3. Distinguishing arguments and counterarguments:  
*Should tablets replace textbooks in K-12 schools?*

Match arguments and counter-arguments:

1. Read the arguments related to the value of tablets vs. textbooks in Column A. Match each argument in Column A with its counterargument(s) in Column B.
2. Write the best response(s) from Column B in the appropriate space. You may find several counterarguments for one argument. You may find that one counterargument matches several arguments.
3. Compare, discuss and justify your responses with classmates.

<table>
<thead>
<tr>
<th>Ans</th>
<th>Arguments</th>
<th>Counterarguments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>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.</td>
<td>A. 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.</td>
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<td>2.</td>
<td>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 &quot;today’s digital technologies are creating an easily distracted generation with short attention spans.&quot; Four-fifths of students aged 8 - 18 multitask while using digital media.</td>
<td>B. Students who own tablets purchase and read more books than those who read print books alone. The average tablet-owning US student reads 24 books per year on a tablet compared with 15 in print for those who do not own a tablet. According to a survey by the Pew Internet and American Life Project, 30% of e-content readers (including 40% of those under age 30) say that they now spend more time reading than they used to due to the availability of e-content.</td>
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<td>3.</td>
<td>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.</td>
<td>C. Tablets may be too difficult for less-technologically-savvy students to operate. When Daytona State College conducted an electronic textbook focus group, the most common reason given for withdrawing from the group was &quot;I did not feel that I had the technical ability to read or reference my textbook from a computer.&quot;</td>
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<td>4.</td>
<td>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%</td>
<td>D. 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.</td>
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</tbody>
</table>
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."

5. 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.

E. 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.

6. 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.

F. The higher cost of tablets marginalizes poorer school districts and increases the "digital divide." Rich school districts can afford to implement e-textbooks on tablets, while poor school districts cannot. Low income schools are less likely to implement an e-textbook program than to pay for teachers or basic classroom supplies.

7. 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.

G. 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.

8. 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.

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.

Adapted from: