Print textbooks cannot crash, freeze, or get hacked. Unlike tablets, there is no chance of getting malware, spyware, or having personal information stolen from a print textbook.

The average battery life of a tablet is 7.26 hours, shorter than the length of a school day. Tablets constantly need charging, increasing electricity demands on schools and the need for new electrical outlets.

Tablets are more susceptible to theft than print textbooks. In San Francisco, New York, and Los Angeles, robberies related to internet-enabled handheld devices (including tablets) have accounted for 50, 40, and 25 percent respectively of all robberies in 2012. Stolen and lost internet-enabled handheld devices have cost Americans more than $30 billion in 2012.

On a tablet, e-textbooks can be updated instantly to get new editions or information. Schools will not have to constantly purchase new hardware, software, or new physical copies of textbooks. FCC Chairman Julius Genachowski and Secretary of Education Arne Duncan said that "too many students are using books that are 7-10 years old with outdated material." Tablets are especially beneficial for subjects that constantly change, such as biology or computer science.

Tablets lower the amount of paper teachers have to print for handouts and assignments, helping to save the environment and money. A school with 100 teachers uses on average 250,000 pieces of paper annually. A school of 1,000 students on average spends between $3,000-4,000 a month on paper, ink, and toner, not counting printer wear and tear or technical support costs.

Tablets allow teachers to better customize student learning. There are thousands of education and tutoring applications on tablets, so teachers can tailor student learning to an individual style/personality instead of a one-size-fits-all approach. There are more than 20,000 education apps available for the iPad alone.

Files on one tablet can be downloaded onto any other tablet, increasing flexibility and convenience for teachers and students. E-textbooks and other files can be stored on "cloud" servers and accessed on any equivalent device. Users can sign into an account on a different device and access all of their information.

Tablets enable students to cut corners or cheat on schoolwork. Students can easily avoid reading and analyzing texts on their own because they can quickly look up passages in an e-textbook and search for answers on the internet.

Tablets increase the number of excuses available for students not doing their schoolwork. Students have new available excuses, including: "the tablet broke/froze," "I forgot the tablet at home so I can't do schoolwork today," and "I couldn't find my charger."

Tablets shift the focus of learning from the teacher to the technology. This change marginalizes decades of learned wisdom in the teaching profession in favor of an unproven technology. According to education reformer Mike Schmoker, until the core elements of literacy and critical thinking are learned by every student, "it makes little sense to adopt or learn new programs, technology, or any other innovations." Technology gets in the way and makes learning and teaching more burdensome.

Tablets are unnecessary because print textbooks that are not brand new still convey relevant information to K-12 students. A K-12 student learning from an older print textbook still learns the basics of anatomy, physics, algebra, geometry, and the US government.